

Risk Management: A New Project Management Perspective

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Abstract

Risk management in Botswana has been very ineffective in assisting projects to finish on time, on budget, and to meet client's/buyer's expectations. Traditional risk management attempts to use preplanning to identify risks and implement risk management/monitoring to minimize the risks. However, it seems risk management in Botswana has not been implemented properly or not successful. The project performance in Botswana has a poor record. The researchers are attempting to identify if the traditional project manager's risk management model is too difficult to implement. In analyzing the problem in Botswana, the researchers have discovered a new project management risk model, with an entirely different approach to risk. The new model is an outgrowth of the highly successful Performance Information Procurement System (PIPS) and the Information Measurement Theory (IMT)/Kashiwagi Solution Model (KSM) concepts. The authors propose that the new model is easier to understand and implement. The approach has been presented to the Botswana industry and has received preliminary approval. The model will be tested and the results will be discussed in a follow-up paper.

Keywords

Risk management, Leadership based project management, Botswana project management

1. Introduction

Risk management is a key task for project management. The existence of risk is reflected in fundamental law of project of management. However too often risk is either ignored or dealt with in an arbitrary way. Risk management in Botswana has been very ineffective at assisting projects to be on time, on budget, and meeting client's/buyer's expectations (Ssegawa and Ngowi, 2007).

Project management suggests that the ultimate burden of responsibility of managing and minimizing risk lies with the client or client's Project Manager. Risk is defined in project management as something that happens that is unexpected in a project. Risk is caused by vendors not identifying unforeseen or unpredictable conditions. Risk management (RM) or minimization is a huge responsibility of project managers (PM) representing the buyer. Risk can increase the cost and time to deliver services to meet an

expectation of a buyer, and can actually include the buyer not having their expectations met. Risk is a negative term that speaks poorly of a project manager's capability.

The current method of risk management (RM) by the client's project manager (PM) is to:

1. Ensure that the buyer knows exactly "what" they want, ensure that the buyer has the technical expertise (or hires a professional) to direct a vendor on what to do.
2. Use a well written contract to ensure that the vendor meets the expectations of the buyer for the budgeted amount in the time required.
3. Maximize the flow of information and interface between the project manager, users and the vendors. This includes ensuring that the owner verifies the costs in detail of the competing vendors.
4. The client's representatives manage, direct, control, and ensure that the selected vendor is delivering the services required in the contract.

To achieve the above the buyer's PM is required to:

1. To be able to appraise the impact of the service in terms of expectation, monitor the service, and evaluate the performance and value of the service.
2. Know more than the vendor in terms of technical quality, details, delivery, and cost.
3. Write a specification/contract that identifies the buyer's expectations in terms of technical requirements.
4. Be able to inspect/regulate the vendor to meet contract requirements.
5. To ensure they have a complete cost breakdown of the vendor.
6. To ensure that they know what is happening at all times through constant measurement and information.
7. To be able to manage and minimize the risk of change orders.
8. To ensure that the buyer gets the services it needs for the best price.

The client's representatives (project manager, quantity surveyor, and procurement agent) are the risk managers of the construction project. They identify the requirements and perform quality control. There is no transfer of risk and control to the vendor.

2. Existing Risk Management Model

The existing risk management model is shown in Figure 1. The buyer's PM identifies a budget, an expected service, and a time period of delivery. The PMs do not usually know enough to identify if their budget and time to deliver is accurate unless they are actually doing the work and have technical expertise that is current, have dominant measurements of past similar projects, and a knowledge of the current industry supplier costs and capability. Rarely does the buyer's PM have this accurate information (the initial conditions of the project). Instead, they make decisions based on incomplete information. They then hire a technical expert professional who makes more decisions on how the expectation can be met by a vendor, and write an imperfect specification which is required to communicate this expectation. They then compete vendors, assuming that all the vendors and personnel are the same, and usually select the lowest priced vendor. The PM then attempts to manage and control the risk by controlling the vendor. The problem with this risk management model is that decision making by the client or client's PM, and user of the requirements is usually an incomplete and inaccurate perception of the initial conditions (reality).

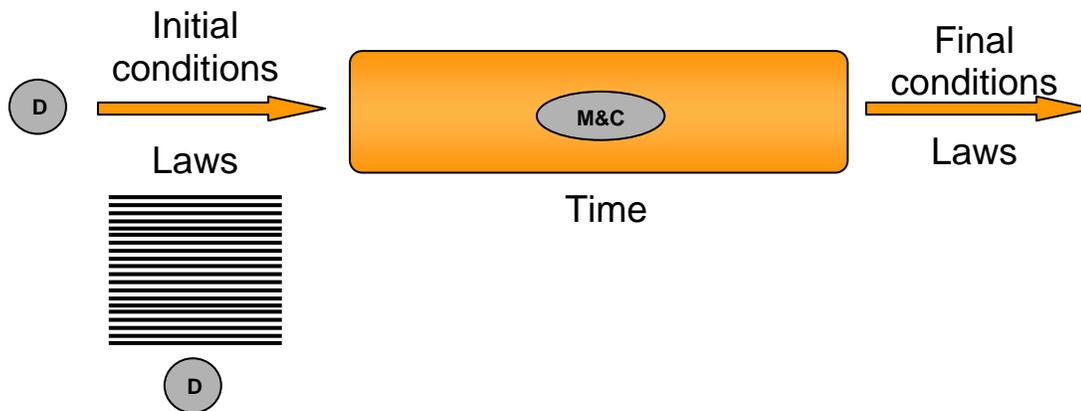


Figure 1: Existing Risk Management Model
(D = Decision Making; M&C = Management and Control)

This method of project delivery and risk management has the following fallacies (Deming, 1985, Kashiwagi, 2008):

1. It proposes that a PM or consultant can know more about delivering a service than the expert vendors who deliver the service.
2. A buyer can use a contract to force expected performance from the lowest bidding vendor.
3. A PM representing the client can understand all the information that the vendor is using and can control and direct the vendor.
4. One individual can direct and control another individual to ensure an expectation.
5. Another individual can read a complex, detailed, technically oriented document that is rarely perfect and flawless, and perfectly understand what the writer's expectation, and deliver it in the exact manner, time and cost that the writer envisioned.
6. The buyer can take the low priced alternative and then influence or control the vendor to meet the expectations of the buyer.
7. The capability of all vendors and their key personnel are the same.
8. Management, direction, and control is an efficient and effective method of delivery of a technically based service.

This is a high risk, risk management model that goes against all the deductive logic of IMT and common sense (Kashiwagi, 2008):

1. Buyer's PM makes decisions on what can be provided without knowing if it is possible or being able to provide the services themselves.
2. Increases management activity (direction, control, and inspection, all transaction costs) and expects higher value.
3. Assumes it is possible for one party to control or influence another party.
4. Assumes that a buyer's project manager knows more than the expert vendor. Or the alternative, hiring a nonperforming, inexperienced, and none expert vendor, and assuming that they can be managed to perform on time, on budget, and meet the expectations of the client.
5. Assumes that risk is caused by the expert vendor. Or assumes that by hiring an inexperienced vendor, then managing and directing, risk will be minimized.
6. Assumes that an expert is being hired, but needs to be managed and directed by a project manager who acts as if they are the real expert.

Whatever combination of factors, this risk model does not meet the test of logic and common sense and goes against dominant facts of reality (Kashiwagi 2008).

3. Source of Risk

What is the source of risk and how should it be minimized? Using the event model, risk is defined by the authors as when someone perceives that reality does not match expectations. Expectations are created with incomplete information. Client's PM makes decisions that set the expectations or final conditions. Unless the client's PM is the expert with all or the majority of information, their decision making creates expectations which do not match reality in terms of time, cost, and expectations. They are actually creating risk at the very beginning of the project. The risk is latent, and will not come out until the vendor delivering the service cannot match the expectation. The differential is risk (or unexpected difference from expectations). Because the current risk management model is one of management and control by the client's PM, and price based (lowest price and following directions from a non-expert), it is a matter of time before the latent risk becomes active. Once the risk is perceived, it is to no one's best interest to take responsibility, minimize, and be accountable for the risk.

Simply put, risk is caused by decision making that result in expectations. Unless the client's PM can accurately identify the initial conditions (vendor's capability to deliver an expected service), and therefore predict the future outcome, the PM's decision making is creating risk (expecting a different outcome than what the initial conditions will result in). The risk is not yet perceived, however, it will be a matter of time before it will be identified. Decision making at the beginning of the event is causing risk. It concludes that risk is caused by the client or it's PM.

4. Decision Making

When do people make decisions? They make more decisions when they lack information. Having the proper information allows prediction of future outcomes. Thus, 'more' information is better than some information (Kashiwagi, 2008). If enough dominant information of the initial conditions, which will predict the outcome without decision making, is understood, risk is minimized. It is easy to identify when decisions are being made:

1. The situation seems complex.
2. Experts come in to make decisions.
3. People disagree on the perception of the initial conditions.
4. The decision makers lack critical information to identify or predict the future outcome.
5. The decision makers do not have liability and accountability for what happens.
6. Decision makers are usually management personnel, and not the people who will provide the service.

Instead of being a risk minimization or risk management model, this is a risk making model. As time moves on, with more decisions being made by management personnel, the risk (not being on time, on budget, and meeting expectations) only increases. A new risk management model is required.

5. Hypothesis

The current risk model has a reactive structure and makes risk minimization very difficult (Ali 2005, Maddox 2006, Ward 2007). Decision making by clients in the beginning stages of a project is actually creating risk that must be minimized during the project implementation (Suttell 2004, Jones 2003, Guetzko 2004). A new risk model which is more proactive must be created. If the risk model structure is proactive, the risk can be more effectively minimized.

6. New Risk Management Model

The new risk management model will have to meet the following conditions:

1. Decision making should be minimized.
2. If expectations are caused by decision making due to the lack of information, the expectations must be corrected by experts who provide the service, who can define the difference between the expectation and reality, and who can take accountability to deliver the reality based outcome.
3. The expert must be given control and responsibility to manage and control the risk that they do not control. If any other participant tries to change the initial conditions requirement or preplan to deliver the service, the vendor must have control to identify the risk, document the risk, and to minimize the impact of the risk.
4. The risk management model must force all participants to understand the initial conditions, and be accountable to do what is agreed upon in the initial conditions.

Therefore, the new risk management model is where the expert vendor minimizes the risk with their expertise using a quality control/risk management model, and the client's PM minimizes risk by:

1. Assuming that the client's perception on the requirement and constraints is not totally accurate.
2. Assuming that there are expert vendors who because of their expertise have a more accurate perception of the requirement and constraints.
3. Using a delivery structure that forces all competing vendors to justify their expertise, identify the risk they do not control which includes false expectations and client based constraints, and who can predict the future with a baseline plan that they can be accountable to.
4. Select the best value that minimizes the risk by identifying the most accurate assessment of initial conditions and the future outcome.
5. Allow the expert vendor to preplan, identify the risks, and manage and minimize the risk that they do not control.
6. Document the deviations from their baseline plan, identifying and justifying the deviations.
7. The vendor's more accurate perception of the project, replaces the client's best guess requirement.

This new model will allow the following issues to be resolved:

1. Client PMs do not have to be experts on what they are delivering.
2. Budget and scope requirements do not have to be perfect.
3. Impact of decisions is minimized.
4. If decisions are made, they are made by the experts, minimizing risk.
5. Control and risk can be transferred to the vendor.
6. Quality control can be performed by the vendor who is documenting, measuring, and minimizing deviation instead of "someone's perception."
7. Vendors are accountable because the proposal is their vision.
8. PMs can do quality assurance (ensuring that best value selection is done, ensure that vendor has system to manage and minimize risk.
9. Forces vendors to have technical, preplanning, and risk management skills.

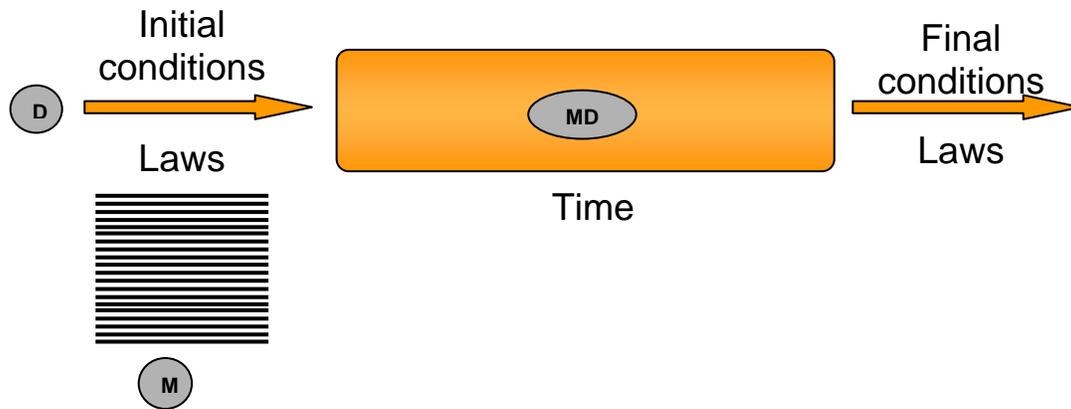


Figure 2: New Risk Management Model
 (D=Decision Making; M = Measurement; MD = Measurement of Deviation)

7. Paradigm Shift

More than a legal, procurement or project management model, the new risk management model is a change of paradigm. It is a movement by the PM from being the expert, to knowing what an expert is. It is moving from a technical approach by the PM, to a logical, common sense, holistic approach. It is moving from trusting the decision making of a PM to a structure that forces the vendors to look ahead, to measure their performance, to set a baseline project scope and schedule, and measure deviation from the baseline plan. It is a movement from quality control, to quality assurance for the client's PM. It is movement from management and control to enabling, best value practices, and leadership.

It is a movement from being the center of the universe, the ultimate knowledge center, to a position of knowing "that we don't know." It is seeking experts and make them accountable (those who know they know), instead of using the PM's expertise.

Instead of decision making with uncontrolled risk and no accountability throughout the delivery of vendor services, it allows the vendors to take the client's expectations, and more accurately describe their capability to meet the expectations. The vendors support their "vision" with past performance measurements, ability to quickly separate the risk that they don't control and identify measurements of deviation, and by providing key individuals who can prove their ability to accurately assess a project, preplan to minimize risk, take control of a project, be accountable, and act in the best interest of the client. These capabilities will be measured by the PM and selection committee, and will result in the selection of the best value vendor.

The buyer should identify what they think they want (expectation). The buyer should identify the best value vendor by using the following simple and common sense inquiries:

1. How they know they can perform?
2. What do they see?
3. Can they quickly set up a milestone schedule, write their own scope of services, identify the risk and have a preplan to minimize the risk?
4. Are their key individuals visionary (be able to identify what is going to happen before it happens, manage and control all the risk, are they accountable, can they document the deviation from their original scope)?

The new client's PM responsibilities will be to:

1. Identify the client/buyer's expectations.
2. Communicate the expectations to vendors.
3. Minimize decision making.
4. Identify the best value.
5. Ensure that the best value vendor sets up their scope, has quality control system in place, and documents and measures performance throughout the delivery of services.

The new RM model is currently being tested in Botswana, Africa to measure the impact on the Botswana construction industry performance. The model is being tested on:

1. Delivery of design services.
2. Delivery of contractor services.
3. The impact on procurement between design and construction, the impact on the relationship between the designer and the contractor.

8. Conclusion and Recommendations

The new risk management philosophy identifies the buyer and the buyer's PM as the main source of risk to any project or delivery of services. It identifies decision making by the PM due to the lack of total information that creates a false expectation. The difference between reality and expectation is risk. The risk is therefore generated by the client/buyer, and not the vendors. Hiring a vendor who is technically not qualified maximizes the problem. Further risk is generated by the client's PM attempting to manage and control the vendor, increasing the flow of information and decision making, and becoming more and more important as the confusion grows.

The new risk management model states that the risk created by the client's decision makers is quickly replaced by the best value vendor, who will identify their perception of the requirement and expectation, clearly identify the risk that they cannot control, and implements a quality control/risk management system that minimizes risk.

Risk and control is transferred to the vendor, they are held accountable to manage, minimize, and document risk to their proposal throughout the project. The new risk management model can also be defined by the following terms:

1. Outsourcing, the expertise of the vendor.
2. Empowering.
3. Best value.
4. Allowing experts to minimize risk through use of their expertise.
5. Preplanning.
6. Alignment of resources.
7. Minimization of management, control, direction, decision making, and risk.
8. Documentation of risk and risk mitigation (weekly risk reports).
9. Quality control and quality assurance.
10. Measured environment.

The new risk management model transfers the minimization of risk to a structure (PIPS/PIRMS) and technical experts/vendors. The new RM model use logic, simplicity, and finding experts who know why they are experts, and who can predict the future outcome and dominant performance measurements. It

minimizes the activity of PMs, and allows them to be visionary and proactive instead of being reactive and continually putting out fires.

The new risk management model is currently being tested in the delivery of design and construction in Gaborone, Botswana. A follow-on publication will review the results of the test.

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