Risk Reduction by Better Communication within the 'Business - Project' Environment

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Abstract:

The value of the effective communication of knowledge and information, in reducing and controlling risk, is one of the key elements of Goal-Achieving Risk Management. This greatly expanded approach to managing the complexities of risk generation and occurrence has been applied by TMC over a number of years. The paper illustrates this by starting at the detail of a single risk, and expands it to project and programme levels. The paper further identifies the value in enhanced communication from the business, to the programmes and projects. At the core of these methods lies the wisdom won by the enabling of communication and capability transfer between risk management disciplines, which is explained by illustrating the creation of the 'Circle of Risk'.

Introduction:

This paper is not a review of communication methods or tools, neither will it be an exhortation to ever greater efforts to communicate. The idea behind the paper is to provide a window onto certain elements, from the experiences of the author, from which the reader is invited to draw their own conclusions and learning.

The paper is divided into three core sections:

- **Building from the Detail:** the importance of effective communication about the individual risk is highlighted, and then developed into a full, operational processes-driven solution at programme and project level;

- **The Creation of the 'Circle of Risk':** This will start with the inability of two different risk management disciplines to communicate, and will go on to demonstrate how this was solved by the creation of the 'Circle of Risk';

- **Integrating the Learning:** From the 'Circle of Risk', will be drawn the justification for the 'driving back to process' approach used in the earlier section, and the advantages that were enabled from this integrated learning will also be expanded upon.

Building from the Detail:

Communication about risk has to start with the clarity that the individual, or small group, achieves in describing the individual risk. As the Risk Manager for a Rail Track Renewal programme, the author was presented with and refused to record the following risk:

" Due to running heavily loaded Engineering Trains we may get a track failure"

The reason for refusing to accept this risk, was that its wording was suggesting that the solution lay

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Some project background on the presented case history:

To undertake rail track repair or renewal, a Contractor is given responsibility for and authority over a specified length of track for a tightly defined period of time, usually over a weekend/holiday period. This track working period is called a 'Possession'. The timing of the 'Possession' is defined to the hour, and not just to the date, and it is a very serious & expensive error for a Contractor to hand back a 'Possession' late. Note, that any delay in the return of the track to full operation interferes with the Client's core rail business, and the convenience of the travelling public. It is even preferable to hand the track back in a condition that requires special, temporary limitations (e.g. speed restrictions), rather than to hand it back significantly late.

Engineering Trains are specially equipped freight trains, that transport all the materials and equipment into and out of a 'Possession', using the existent rail lines. The rail line in the example was an exclusively passenger-traffic track, and the axle loadings of the passenger trains were a fraction of those under a fully loaded Engineering Train. It was this fact that initially gave rise to concern by the 'Track Renewal Team'.

The track in question would, of course, have been originally designed for such Engineering Train loadings, but over the years of extended life it had suffered a level of deterioration. Under all rail tracks there needs to be provision for cabling, water, drainage, operating arms, and even wildlife safe-passageways. These all require small sub-structures to support the loaded rail over them (like mini-bridges & mini-tunnels), and it was the deterioration of these that was ultimately identified as being of especial concern.

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in the reduced loading of the Engineering trains. The author challenged this, as the result on programme delivery would have been increased costs to the Contractor, increased and extended rail traffic management problems for the Client, and additional disruption and delay for the Client's Clients ... namely the travelling public. For no party did this represent a value adding solution. The author went on to further research the situation, from which it transpired that it was the point loading on the ageing rail sub-structures (see the text box above), from the much greater axle loads under the Engineering Trains, that was the real concern. From this work the risk was rephrased as:

> *" There is a threat (risk) of interruption to the Client's core business, caused by a possible track sub-structure failure whilst running heavily loaded Engineering Trains, due to sub-structure deterioration"*

This statement communicates far better the cause for concern, and communicates clearly the focus needed for effective risk control action. This action took the form of track surveys and the temporary shoring or remedial work to suspect sub-structures. The added benefit of this activity, was that, unlike partially-loaded Engineering Trains, this risk counter-measure benefited all subsequent track possessions in this area, so delivering real goal-achieving value.

The wording of the risk, however, identifies an unacceptable downside, namely *"interruption to the Client's core business"*. Notice, by clear wording the severity of the risk can be easily identified, negating the need for time-consuming debate about 'impact score', 'red-amber-green', or any other information-limiting banding of risk impact (Hubbard D.W., 2009) This unacceptable downside moves this risk to being an 'Issue', and to clarify this the following three tests for 'Issue' are provided:

- **The risk is unacceptable:** as above, or by cost or delay, or say a Health & Safety matter that needs be assessed and managed in compliance to national statutory regulation that needs specialist knowledge - and therefore cannot be assessed to project risk parameters;

- **The risk creates 'No Value':** for example the risk of having no stock control in a restaurant operation, as there is no business advantage won and the cost savings are negligible;

- **The impact is more likely than not:** this refers to risks whose probability is ,say, >65%, as it is usually cheaper to manage such as certainties (with a risk of not happening), rather than trying to manage them on the fly as occurring risks.

An example of the value of real (£ $ € etc.) risk evaluation:

While correlating the information from a Project Risk Workshop, it became quickly apparent that one risk in particular should have substantial management attention. Its potential impact cost was assessed as greater than the sum of the potential impact costs of all the other risks. This identified problem so worried senior management that they convened a second project Risk Workshop, with a totally new group of attendees. With respect to the risks identified, there was a high level of similarity with the earlier workshop, and this was also true of this exceptional risk, were the second group lowered the potential impact cost from 50% of Contract value to 40%. Unwelcome news indeed for this equipment-supply contractor.

From a wider Risk Management perspective, the worrying aspect is that with the 'scoring' or 'banding' of risk the potential impact would have, say, scored a 3, but the Risk would have only scored a 6 as the probability was around 50% so scoring a 2. This result would have then left this risk lingering outside the focused attention of senior management, on the 9s, and even, possibly, outside routine risk review activity.

The author considers this a matter of grave concern, with respect to effectively communicating about risk!

This splitting out of 'Issues' then gives rise to an extended and more complex recording requirement, that is represented by the establishment of 'The Hierarchy of Information'. This consists of four separate registers, and each single piece of data can only exist in one of the registers, the data being tested in turn against the specification of each register for its validity for inclusion. 'The Hierarchy of Information' is:

- **Assumptions:** these are special forms of risk-taking, namely false or uncertain truths necessary to enable a calculation or a decision. They need to be recorded together with the testing that is required to prove their validity, or continuing validity, or not;

- **Issues:** these are definite problems that must be resolved, and include those items that test 'positive' in the above tests for 'Issue';

- **Threat Risks:** duly recorded together with their mitigations and contingency/recovery plans and the preparations necessary for the same;

- **Opportunity Risks:** noting that very few items get this far. Firstly, many such items are just wishes that create no resultant benefits, such as the 'benefit?' of spending more on maintenance when that activity is already cost optimised. Secondly, they are such good ideas that they are trapped by the Issue Register, and embedded into core process to ensure the consistent taking of benefit. Finally, they are excellent mitigations &/or recovery preparations for Threat Risks, and discounting Threat and increasing Opportunity by the same action is, in the author's opinion, a double accounting of the value of such action.

This distinct separation and stratification, assists in the clarification of the data collected and its evaluation, and hence assists in its communication to others involved or affected. An important addition to the above, and often a better source than old risk registers for the identification of risk in later projects, is a 'Learning from Experience' log or register. Looking at the registration of risk, in its widest sense, brings the observations on communicating about the individual 'risk' up to Project, or even Programme, level.

At Project or Programme level it is often difficult to prove that actions in the area of Risk Management are of value, as when any such action is taken it changes the Project or Programme, and any baseline against which measurement could have been made is lost. When the subject becomes the role of communication in risk reduction, then the task becomes even more difficult.

By pure chance there occurred an 'Exceptional Experiment', when two track renewal operations were combined, in that one had identified the 'Issues' and had pushed them back to a visible set of

pre-possession processes that could be readily monitored and responded to, and the other had used a traditional risk template, that they reused for each new rail possession proposed. The former had typically seven (exceptional) risks in the Programme Risk Register, and the latter had typically twelve hundred. As the business Key Performance Indicator (KPI) for risk management performance had been *"How many risks have been closed this week/month?"*, it should be easy to see which team had been in constant trouble for non-performance. This 'Exceptional Experiment' opportunity, however, yielded some valuable observations that questioned the validity of such KPIs, while also enabling a like-for-like risk-management approach comparison. .

The first aspect that was identified as beneficial, was the advantage of having the risk causes managed in a routine, owned and governable manner by the pre-possession processes, fully and readily communicated to others, and easily, informally reviewed by the Programme Management. This 'Forced Back to Process' approach was proved to be superior to the Project & Programme Management's review of substantial risk lists, and the too often incomplete nature of response actions. The 'Forced Back to Process' approach was reinforced by the provision of 'Planning as Learning' scenarios (Schwartz P., 1996, and de Geus A.P., 1999), where the 'artificial experience', obtained by running potential possession-occupancy scenarios, delivered both pre-procession and in-possession process benefits. There was another, unanticipated effect, in that the pre-possession processes became focused on the successful delivery of deliverable, namely the renewed track, rather than on the performance of the business' project activity. It is difficult to define this change clearly, but it was likened to a HAZOP (safety) review that leads to an inherently safer operating plant, rather than just a more voluminous safety protocol.

The Creation of the 'Circle of Risk':

The author invites you now to take a step back of about a decade and a half, to a meeting between Health, Safety & Environmental risk experts and Project & Programme risk experts. There was, it is sad to report, virtually no effective communication between the parties on creating a fuller understanding of risk or its management, for reasons will become readily apparent.

The Health, Safety & Environmental (HS&E) model of risk development, and the responsive development of its management, was described as - from right to left:

Recover - Mitigate - Top Event - Control - Detect - Prevent

Meanwhile, the equivalent Programme & Project Management (P&PM) model was:

(Issue) - Recovery - Top Event - Mitigate - Terminate (Issue)

Even within the P&PM arena there was dissent as to the description of 'Issue'. Some, led by the UK Government's then current support for RISKMAN (Carter B. *et al*, 1994), and as described above in this paper, saw 'Issues' as problems that had to be resolved. If unresolved they became significant sources of risk. Others, supported by the Association of Project Management (APM), saw issues as the problems left by the incomplete recovery from an impacted risk (Bartlett J., 2002). There is no obvious answer to this so the author will park this point till later in the paper.

To attempt to match the disparate HS&E and P&PM models still remained a challenge, upon which considerable research and discussion with HS&E specialists followed. It transpired that there was little in common between the two definitions of 'Top Event' but, with exception of its relationship to a 'Top Event', the description of 'Mitigation' had strong similarities .... maybe 'Mitigation' is central?

Top Event - Mitigate - Top Event
(P&PM)   (HS&E)

This model gave two dissimilar 'Top Events' but maybe....?   Developing the responsive side gave:

(Issue) - Recovery - Top Event - Mitigate - Top Event
(P&PM)   (HS&E)

Other than the 'Issue' problem ...not unreasonable. Developing the pro-active side gave:

(Issue) - Recovery - Top Event - Mitigate - Top Event - Monitor - Detect - Terminate
(P&PM)   (HS&E)   **&   or   Prevent**
Control Decide   (Issue)

However, this needs some further explanation:

- **Monitor & Control:** in projects and programmes there does not exist a series of published compliance requirements against which to justify control actions. Rather the dynamic situation needs to be constantly monitored (e.g. schedule & cost variance), which then feeds management considerations on both control response need and appropriate level;

- **Detect or Decide:** in projects and programmes commercial aspects may force constraints on the actions taken, so just identifying non-prevention is not enough. There may well be many occasions when, for say financial or resource reasons, the decision has to be made not to progress with termination or prevention of cause, so leaving a progression to monitor and control activity that will have to substitute;

- **Terminate, Prevent, (Issue):** in projects and programmes prevention (limiting or cutting the cause to effect link) may be inadequate, and total termination of cause (say by a changed design or project process) is required. And that still leaves the 'Issue' problem!

The string as developed above, while arguably it presents an 'holistic' picture covering risk and risk response development .... is not readily understandable, nor usable, nor memorable! When faced with such a problem the author usually seeks to find a picture or structure that enhances these necessary characteristics.   So ..... allowing the individual elemental steps to float:
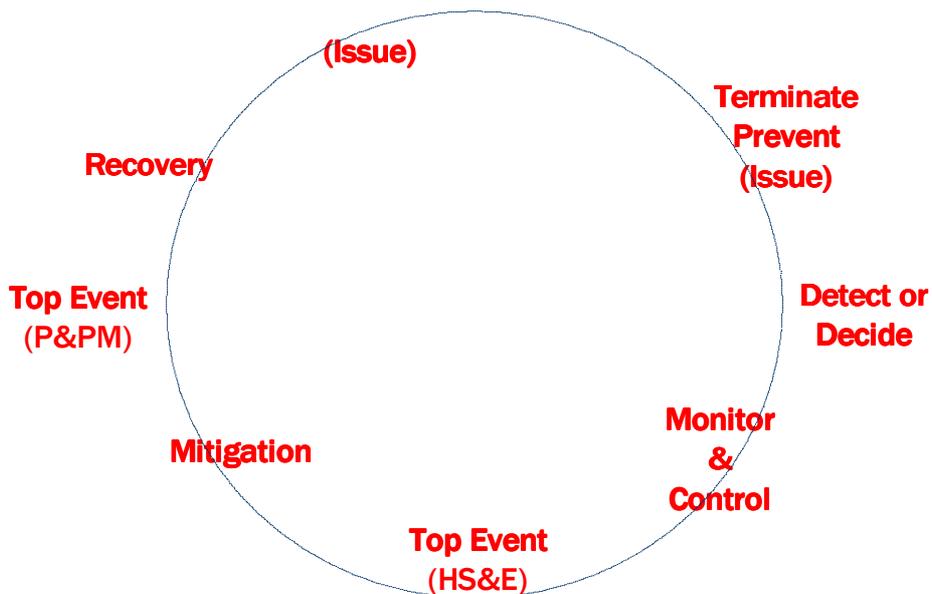

Figure 1.   Starting to form ………… a Circle

There did appear to be a real potential for finding a better-communicating vision in a 'Circle' model (Figure 1.). So tightening the 'Circle' up:
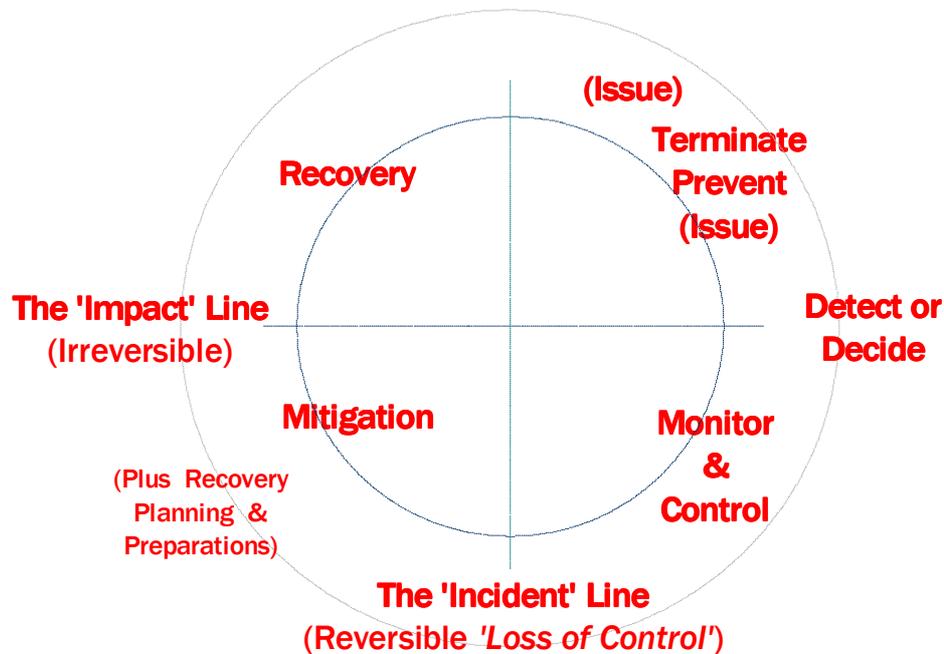

Figure 2.   Closing the 'Circle' down

In focussing onto a 'Circle' model, and closing the elements down into a tighter 'Circle' (Figure 2.), five specific factors started presenting themselves for attention:

- **The Quadrants:** The 'Circle' seemed quite naturally to divide into four function-defined 'quadrants', with three (of the four) dividing radial lines representing clear points or events in the earlier, 'unmemorable' sequence defining an 'holistic' model of risk management;

- **'Issues':** The two concepts of 'What is an 'Issue'?' now fill the same quadrant and are, in fact, one and the same - effectively the concept of 'issue' now locks the 'Circle' together. The difference in the definitions was that one was defined in the natural (clockwise) development-flow of a risk, whilst the other was described in the pro-active (anti-clockwise) manner of seeking risk sources, so as to eliminate them before they gave rise to risks;

- **The 'Incident' Line:** This radial (the HS&E 'Top Event') is best described, using the HS&E term, as the 'Incident Line'. It is reversible and is the point where 'Control' is lost; (for example when aircraft break Air Traffic Control rules and get too close together - often called a 'near miss'. In this situation the planes have to switch to on-board collision avoidance systems - note: the need for a change in system post-incident, as more of the same will not solve the situation. This change in system will seek to regain the required separation and return the planes to normal Air Traffic Control.)

- **The 'Impact' Line:** This radial (the P&PM 'Top Event') is the impact as is currently recognised in Programme & Project Risk Management, it is an absolute occurrence, or

event, that is totally irreversible;

- **'Mitigation':** Mitigation indeed proved to be the common central key, a common function just defined from different points in time by the two disciplines. The 'Incident to Impact' time gap offers a clear opportunity for the input of management effort, which was not effectively used by either risk management discipline, as each discipline only recognised one of the two key time-point events. Further, with respect to Programmes and Projects, there is a need for a self-preparedness to manage the post risk-impact situation (no point in an 'abandon ship' action, if the planning and preparations have not provided lifeboats and crew training .... maybe that is why it is a universal legal obligation for shipping!). A note, as to the requirement for such planning and preparations, has therefore been added to the diagram.
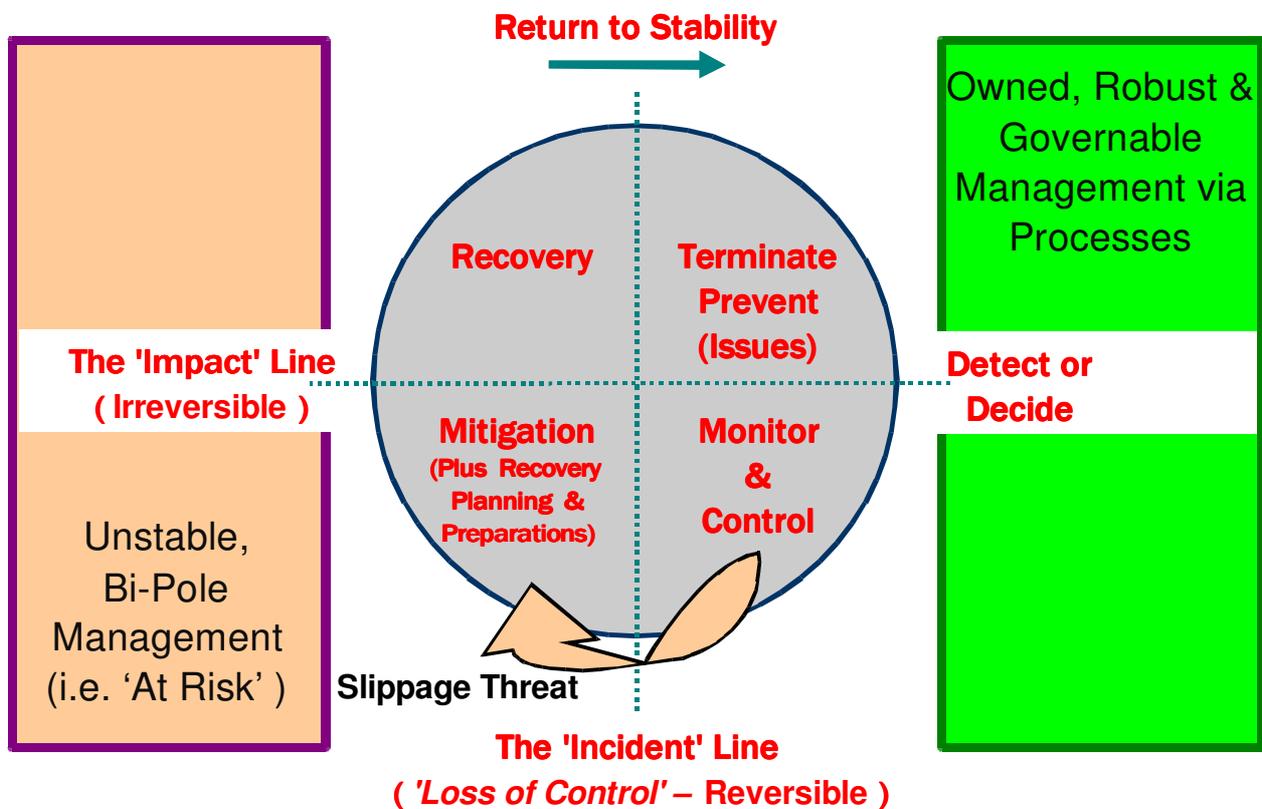

Figure 3.   The Developed 'Circle of Risk'

The completed 'Circle' has been developed further (Figure 3.) from its earlier forms (Ramsay C. & Watson R., 2000 and Watson R. *et al*, 2004). The five points of note in this representation (Figure 3) are:

- **Division of the 'Circle':** The 'Circle' divides naturally into two distinct halves. On the Right-hand Side is common process in a controlled environment. On the Left-hand Side is the 'At-Risk' environment. These two sides and their relationships will be discussed further in the following bullet points;

- **Owned, Robust & Governable Management:** This is the preferable zone of operations that will generate project and corporate earnings in a reliable and consistent manner;

- **Unstable, Bi-Pole Management:** This is the area of risk-taking, whether intentionally to access opportunity or, too often, by unintentional drift for no valid purpose. Note, that to manage risk is a 'Bi-Pole' Management need, as the pre-impact cause and the post-impact effect of risk 'Impact' usually occur in different areas. Current approaches, such as are embedded in risk management software tools, make the Effect Owner the Risk Owner, and require that this person then seeks supportive action from the Cause Owner(s) - a crucial communication need necessary to achieve an effective risk management capability;

- **Slippage Threat:** Risk is continuously seeking the prospect to slide the stable controlled environment into being 'At-Risk'. Being able to identify passing the 'Incident' point is crucial, and may well require pre-determined criteria to achieve. It must always be remembered that passing the 'Incident' point is reversible, if the processes applied are suitably changed. Further, the 'Pushing-Back' of 'At-Risk' situations, to the controlled, common process environment, is almost always beneficial to programme and project delivery;

- **Return to Stability:** Post any risk 'Impact', the initial 'Recovery' seeks to stabilise the situation, but there usually still remains action required to fully return this situation to the controlled, common process environment on the Right-hand Side of the 'Circle'.

The 'Circle of Risk' went on to deliver benefits in the form of a much wider understanding of 'Risk' and of 'Risk Management'. Indeed, having been created from the distinctly different understandings of two disparate risk management disciplines, it has proved since to be capable of mapping all tested concepts of risk, and their associated risk management disciplines. It has, thereby, enabled effective communication between risk management disciplines, and the transfer of individual skills, competencies and tools between these disciplines. It has further provided insights into weaknesses within the individual risk management disciplines, and so offers opportunity for their enhancement, and this aspect is certainly true of Programme & Project Risk Management.

The 'Circle' has also presented Business Management with communication challenges with respect to Programmes and Projects. In the top, right-hand quadrant the 'Circle' identifies the need to eradicate ('Terminate') any confusion in the business direction of its programmes and projects. This means for example clear objectives. Phrasing like 'We want a better Conference' is inadequate, as objectives must be measurable, for example attendee numbers and delegates' satisfaction scores in the leaving survey. The 'iron-triangle' items of Time, Cost & Quality are not objectives ... they are constraints. Even as constraints, this set is inadequate to direct a programme or project, and other, more communicative approaches are necessary, such as prioritisation, common value assessment, and constraint stacking. The real challenge comes to the management of risk. Too often Senior Business Management and Corporate Boards spend time reviewing the 'Top Risks' on individual programmes and projects. And yet, these usually high probability, high impact risks, are well funded in the provisions against the programme or project, and especially so if the earlier advice to treat them as 'Issues' has been taken, where the problems can be subjected to what is often a more effective and cost-controlled form of management.

What Senior Business Management and Corporate Boards should be monitoring is that the programme or project is operating within the accepted variance parameters that were established at its outset and if not, then there is a wider cause for concern than just the identified 'Top Risks'. And the risks that should worry the Senior Business Management and Corporate Boards? .... Well these should be those risks that are effectively underwritten by the Business itself (not by the programme or project). These usually are any arising high-impact risks, and the low (note low!) probability, high impact risks (scored 3 or 'Amber'?) for which there is totally inadequate or no provision in the programme or project budgets. If these risk impacts occur the direct cost will need to be funded by the Business or, if met from programme and project funds, they will require the Business to re-capitalise the risk provisions within the programme or project funding arrangements.

Integrating the Learning:

The 'Pushing-Back' of identified risk causes, in the Track Renewal Programme, to a management environment that used routine, owned and governable pre-possession processes is fully justified by the 'Circle of Risk' model, and together this learning justifies the transference of these ideas to other programmes and projects. The 'Circle' provides a picture on which to hang this knowledge, and a simple tool to communicate its application. How this was applied is shown in Figure 4:
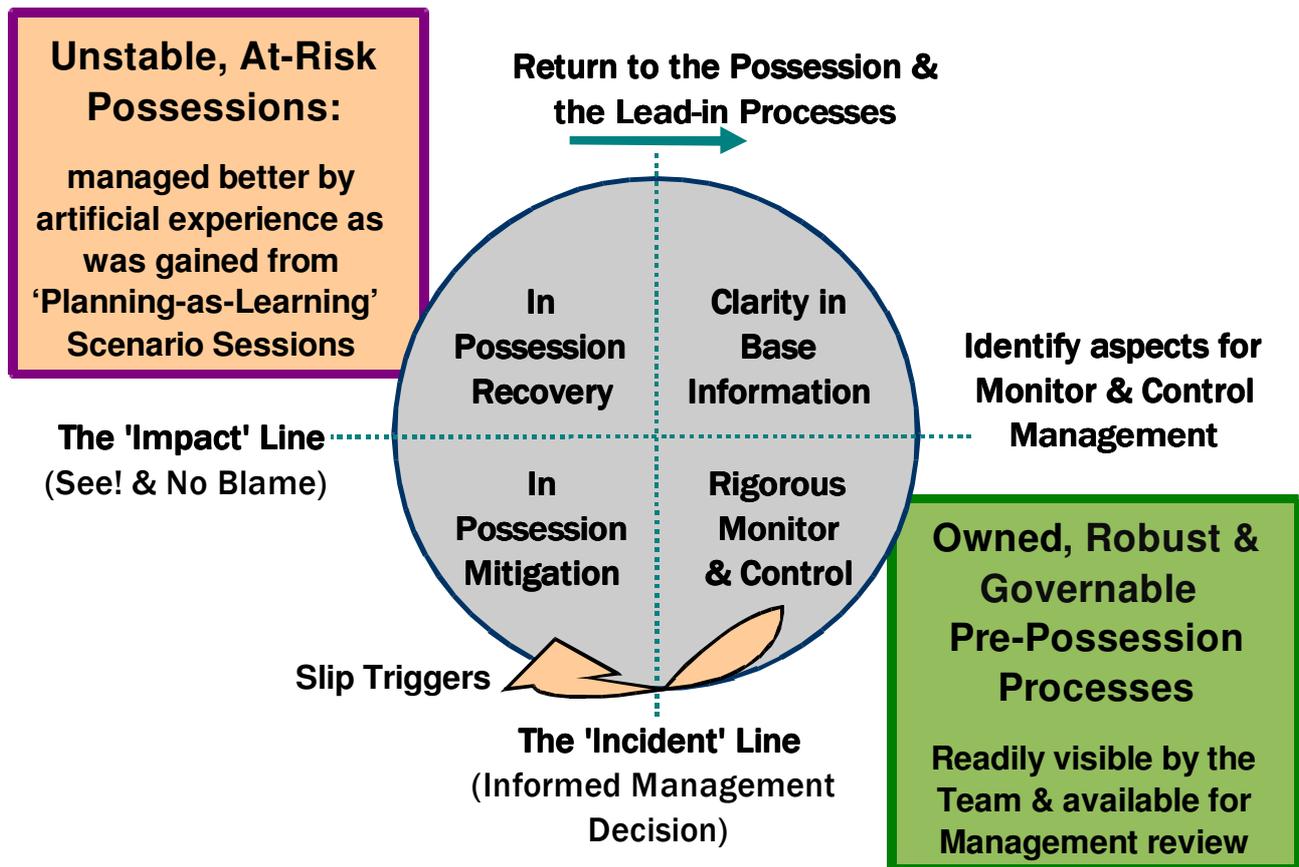

Figure 4.   'Circle of Risk' applied to the Rail Renewal Programme

The 'Issues' (top right-hand side quadrant of the 'Circle'), as raised by the cause analysis of the 'risks' or by the 'Three Tests for Issue', were either clarified and so resolved, or were identified as an aspect to be subject to rigorous 'Monitor & Control' by the pre-possession processes, as previously described. This activity managed out risk in the pre-possession periods, and included a 'possession abort' process, as while it is expensive to abort a possession once the related pre-possession processes have started, it is potentially far more expensive to get into a possession (i.e. enter onto the track), and run into trouble.

It was accepted that all risks within any individual possession could not be removed, but it was with awareness, and informed and justified decision that management took risks within the possession (i.e. on track) environment. Because the Registers were not littered with generalised risks, the remaining entries were very visible to the Programme and Possession Managers. An example of this was the first possession in a deep cutting that ran between high, very old, brick retaining walls. Concern had been raised by certain unusual conditions, so it was mutually agreed that the

possession should start slowly and, if necessary, renew a shorter than planned length of track. On commencing to remove the rail ballast (stone) from a very short length, one of the walls started to show signs of distress and movement. The ballast was rapidly replaced and the track renewal for that possession abandoned. The area possessions on following weekends were handed over to the Civil Engineering Team, for them to solve the structural problems that were now obviously associated with these retaining walls.

In a more general perspective, the use of scenarios in group activity, to plan and learn, helped greatly in preparing the possession managers for what could go wrong, and placed them in a stronger position to dynamically manage the situation. This 'artificial experience' generation included the within-possession identification of possible risks and their mitigation, and also the recovery from impacted risks should they occur. A very important aspect was the 'See! and No Blame' approach. The sooner a Possession Manager is aware of a problem the more effective and timely is its resolution. All parties were therefore required to report situations as soon as they realised them. This was supported by the valuable practice of 'No Blame' (Hunter P.A., 2004), even if the reporting person had caused the situation.

Finally, each possession was a source of learning for the improvement of the pre-possession and in-possession processes, and this learning was duly noted and applied.

It is to be noted, the three key communication tools that were applied on this Track Renewal Programme were:

- **Pushing Risk Cause Back to Process:** as has been described in the main body of this paper. A subsidiary effect was that people could readily see how they were contributing to the successful delivery of the Programme and its outputs, and not just to the mechanics of project operations - it gave a feeling to the individual of being '*In Control*', both of their own performance and of their working environment. This feeling of 'engagement' enhanced the commitment and performance of the individual, as has been previously noted on other projects (Hunter P.A., 2004). Concurrently, this reduced the level of risk by more ready communication within the team, and by better observation and risk reaction in the course of normal working;

- **Adding in the 'Benefit Delivery' Dimension:** A process was devised to bring the business strategy down to Team level, and for the Team to define what this meant to their activities. The adding of the 'Benefit Delivery' dimension made this activity more understandable, and again enhanced individual Team member's 'engagement' ..... and enhancing also the noted positive Programme delivery benefits from such 'engagement';

- **Flexibility Comparison Analysis:** This technique was developed to assess the comparative freedoms in the various sub-contracts, and to examine their comparative viability and justification. Its output was simple and diagrammatic, enabling easy communication of the ideas and supporting information.

Summary:

This paper has illustrated an important element, namely communication, of the wider view that TMC takes about Risk Management in Portfolios, Programmes, Projects & Contracts, and their relationship to the parent Business. It is an approach that TMC refers to as '***Goal-Achieving Risk Management'.***

The 'Pushing-Back to Process' of risk causes and identified issues helps to create and maintain stability, that in turn aids production and hence programme and project productivity. It also

delivered benefits to the involved individual and their commitment to Programme delivery. It further enabled clearer vision for the remaining instabilities....... and an active awareness of these remaining instabilities was provided and communicated on.

Finally, as has been noted in this paper, there is a communication necessity to understand the needs of the use of the Programme deliverable. This generates a demand not only to consider the risk reduction effects in the execution of a programme or project, but also to consider the minimisation of risk associated with the use of the capability that the programme and project activity is creating.

'*Goal Achieving Risk Management'* has been summarised as:

> '*Securing to value-advantage the stabilities in an unstable world, whilst respecting the remaining instabilities, & the influences they could have on value creation & exploitation.'*

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