

New Contract Model for Project Management

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Abstract

A new contract model has been developed which changes a project manager's (PM) responsibilities from writing and enforcing a contract, to transferring the responsibility of writing and administering the contract to the vendor. The new environment changes the PM's role from management, direction, and control, to quality assurance. Quality assurance is ensuring the vendor has a quality control and risk management plan. The new model is based on the assumption that the client cannot control the vendor through the contract. The control mechanism is deleted, and the vendor creates a contract document that minimizes risk. The contractual document, which must be approved by the client's PM and legal, includes a risk managing mechanism called the risk management plan (RMP) and a weekly risk report (WRR.) The new contractual mechanism is the expert contractor's mechanism to document and minimize risk and transactions.

Keywords

New Contract Model, Managing Risk, Transfer of Risk and Accountability

1. Introduction

The delivery of construction and IT services has traditionally been done through specifications written by professionals who represent the client. The performance of these services has not been stellar. Performance in construction is estimated at 70% (no cost or time deviation by the vendor, and meeting the expectations of the client) (Post (1998)). The performance in the IT industry is even lower at 30% (Vital Smarts (2006)). The poor performance is difficult to solve in the relationship and politically oriented environment of the price based sector represented in the construction industry structure (CIS) in Figure 1. The authors are proposing that the performance is low in the price based environment because the environment is built upon inefficient and inaccurate practices of control that result in vendors/people not being accountable, reactive, and basing their value on relationships. The following actions are driving down the performance of vendors:

1. An expert vendor is being directed by a person with less expertise.
2. Vendors are directed to submit the lowest possible price (Figure 2.)
3. By communicating the requirement in terms of minimums in a price based environment, clients direct the vendors to transform the minimum into a maximum, creating an adversarial win-lose environment (Figure 3.)
4. The solution of clients to the vendor non-performance is to increase direction and control.



Fig 1: Construction Industry Structure (Kashiwagi, 2010)

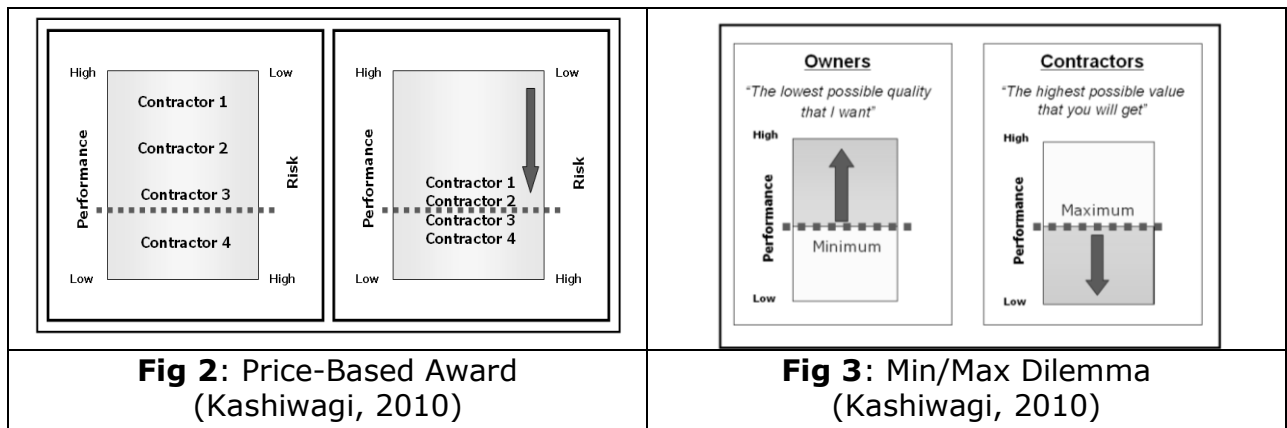


Fig 2: Price-Based Award (Kashiwagi, 2010)

Fig 3: Min/Max Dilemma (Kashiwagi, 2010)

2. Hypothesis

The authors are proposing that one party cannot control another party. The authors are also proposing that if any control mechanisms are being used by a buyer and their project manager to manage and minimize risk, the performance will be minimal, the vendor will be reactive, and the project manager may be forced to increase their management, direction, and control functions.

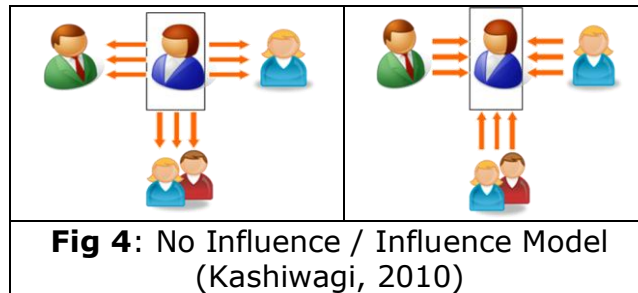
3. Control and Influence

Control and influence are functions of today's project manager. Project managers minimize risk by management and control of vendors. Management and control have been used by parties to influence the outcome and behavior of vendor services. The authors will use deductive logic to propose that control is not as effective as alignment of resources.

Two different deductive models will be used. The first will be the use of an extreme opposites model of an influence model vs. a no influence model (Kashiwagi (2007)). The extremes make the result dominant, simplifying the concept and minimizing decision making. The second model will be a teacher and his four students and their ability to learn the same subject matter. Figure 4 shows the no influence model on the left hand side, and the influence model on the right hand side. The person who uses the extreme influence model believes that:

1. Forces from outside of their control may influence their life. This is by definition of the model in Figure 4, where external forces are impinging on the individual.
2. Things can happen by chance and affect their life even though it has nothing to do with them. These things are unpredictable and not understandable to the person because they come from the external environment.

3. They can be controlled/influenced by other people.



The extreme "no influence" model believes that everything that happens around them has something to do with what they have done. They believe that:

1. They have complete control over their lives.
2. Nothing happens to them by chance. If they use hindsight, they can clearly see why an event happened in their life, what actions they did which caused the event, and understand the relationship of the event to themselves.
3. They cannot be controlled by someone else, neither can they control others.

People with the two extreme approaches to life will have different characteristics. By asking which extreme model the characteristic is more likely to belong to, the relationships between the characteristics can be easily identified.

According to which approach is more likely to have the following characteristics, the "influence" model represents:

1. Believes in chance.
2. Believes in control and influence.
3. Does not understand other people.
4. Believes in win-lose.
5. Will blame others if something goes wrong.
6. Does not continuously improve.
7. Does not pre-plan, or attempt to predict the future outcome.
8. Are ineffective and inefficient.
9. Are reactive and short sighted.
10. Are more illogical.
11. Makes decisions and increases risk.

The "no influence" model is the extreme opposite. It represents accountability, pre-planning, the alignment of resources instead of using control, win-win, continuous measurement and improvement, and minimized decision making.

The second deductive model is a teacher that has a class of four students. If the teacher had influence or control, the teacher could ensure that all the students learned the same exact knowledge. Deductive logic identifies that the person who controls the amount they learn is the student, and not the teacher. A lack of information leads some people to believe that the teacher has influence and control, but they have no validating information. All information tends to support the concept that people have control over their own selves and results. This is the concept of accountability. If this is true, it is impossible for one party to control or influence another.

The following are examples of the attempts of one group to use control and influence to change another party. According to the deductive logic discussed above, the attempt should be ineffective and inefficient (cost is high, transactions and problems will be perceived as stubborn and unsolvable, and results are not as expected or unsatisfactory.) The events of attempted control include:

1. The attempt by a person to change their spouse.

2. The attempt by the United States to change the political environment of Iraq.
3. The attempt by the penal system to reform people who have broken the law.
4. The attempt of the U.S. federal government to stop the use of drugs in the U.S.
5. The attempt of law enforcement to change the behavior of people and stop them from breaking the law.
6. The attempt of companies to enforce standards in their companies.
7. The attempt of companies to use leadership training to influence people.

One of the major reasons for divorce is the incompatibility of spouses. Spouses who believe they can change or influence their spouse are less likely to pay attention to compatibility before marriage. In location where pre-arranged marriages are practiced, and where family status, wealth, and education are considered to minimize risk, the divorce rate is less than 1% (Divorce in India (2008)).

The war in Iraq is a dominant example of someone's belief that they can control another group of people by changing their lifestyle, beliefs, and form of government. What was once the breadbasket of civilization and an example of technology is now a war torn country. The U.S. thought the war against Saddam Hussein's forces was the biggest obstacle in Iraq. They learned that changing the people's culture is much more difficult. The U.S. has attempted this before in Vietnam, Iran, Korea, Bosnia, Haiti, Somalia, Russia, China, and now in Afghanistan. The results have been costly and poor.

The penal system is designed to rehabilitate criminals. The measurements show we have no control over the any of the criminals. Many of them do the same thing in prison that they do out of prison. The return rate for offenders is at 80% (Langan (2002)). The solution to a lack of funding in a down economic cycle is to release them because we cannot afford to incarcerate them and the practice is ineffective. Ironically in the U.S., we incarcerate more people than any other country.

The attempt to control the trafficking and use of illegal drugs in the country is one of the most dominant examples of the lack of control. The U.S. spends \$400B per year on the attempt to control drugs. Over 70% of the funding is used in legal costs of court cases and administration (Jones (1999)). The drug war has increased violence in all countries where the drugs are either grown or trafficked. Because drugs are now controlled substances, the profit for illegal cartels is high and lucrative. Availability of the drugs is everywhere. This is not unlike the period of prohibition, where for 12 years, the federal government tried to control alcohol. After seeing the high cost, the flourishing of illegal mafia groups, and the inability to stop the consumption of alcohol, alcohol was made legal. Today, people drink alcohol as a beverage. The legalizing of drugs in both the Netherlands and Portugal has radically reduced cost, crime and drug problems.

Deductive logic and dominant examples of history identify the control or influence model as ineffective and inefficient. The use of control or influence has not minimized risk.

4. Supply Chain Management and Best Value Procurement

In the delivering of services, there are many attempts to influence and control. One of the major mechanisms of control is the contract. In the previous section,

deductive logic was used to identify that people who know what they are doing minimize risk and not documents such as a contracts. The deductive logic discussed proposes that the entire concept of one party dictating to another party what should be done and attempting to enforce or control the party may be ineffective.

A system has been developed called the Performance Information Procurement System (PIPS.) A derivative of PIPS is called the Performance Information Risk Management System (PIRMS.) PIPS and PIRMS are best value alignment systems that have been tested since 1994. The purpose of this paper is not to discuss the details of PIPS/PIRMS, but to address the practice of direction and control to minimize risk, the use of contracts, and the alignment of resources.

Best value procurement has the following difference with the traditional procurement used by project managers:

1. The project manager (PM) does not have to create a specification which identifies the requirement of the client/buyer which will be delivered by the vendors, but merely identifies the intent of the buyer.
2. The PM uses best value procurement to identify what the vendors can offer which attempts to meet the intent of the buyer.
3. The PM will pick the alternative that best satisfies the intent of the buyer.
4. The PM then ensures that the vendor has a risk management system that delivers what the vendor has promised.

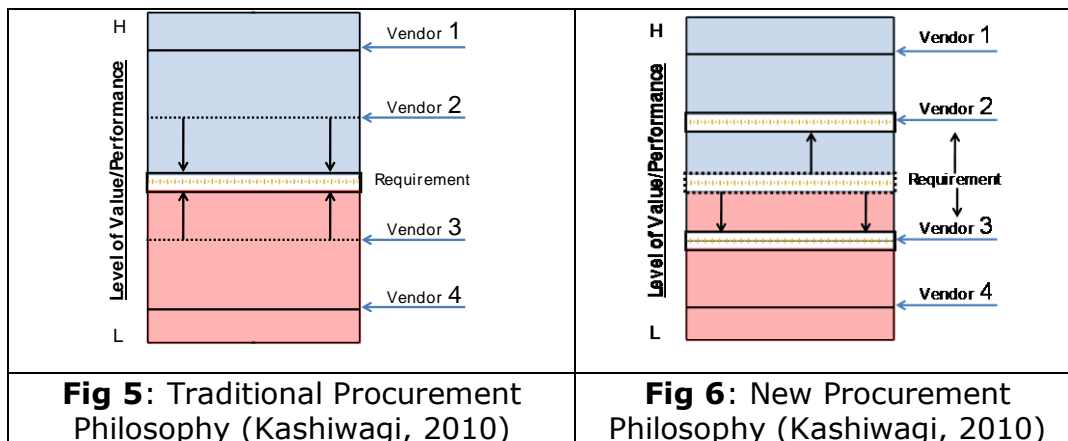
These changes have the following impact on the delivery process:

1. The PM and buyer's team no longer has to be a technical expert.
2. The risk of the service not performing is transferred to the vendor.
3. What is being procured is a service/systems delivered in an environment that the vendor does not control that meets the expectations of the buyer.
4. The transfer of risk and control to the vendor forces the vendor to be an expert.
5. The expertise of the vendor can now be identified in dominant terms: has the vendor accomplished their task before, can the vendor distinguish the risk of the environment which they cannot control, and can they manage and minimize the risk of the unique environment, can the vendor identify what they are delivering in terms of performance, and can they write a simple contract on how they will deliver the service.

The changes in the paradigm force vendors to compete (price and performance) and change the PM responsibilities from technical expertise to quality assurance.

5. New Procurement Paradigm

The new procurement paradigm is shown in Figure 6. The requirement of the client/buyer PM is now to identify the intent of the buyer. The intent could be anything forms a simple requirement statement to a detailed design and specification. Regardless of the detail in the explanation of the intent, the requirement is merely an intent of the buyer.



Every vendor perceives the intent slightly differently, and the proposal of the vendor has an accompanying price and level of performance. No two vendors will deliver exactly the same service/system. In the traditional price based procurement paradigm, the procurement officer representing the buyer will either assume that the vendor's deliverable service is the same as the requirement, or identify a difference in the level of performance and force the vendor to modify their deliverable to match the requirement. From Figure 5, the procurement officer would eliminate the lower two vendors, or force them to modify their deliverable. Or they would identify the higher two vendors as being the same, and award to the lowest price. In the traditional best value process, the buyer's procurement agent would either force vendor #3 to increase their value/performance of their proposal and maintain their low price, or get vendor #2 to lower their price and deliver the higher proposed value/performance of their proposal. This is often known as "best and final" or negotiated price.

In the new procurement paradigm, the application of logical, effective, efficient and dominant practices minimizes risk and accompanying transactions:

1. Minimize risk of non-performance. Risk is minimized when the vendor is an expert and knows exactly what they are going to do, before they deliver. This includes their price, their deliverable, and their schedule.
2. Minimization of direction to the vendor from parties who are not experts.
3. Minimization of the risk of over-expectation, as the vendor dictates the final deliverable service/system and not the client.
4. Minimization of the risk of requiring what may not be available.

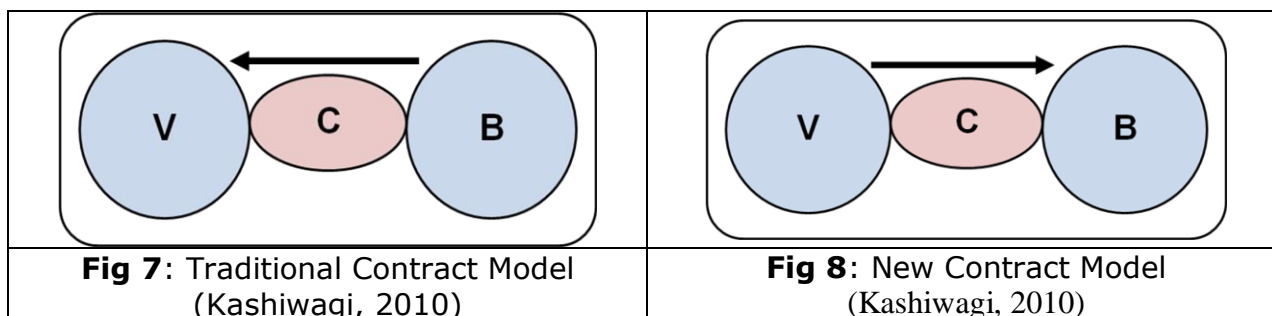
The buyer's PM no longer needs to know what they are procuring when issuing the solicitation or request for proposal. The requirement is now simply the buyer's intent, a budget, and a time frame of delivery. The new procurement paradigm will identify all three previously buyer determined factors: the delivered system/service, the price, and the schedule. The new procurement paradigm has changed the PMs responsibility from management, direction, and control (which requires technical expertise) to quality assurance (identify the best value and ensure that they are practicing quality control and risk management.) The vendor will now improve quality by minimizing time and cost deviation (Deming, 1982.)

6. New Contract Paradigm

The contract paradigm changes from the client/buyer attempting to control the vendor by use of a contract (Figure 7), to the new paradigm of using the contract to manage and minimize risk by the expert (Figure 8.) Using the concepts of

deductive logic that mechanisms of control will only result in increased transactions and inefficiency, the sole purpose of the contract is to manage and minimize risk. The party most effective to manage and minimize risk is the expert vendor. The new contract mechanism forces the vendor to pre-plan, and to manage and minimize risk. They must identify:

1. Performance requirements that must be met.
2. Technical requirements of the project.
3. Legal contract requirements of the client for bonding, insurance, local codes.
4. A mechanism of documentation of risk that clearly identifies deviations (risk) on the project and accountability of the risk in terms of cost and time.



The new contract paradigm involves no control or influence, but the selection of an expert contractor that meets the intent of the client within the constraints of the buyer's environment, time and funding. The new contract paradigm in conjunction with the procurement philosophy creates an environment of transparency that simplifies the management of projects. A part of the transparency is the risk management documentation that the contractor maintains that does the following:

1. Identifies all the risks and concerns of the client, technical experts, and the contractor before delivering and forces a plan to manage and minimize these risks as a part of preplanning and as a major component of the contract.
2. Uses a weekly risk report that identifies any risk that will lead to cost and time deviation, the source of the risk, and how the risk is being minimized.

Both these risk management tools have been developed as a part of PIPS/PIRMS and are known as the risk management plan (RMP) and the weekly risk report (WRR) (Kashiwagi, 2010.) These documents are a major part of the contract written by the vendor. The vendor written contract must be reviewed and approved by the client/buyer's legal and technical staff.

7. Testing of the New Procurement and Contract Paradigm

The new procurement philosophy and contract paradigm has been tested at Arizona State University (ASU) for the past three years on contracts totalling \$1.5B of delivered services (food services, sports marketing, gym equipment, IT networking, IT data center, help desks, document control, and long distance education. The impact on the delivered services includes (PBSRG (2010)):

1. The minimization of vendor created risk. In the four years, there have been no deviations caused by the vendors.
2. The increase of value of the delivered services when compared to the previous services delivered with the traditional processes (\$100M over the next 10 years.)
3. The minimization of management, direction, and control transactions by 80%.

4. The minimization of risk that normally would have to be managed by the client's PM which included the re-establishment of services after a non-vendor related disaster at the university.
5. The measurement of all vendor services by the vendor in comparison with past services and vendor performance requirements using objective measurements.
6. Contract administration by the vendors.

The new procurement philosophy and contract paradigm have been implemented at ASU as the new method to deliver services.

8. Conclusion

The new procurement philosophy and contract model changes the project manager's (PM) role from the technical expert who is managing, directing, and controlling, to a quality assurance coordinator who runs systems that ensure the alignment of the best value vendor with the buyer's intent. The PM now transfers risk, control, and accountability to the best value vendor who is expert at what they do. The best value vendor identifies what they will deliver, how they will deliver it, and administers their own contract using documentation that identifies deviations to their proposal, and how they will manage and minimize the deviations. The new philosophy and procurement will force the transition from the traditional models to the new model due to dominant value/performance differences, the deductive logic behind the new concepts, and the minimization of risk and transactions caused by the traditional management, direction, and control practices. When control and influence based concepts are removed, the cost savings have been dominant. When researching the efficiency and effectiveness of control/influence concepts, the authors were surprised at the cost and results of such practices. The dominant results of previous efforts attempting control give tremendous motivation to change to the new philosophy and paradigm. Project management (PM) will be transformed by the movement of owners/clients/buyers to efficiency and value.

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