

# **PROJECT MANAGEMENT**

## **Risk in Projects The Total Tool Set**

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# Risk In Projects – The Total Tool Set

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## Eyes Wide Shut (without Nicole and Tom to help)

Many project managers, when first introduced to risk management, feel that there is something “macho” about undertaking high risk projects “without a net” and that formal risk management is a sign of weakness. Secretly, I guess that we all identify somewhat with Indiana Jones as he plunges from disaster to disaster just surviving by good luck and sheer guts. The good news is that if you run into another high risk project with your eyes shut at least you won't see the risk until it hits you.

**Then, it is over suddenly.**

## Introduction

Organisations have been practicing formal risk management for many years. For example, in the financial sector, there is a highly formalized process of risk assessment and risk control in lending. Upon receiving an application for a loan, the Loans Manager would undertake a risk assessment based on the applicant's current financial position, length and stability of employment, credit rating, amount of money requested, proposed term, proposed security and so on. Risk control would then be applied to the loan including offloading the loan, insurance, monitoring of payments, late payment patterns, etc. The popularity of Peter Bernstein's *Against the Gods: The Remarkable Story of Risk* [1996] indicates that many Organisations are beginning to see risk management as a major issue for 21st Century management<sup>1</sup>.

However, studies by Accenture<sup>2</sup> and Cutter Information<sup>3</sup> show that in the general area of projects and software/technology projects, in particular, the understanding and implementation of formal risk management is extremely inconsistent.

A few years ago, our group observed this situation in a client which was acquiring another organisation for \$400,000,000. The normal Business Risk management practices of due diligence, forensic accounting reviews and so on were undertaken by external experts and took over 3 months. In addition, given that both companies were in the financial sector, another group of external risk reviews were undertaken by a number of governmental financial sector “watch-dogs”. The resultant risk reports were then submitted to the Board of the acquiring company. The same Board had just signed off on a \$100,000,000 software project with no formal risk assessment report! The project cost over \$400,000,000 in the end.

## The Risk Management process

The management of risk, in the project environment<sup>4</sup>, involves four related processes (note: some experts such as Robert Charette [1989] treat risk management as a separate component to risk assessment though most experts see risk management as the overall process). Figure 1 summarises the various elements of risk management.

The first is generally termed Risk Assessment. This process involves the identification of risk factors that are intrinsic in the activity being undertaken. For example, in the activity of commuting from home to work, we face a number of risks:

- is the family car working?
- are the trains, buses or public transport on time?
- do we have to drop the kids off at school?

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<sup>1</sup> This growing awareness has been helped by the Enron, World Com, dot-com bubble collapses and unfortunately by 9/11.

<sup>2</sup> Internal client presentation by Accenture in 1996.

<sup>3</sup> [www.cutter.com](http://www.cutter.com)

<sup>4</sup> In the broader risk arena, there are as many risk models as there are businesses. For example, political risk, future trading risk, capital risk, war risk and so on.

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- how long is the commute?
- what is the weather like?

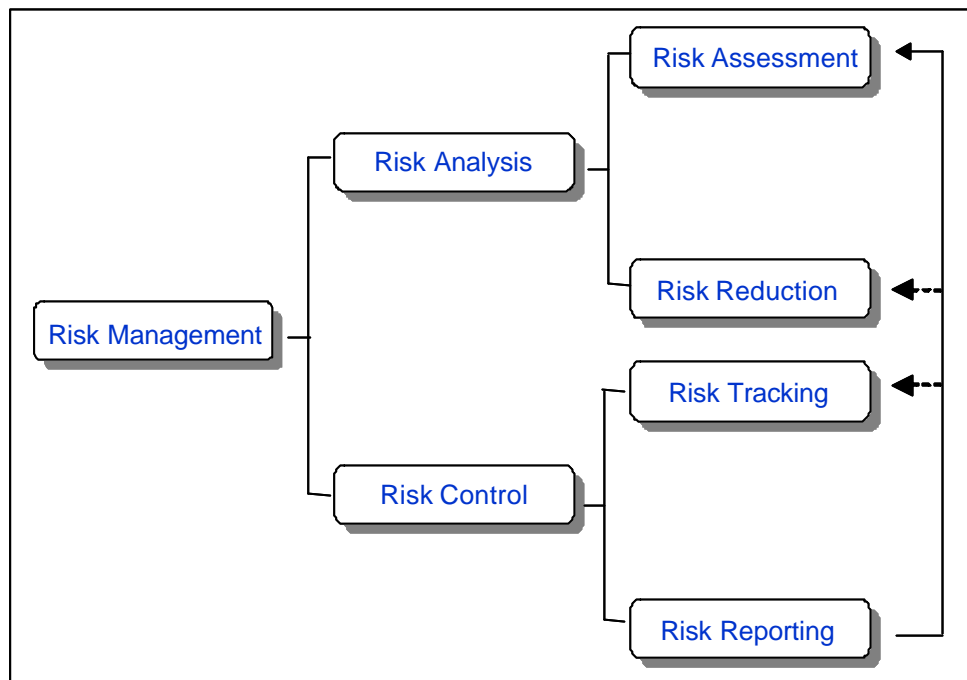


Fig. 1 - the Risk Management process

Clearly, the more risk factors involved in the activity, the higher the risk of the activity and the lower the probability of success. If you lived in an apartment next to the building in which you work, the risk involved in getting to work on time is many times lower than that facing a person with a 20 mile commute involving driving to the station, getting kids to school, taking a pre-work study course and public transport.

The second process in risk management is the process of Risk Reduction, Minimization or Containment. This process involves planning and action to reduce the risks and, if that is not possible, to introduce strategies to minimize the impact of failure.

To manage the risks in our commute, we could reduce risk by moving closer to work, obtaining flexible working hours or undertaking community and political action to improve public transport. Contingency planning such as having alternative routes or transport would be part of this process.

The third and fourth processes of Risk Management are the Risk Monitoring and Risk Reporting of the status of risks [particularly High risk factors], the identification of new risk factors that have emerged during the project and reports on the effectiveness of containment strategies. In our commute example, risk monitoring would involve watching the clock and for traffic snarls. Risk reporting could be calling work to say you'll be late and to inform your work colleagues of potential delays for other colleagues.

Risk management also involves the evaluation and management of the impact of failure of the activity. For example, what is the impact of failing to get to work on time?

- you will be fired;
- your pay will be deducted;
- you may miss an important meeting; or
- nothing.

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Clearly, the greater the impact of failure, the greater the need for pro-active risk management processes. At the same time as we are attempting to reduce the risks, we could limit the impact by establishing a good reputation at work, negotiating performance agreements not linked to being at work on time and so on (contingency planning again).

## The never-ending story

The Risk Management process in projects is never ending. It is typical that a project manager will undertake risk assessment at the beginning of projects but they will not continue to monitor existing and new risks as they emerge. In the turbulent project environment of the 2000's, it is normal for projects to change [scope, objectives and so on]. Therefore, Risk Management must be on *on-going, continuous* and an *integrated* component of the project management of the project.

## Getting our language right

Surprisingly, the most important step in adopting a more professional, consistent and transparent approach to risk management is to agree on terminology. For example, if you talk to business people about risk then depending on whether they have a bank, insurance, defense or marketing background, they will be thinking of a completely different set of risks from the ones that a software project manager would be considering. In fact, many books on and models of risk completely confuse people by attempting to include all types of risk into one model<sup>5</sup>. Simply using the term “risk” opens the risk of miscommunication (see Figure 2).



Fig. 2 – Risk? I hear you clearly

In the business and project environment, our group has identified five different but completely related risk groups or categories (see Figure 3).

These are:

- *Business Risk* - the exposure the organisation faces upon project failure;
- *Project Risk* - the factors which could cause a project to fail;
- *Production System Risk* - the risks the organisation faces in continuing support of the system, product and business processes delivered by the project;
- *Benefits Realisation Risk* - the factors which could lead to a lack of benefits realisation; and
- *Personal Risk* - the impact on your personal career and life if the project fails (or succeeds).

<sup>5</sup> In addition, most people (including me) are confused by the proliferation of technical risk jargon. At the 2003 Global Association of Risk Professionals Conference in New York noted that professional risk managers must learn to communicate in English to their clients (*Fast Company*, May 2003, pp 38).

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As indicated in Figure 3, these five risk groups are different but often they are related. It is common that the higher the *Project Risk*, the higher the probability that the project will fail and that the organisation will be exposed to the *Business Risks*. In addition, the higher the *Project Risk*, the higher the Benefits Realisation Risks would be as well as the Production Support Risks<sup>6</sup>.

While the inter-relationship between the different categories of risk is very project specific, the one relationship that is fixed is the one between *Project Risk* and *Business Risk*. Put simply,

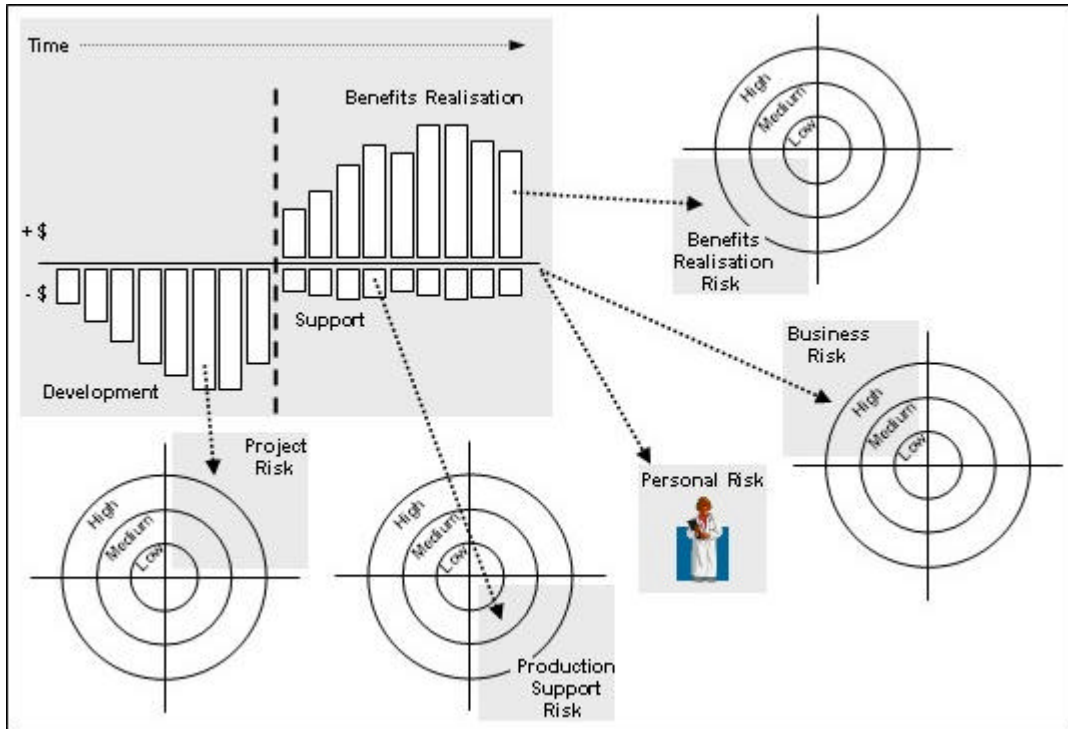


Fig. 3 – Different but related risks

the higher the risk of the project the higher the probability of failure and exposure to *Business Risk*.

For example, a bank may be undertaking a project to implement new credit controls demanded by government legislation. The *Project Risk* is assessed by the project manager as being high, as the new legislation involves complex changes to sophisticated existing information systems and business processes. The *Business Risk* is also assessed as high because, if the bank does not implement the new credit controls by the deadline, it will face possible fines, loss of trading license and substantial public scrutiny in the media. However, the resulting changes to existing systems and processes are relatively easy to support so the Production Risk is assessed as low. Given that the legislation is externally enforced, the Benefit Realisation Risk is assessed as medium. Finally, the Project Manager has no experience with similar projects, the long hours required for implementation and lack of organisation buy-in (typical for many mandatory legislative projects), the Project Manager assesses the *Personal Risk* as high.

The assessment of all risk categories requires consideration of different risk factors [see attached risk assessment tools], though the control and management of risks is similar for all categories.

## Subjective versus Objective Risk Assessment

Given that there are at least 100 plus factors which can be included in a risk model, it is difficult to gather objective measures for many of these factors. In the subjective approach, the

<sup>6</sup> The relationship between the various risk groups is project specific so it is possible to have a high Project Risk but a low Benefits Realization Risk and so on. However, the relationships described above are more common.

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complexity of the software is determined as Simple, Average and Complex depending on the group discussion.

For many business project areas, there is little or no consistent measuring of the impact of the various risk factors. For example, what is the productivity difference of an expert Marketing specialist versus and inexperienced Marketing person in developing a new television marketing campaign?

In software development, there are a number of systemic studies (see Capers Jones [1992, 1996], Barry Boehm, [1981]) that provide generic measures for a number of *Project Risk* factors. For example, the use of Function Points can provide an objective measure of software complexity/risk where there is an agreement that Simple means < 100 AFP, Average means 100 - 1000 AFP and Complex is > 1000 AFP.

## False Science

Most approaches to “measuring” risk include the use of probability and impact weighting factors. For example, the probability of requirement changes is guessed as 0.6 and the impact on the project is guesses as 0.8. These two guesses are then multiplied together to give a risk weight of 4.8 (in reality, a guess).

We prefer a simpler and more easily understood technique that puts the probability into the risk question.

“The requirements are unstable”.

Unfortunately, many of the risk factors are not practically measurable. For example, the risks associated with developing software for four different client or stakeholder groups who are engaged in advanced political warfare over the project are clearly much higher than those associated with a product for one supportive client. To quantify such factors and their impact is beyond the practical limit for most Organisations.

A sensible approach is to quantify which factors are easily measured and use subjective group agreements for the remaining factors.

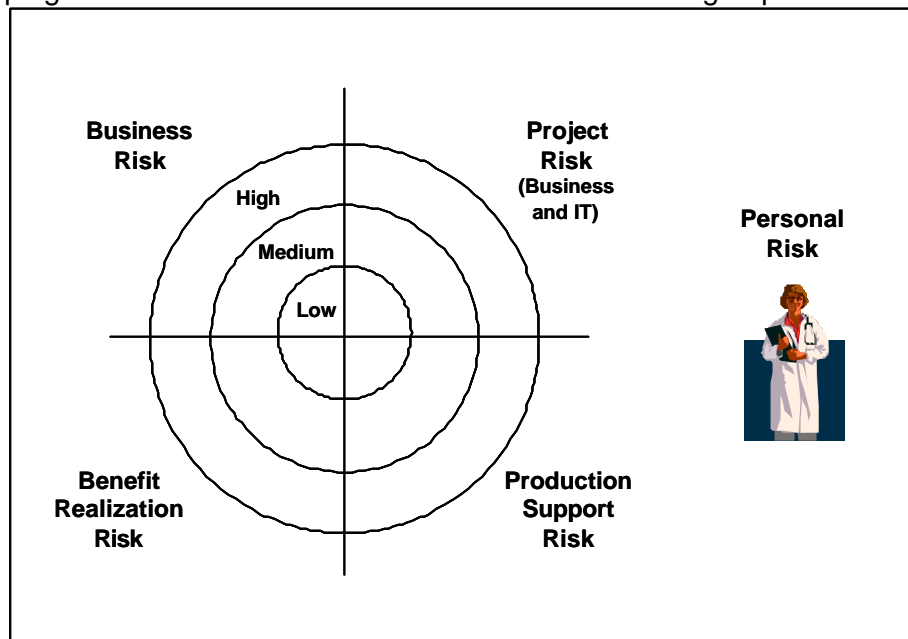


Fig. 4 – Different categories of risk

## The different risk categories

Figure 4 shows the different categories of risk in what we call the Risk Wheel plus *Personal Risk* which should not be forgotten.

## Project Risk Assessment

For most business people, there are two *different* project types. Pure business projects such as implementing a new Equal Employment Opportunity policy and, IT-related projects such as a Customer Relationship Management system. As a result, there are two different *Project Risk* assessment tools.

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## IT/Software Project Risk

Software *Project Risk* assessment is a sub-set of the broader processes of *Business Risk* management. However in the past, the process of risk assessment in software projects has tended to be intuitive and hidden. This is understandable as risk assessment is generally intuitive. When you are standing on the corner of a busy road intersection, you usually don't pull out your Palm Pilot and load up your *Crossing the Road* risk assessment tool to formally document that the two-ton Hummer running the red light at 60 mph will really put a dent in your life.

However, as shown in Figure 5, whenever a software guru is asked to estimate how long a project will take, he or she will undertake a most amazing process. In essence, the software person intuitively assesses factors he or she has learnt from bitter experience that will influence the length of the project, assesses the impact of those factors depending on the specific tasks, adjusts the estimates by the relative weights of the factors, assesses the probability of the factors actually occurring, consider how pissed-off they are at present with the state of executive pay and then calculates an adjusted estimate. No wonder computing folks are considered clever!

*Project Risk* management is simply the formalization of a process that has been covert and subjective. As a result, it has been poorly understood, communicated and practiced. (*Gratuitous*

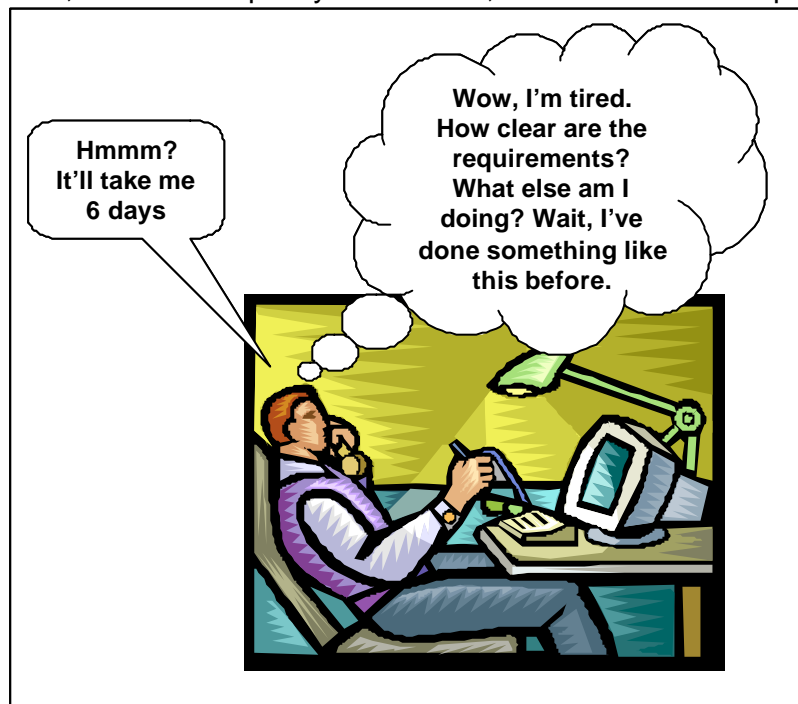


Fig. 5 – Informal risk assessment

*note* - many contemporary business and IT project management texts do not even *mention* risk management.)

When undertaking formal business or software *Project Risk* management, the risk of a project can be assessed by considering the following risk sub-categories:

- system or product complexity;
- client or target environment; and
- team environment.

## System/Product Complexity

It has long been understood that the complexity of the software or product being developed is a key factor in risk, estimation and sizing. For software projects, borrowing from Function Points, Capers Jones and Barry Boehm [op. cit.], the complexity and therefore the risk of a system can

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generally be evaluated by considering its data complexity i.e. how many inputs, outputs, enquiries, logical internal files and shared files are involved in the system.

Other factors which affect system complexity and therefore risk are:

- function and algorithm complexity;
- complex control, decision exception and/or mathematical operations;
- level of programming language;
- stability of requirements;
- performance requirements;
- high data volume, fast response time, CPU, etc.;
- innovative technology requirements;
- substantial use of tailored or special hardware/software.

By evaluating the intrinsic software complexity, the person or team undertaking risk assessment can predict the risk associated with the product i.e. is it Low, Medium or High risk? It is important that this assessment is undertaken only by considering the software not the team or target environment categories. It is useful to imagine a Museum of Modern Projects; which displayed all systems in Perspex cubes for public appreciation [or horror!]. In this context, you consider your system in comparison with others that you or your organisation has undertaken.

## *Target/Client Environment*

For many projects, the most difficult area of risk is the target area or client group for whom the product is being developed. This is because many of the risks associated with this category are beyond the team's scope of control.

The complexity and risk of the target or client environment is related to the following types of factors:

- the number of different stakeholders, clients, installations (user sites) involved in developing, implementing and using the system;
- the level of client/user knowledge of and participation in the application and the project development process;
- the degree of Project Sponsor buy-in and support;
- the priority and impact of the application within the stakeholder areas; and
- the need for physical restructuring of offices, development of new sites, etc.

Again, as for the other risk categories, when considering the risks associated with the client area, it is important for the project team to consider the client area as independently as possible from the product risks and team risks.

Continuing our Museum metaphor, the next room in the museum contains Perspex cubes containing the various stakeholder groups and Organisations that you and your team members have worked with. It is important here to emphasize that a High Risk Target/Client Environment does not mean that the stakeholder group is hopeless or incompetent. It simply means that “for this project” the stakeholder community does not have the relevant skills, buy-in and so on.

## *Team Environment*

The final category of risk involves the intrinsic risks associated with the project team. As documented by Larry Putnam and Ware Myers (1992) as well as by Boehm and Jones, the most

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significant factor affecting project productivity, risk and effectiveness is the capability, morale and experience of the team members.

The complexity or risk of the team environment is related to the following types of factors:

- schedules, whether fixed or flexible;
- the experience and likely stability of the project team;
- the development and estimated timeframe of the project;
- use of outside vendors/contractors; and
- the physical team/project environment.

## Business Project Risk

The Business *Project Risk* Assessment factors are slightly different in the area of product risk but identical in the areas of team and target risk. Typically, the factors that impact the product risk vary from project to project. For example, the specific risks associated with developing a new Marketing campaign are different to those associated with implementing a Goods and Service Tax. However, there are some common risks. These include:

- the intrinsic complexity of the business product;
- the level of innovation;
- the stability of requirements;
- the required level of quality;
- the need for conformity to external or internal policy; etc.

This business or generic risk assessment procedure is suitable for all types of business projects and many IT projects that are not software related such as installing new networks.

## Business Risk

During the risk management process, the project manager and team would also undertake a *Business Risk* analysis. Bob Charette and others provide a comprehensive approach to the evaluation, impact and probability analysis of risk impact. However, for most projects, it would be sufficient to document the impact on the organisation (and the team) of the failure of the project.

Typically, in projects, the following classes of *Business Risk* impact can be identified:

- financial - the investment in the project is lost and benefits are not accrued;
- strategic - the organisation's strategic plan is compromised;
- technical - key technology platforms are compromised;
- legal - the organisation is exposed to legal procedures including litigation and prosecution;
- political - the organisation is in violation of government requirements;
- fraud - the organisation is exposed to fraud and security violations; and
- image and reputation - the organisation faces loss of public image or reputation.

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Again, remembering Figure 3, the higher the risk of the project (as revealed by the *Project Risk* assessment process) the higher the probability that the project will fail and the organisation will be exposed to the risk impact.

As in risk control, the key is for the team to undertake the impact analysis and ensure that the relevant senior management are aware of the impact and are prepared to invest in strategies to increase the probability of project success.

## *Production Support Risk*

This category of risk assessment is completely missing in the published *Business Risk* models. This is a clear indicator that the image and importance of professional support of business and information technology systems remains one of a “second rate citizen”.

Typically, in production systems, the following types of risk factors can be identified:

- the number of different stakeholders, clients, installations (user sites) involved in active use of the production system;
- the experience of the production support team members;
- the age of the production system;
- the intrinsic quality of the production system (process or code); and
- the level of supporting documentation and training.

The higher the risk of the production system, the more likely the system will fail and take longer (or more effort hours) to fix. Of course, there are many other implications of *Production System Risk*. In the Web area, the existence of a high *Production Support Risk* could lead to exposure to *Business Risk*. An on-line banking system crash could be disastrous for the bank.

## *Benefits Realisation Risk*

This category of risk is another that is completely ignored by the majority of “risk gurus”. However, our group believes that this category of risk is vital in the processes of project approval, initiation and planning. Why would any organisation undertake a project with a high Benefits Realisation Risk unless the senior management were prepared to become totally involved in the pro-active management of these risks?

By applying Benefits Realisation Risk assessment to various projects, we have shown clients that even if the project was successful in delivering the new system, the process of benefits realisation was so High Risk that the project should not be approved.

Benefits Realisation Risk includes factors such as:

- the number of different stakeholders, clients and external partners involved in the benefits realisation process;
- the complexity of the business realisation process;
- the need for culture and other change required to realize benefits;
- the degree of executive buy-in for benefits realisation; and
- the time-frame for benefits realisation; and
- the size of the benefits to be realized.

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As in *Business Risk* management, the key is for the team to undertake the impact analysis and ensure that the relevant senior management are aware of the impact and are prepared to invest in strategies to increase the probability of Benefits Realisation.

## Personal Risk

This is our favorite. Those people who have worked with our group and those who have read our various books and articles know that our group is completely focused on the people who work on projects and the use of radical project management models (see *Radical Project Management*) to empower people to do what they aspire to – that is, to do good work, learn and have fun.

When evaluating a project, great project managers should examine a number of risk factors that they will face personally by undertaking the project. These include:

- the degree of skill/competency stretch required;
- the impact on your reputation;
- the impact on your health;
- the emotional impact;
- exposure to personal litigation;
- potential ethical and/or professional compromise required; and
- impact on your family and/or significant others.

Of course, experienced project managers would always undertake this risk assessment informally. However, this more formal process of assessment could get you to rethink.

## The Risk Assessment Process

The process of risk assessment involves a participative process where the project manager, team members and key project stakeholders complete a standard Risk Assessment tool and through a series of open discussions achieve an overall series of Risk Assessments for the project<sup>7</sup>.

What is important is the discussion undertaken during the risk assessment process between team members and stakeholders. It is a powerful process for bringing into the open assumptions and different views on the project.

In our experience, it is unlikely that a team will agree on the risk ranking of all factors. Depending on previous experience, different team members will see the project differently. If after discussion, there is still no agreement, then a voting technique where the majority wins is the best approach. If the votes are tied, then Rob's Rule for Risk Assessment should be applied:

***When planning projects, it pays to be paranoid***

and, the worst case is used for the risk assessment.

### Risk Factor Weights

Not all risks are created equal. Some risks such as fixed deadlines, unstable requirements, lack of sponsor buy-in and so on are extremely significant.

Some approaches to risk assessment involve weighting each risk factor as to its impact on the project. For example, lack of sponsor buy-in would be given an Impact Factor of "4", while team size may be given an Impact Factor of "1". This process is purely subjective.

The key here is the open discussion involved in using the Risk Assessment questionnaires.

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<sup>7</sup> Perhaps you may wish to keep the Personal Risk assessment private.

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Ideally within each organisation, there should be a formal Risk Assessment Questionnaire for each class of project e.g. in-house software, package, communications and operations.

## Risk Reduction or Containment

In many cases, during the risk assessment process, the project manager and the team will be able to identify strategies to minimize or eliminate the risk factor. For example, if the team is perceived to have a high risk because of lack of experience in the development platform, the recruiting of experts or hiring a contractor can control the risk. All high risk factors that cannot be constrained or eliminated during the risk assessment sessions should have a Risk Memorandum developed for them. This should document the risk factor, the impact of the risk on the project, what actions can the Steering Committee and project sponsor take to assist in reducing the risk and, for high impact risks, a contingency plan. Figure 6 shows a sample form for this purpose.

*Project Aardvarker*

<b>High Risk Factor</b>	
<i>Unstable requirements</i>	
<b>Potential Project Impact</b>	
<i>High levels of rework and wasted effort</i>	
<i>Possible deadline impact</i>	
<i>Higher costs</i>	
<i>Increased quality assurance</i>	
Estimated Cost of non-containment	\$100,000 - \$200,000
<b>Risk Reduction Strategies</b>	
<i>Increased client participation in Analysis Phase</i>	
<i>Agreement on minimal deliverable</i>	
<i>Extensive use of prototyping</i>	
Person/s Responsible	<i>Project Sponsor, Project Manager</i>
<b>Contingency Plan</b>	
<i>Delivery of minimal deliverable by deadline</i>	
<i>Lower quality in agreed functionality</i>	

Fig. 6 – Risk Memo

## Shooting the messenger

Often, Risk Memos are perceived as “negative” and, in fact, do focus on what can go wrong rather than what can go right. However, it is important for the Project Manager and the Project Sponsor to realize that proactive reduction of risk before the project starts is more effective and less expensive than re-active reduction of risk impact during the project.

By estimating the costs [people, dollars, time lost] of non-containment of the risk factor, the project manager can often help focus executives on the added value of proactive risk reduction. To be honest, the estimation of the cost of non-containment is often just a guess but any attempt to put a dollar value on the lack of action will help get attention to the risk minimization actions.

The pro-active reduction or elimination of risk in a project is a classic case of “win-win”. The project's sponsor and clients win as they have a higher chance of success, the project manager and team win because they have a higher chance of success and a lower level of pain in the project.

What is significant is that many project managers, like Indiana Jones, face risks in their projects that are beyond their capability (organisationally, politically and financial) to control and manage. The technique of Risk Memorandums enables the people within the organisation with the right level of power to assist the project manager in managing the risks.

Should the Project Sponsor choose to ignore the Risk Memo and fail to assist the Project Manager in implementing the risk reduction strategies suggested, then, in the worst case, the Project Manager has performed their role in a professional manner. It is our experience, that the re-delegation or “buck-passing” of risk management to Project Managers is common.

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The use of the associated analysis of *Business Risks* may help to obtain executive buy-in into the Risk Management process for projects. If by failing, a project may result in the C.E.O. having to defend his or her organisation on a T.V. current affair program, the C.E.O. may be a bit more interested in assisting in pro-active risk avoidance.

## Risk Tracking & Reporting

Having identified the High risk factors and implemented any proactive risk reduction strategies before commencing the project, the project manager, his or her team and the project stakeholders must regularly monitor:

- the effectiveness of the implemented risk reduction strategies;
- the emergence of any new risk factors;
- the elimination of existing risk factors; and
- change of status of existing risk factors i.e. a Medium risk factor becomes High risk.

The monitoring would typically occur during the normal project tracking and review meetings and reviews throughout the project. However, it is important that the project manager constantly adopts a “risk perspective”. For example, during a team meeting with stakeholders, a new requirement emerges. While the impact of the new requirement would typically be assessed from an effort, quality and time perspective, the impact of the new requirement on risk should also be carefully evaluated and reported to the Project Sponsor and stakeholders.

## Who is responsible????

One of the powerful insights that our group’s approach to risk management is that it clearly indicates who is responsible for managing which category of risk. As shown in Figure 7, the responsibility for managing risks is a shared one that requires many more people than the Project Manager to become pro-active and committed.

While this may vary across projects, the following responsibility table is a great start:

- *Business Risk* - Project Sponsor and Stakeholder executives;
- *Project Risk* - Project Manager with assistance from Sponsor;
- *Production Support Risk* - Production Support and other business and IT operational support experts;
- *Benefits Realisation Risk* - Project Sponsor and Stakeholder executives; and
- *Personal Risk* - You (and your family/significant others).

### Two cases of contingency

In the early 1990’s, two major Australian banks had \$300 million plus projects fail within 6 months of each other.

One had in place a formal Contingency Plan that involved a controlled fall-back to an existing system and a tight control on the information distribution and communication about the failure internally and externally. As a result, while the media did mention the failure, the bank managed to effectively close-down the media coverage within a week.

The other bank had no formal contingency plan and lost control of the system fall-back and, more importantly, the media exposure.

As a result, the failure (a project called CS90) is still used as a case study in a number of MBA degrees 15 years later. It is mentioned even today by certain media, bank and financial commentators.

With a sense of déjà vu, another leading Australian bank announced a \$400 million blow-out on an ERP project in 2002. It has also lost control on the media coverage. The more things change .. the more they stay the same (sic).

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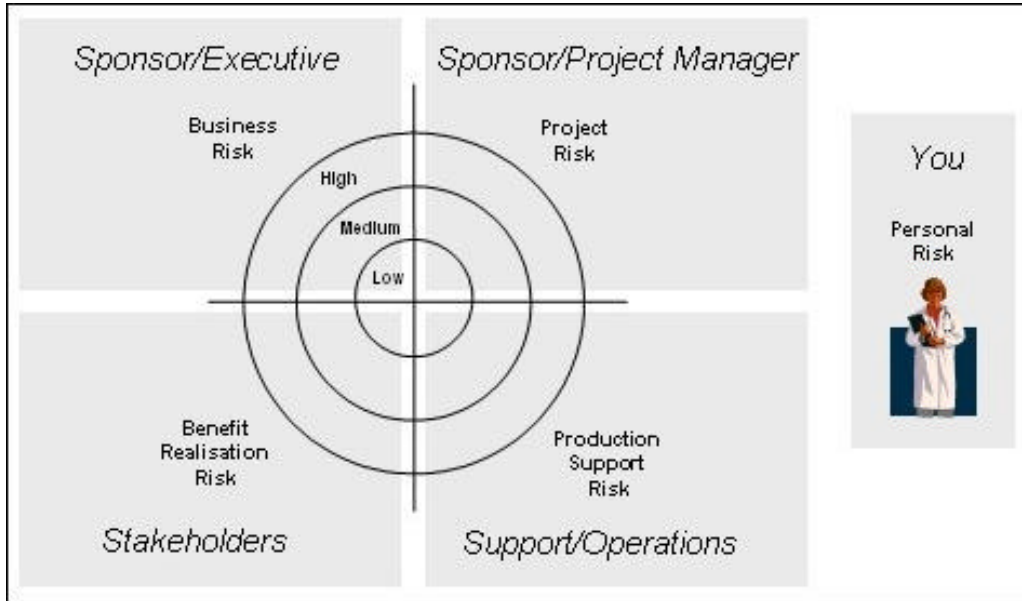


Fig. 7 – The shared responsibility for risk management

## Other Risk Management Issues

As documented by Thomsett (1992, 2002), Tarek Abdel-Hamid and Stuart Madnick (1991), the risk of the project affects the estimates, staffing, project justification and strategies.

### Estimates

Simply, the higher the risk of the project the higher the estimation error. Studies by the Rand Corporation, Charles Perrow [1984] and others of engineering and IT projects reveal that for high risk projects, estimation errors of 5:1 or greater are common.

In addition, the risk of a project and/or task affects the shape of the estimation curve. As shown in Figure 8, for the *same* project and the *same* task, depending upon whether the person undertaking the estimate perceives the task as either Low or High risk, the shape of the Best, Likely, Worst case estimates and the size of the estimation range are completely different.

If nothing else changes in your project, the least you should be able to achieve is that all estimates are undertaken

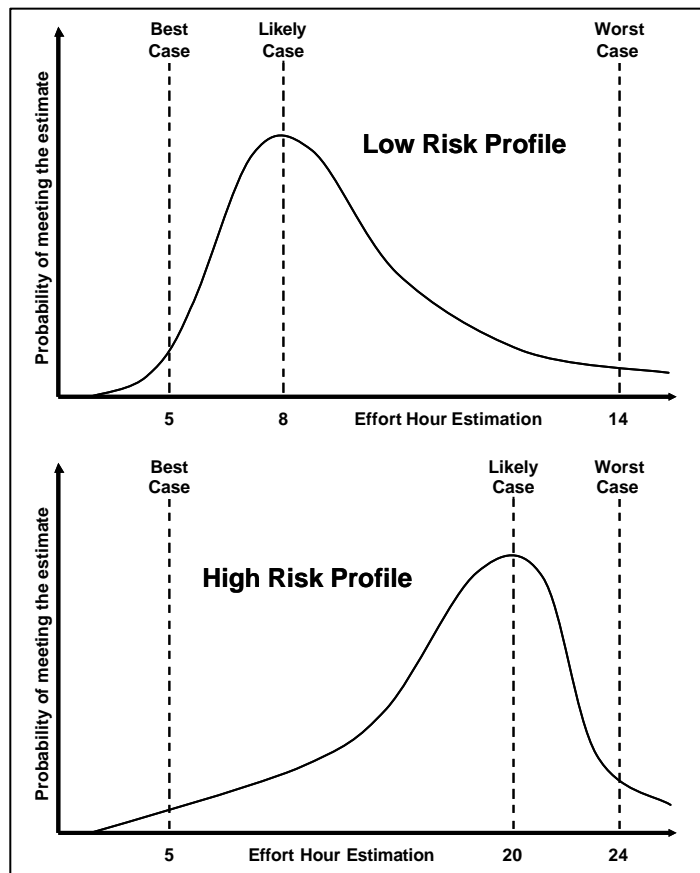


Fig. 8 – Project Risk and estimation – same task, same project

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after a formal (i.e. public and standard) *Project Risk* assessment is completed<sup>8</sup>.

Tim Lister and Tom DeMarco's book *Waltzing With Bears* (2003) and *Radical Project Management* [op. cit.] explore this relationship in more detail.

## Staffing

Given that people are the *most* significant risk factor in projects, the higher the risk of the project the higher the requirement for staffing the project with the best people and teams. Many Organisations have increased risk in already risky projects by placing inexperienced people on the project and by under-investing in team-building.

## Project Financial Justification

A project with a Return-on-Investment of 25% per year looks totally different when management are informed that it is High risk with 15 major risk factors beyond the team's capability to manage as distinct from being told that it is a Low risk project.

Simply, any project justification or Business Case is completely useless (and unprofessional) without a highly-structured and documented risk management process. As consultants, when we're reviewing a project, the first document we look for is the Risk Assessment and Risk Memorandums. Without these, we cannot evaluate the estimates, the strategy, the plans or any other project details (see *Radical Project Management* for more detail).

## Project Development Strategy

As discussed by Thomsett [op. cit.], there are numerous project development strategies available for system development. The choice of strategies such as release, fast-track, RAD, time-boxing, agile and prototyping are highly dependent on the risk of the project. For example, in the construction industry, the fast-track strategy is associated with high risk construction.

Many software projects have failed because the wrong strategy was applied. Formal risk management can ensure that the appropriate strategy is being used for the project. For example, to undertake a high risk project using the classic waterfall strategy would condemn the project to failure through analysis-paralysis as the continuous change associated with most high risk projects would mean the team would re-loop through analysis, re-loop through analysis, re-loop through analysis and so on and so on<sup>9</sup>.

### It pays to be paranoid (redux) and other mixed metaphors

When IBM and IBMGS were undertaking the IT development for the Atlanta Olympics, *Time* magazine ran an article about the problems (read risks) IBM endured during that massive and complex project. The article contained what should be an immortal phrase "IBM seemed to be moving its troops further into the valley of unjustified optimism."

One of the most destructive behaviors in project management is the "unjustified optimism" that many less experienced project managers, many stakeholders and executives seem to hold on to when planning projects.

As the truism says, plan for the worst and hope for the best.

By nature, risk assessment forces you to face the dark side of the force.

It is important that you get people comfortable with this intrinsically negative assessment process by reminding them that by being negative (for a short period) you get a really positive outcome. Proactive management of risks leads to more successful projects (and less pain).

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<sup>8</sup> Another interesting side-effect of the relationship between Project risk and estimation is that different people will use different scenarios to state their estimates. An optimistic person will always use the Best Case scenario while a battle-hardened veteran will always state the Worst Case.

# Risk In Projects – The Total Tool Set

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## Eyes Wide Shut (without Nicole and Tom to help) - Revisited

I trust that I have succeeded in convincing you that there is nothing “wimpy” in asking for assistance in risk management. It is good business sense. If you want to be Indiana Jones, try abseiling, rock climbing or bungee-jumping without a rope on *your* weekends. However, when it comes to the million dollar projects that your organisation is entrusting you to manage, leave Indiana to the movies.

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<sup>9</sup> One of the great advantages of Agile and XP development approaches is that by greatly reducing the elapsed time of development they minimize the probability of change during the development/build cycle.

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