Miller Park Stadium Project, Review & Analysis

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This review is an analysis of the project phases presented in the George Washington University Miller Park Stadium Project case study.

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Introduction

This document is a review of the Miller Park Stadium Project Case Study. The objective is to analyze each of the four project phases: inception, development, implementation and closeout (Serich, Bale, Kwasny, Patneaude & Stack, 2006). An overall assessment of project performance will be conducted and used to prepare a numeric evaluation of the management of the project based on the Project Management Knowledge Area as outlined in the PMBOK Guide 3rd edition (Project, 2004).

Project phase analysis will be performed to further evaluate the management strengths and opportunities. All evaluations and analysis will extend upon project management concepts learned in course INMGT 565 Project Management, and in the text book "Project management achieving competitive advantage" (Pinto, 2010). Concepts and lessons learned throughout the course will be applied to the real world Miller Park Stadium project, and the summary analysis will include project management lessons learned.

Inception Phase

Rating Scale: 5-Excellent, 4-Very Good, 3-Good, 2-Poor, 1-Very Poor.

Project Management Area	Inception Phase
Scope Management*: (Processes ensure that the project includes all required work, and only the work required)*	**3**
Time Management: *(Processes required to accomplish timely completion of the project)*	**2**
Cost Management*: (Processes involved in planning, estimating, budgeting, and controlling cost, project completed within budget)*	**2**
Quality Management: *(Processes for all activities that determine quality policies, objectives and responsibilities)*	**4**
Human Resources Management: *(Processes that organize and management the project team)*	**4**
Communication Management: *(Processes to ensure timely, and appropriate generation, collection, distribution, storage, retrieval, and disposition of project information)*	**2**
Risk Management: *(Processes needed to conduct risk management planning, identification, analysis, responses, monitoring and control)*	**3**
Procurement Management: *(Processes to purchase or acquire the products, services, or resulted needed from outside the project team)*	**3**
Integration Management*: (Processes and activities needed to identify, define, combine, unify and coordinate activities and processes within the Project Management Areas)*	**2**

Major Areas of Strengths:

Quality Management and Human Resource Management were two strong area that the project team showed significant strengths and each was rated *4-Very Good*. Quality planning identified which standards were relevant to the project and how to achieve those standards. The team and sub-contractors implemented quality management plans, standard construction guidelines and Occupational Safety and Health Administration (OSHA) requirements (Serich et al., 2006). One important aspect of quality Management is performing quality control. To efficiently perform quality control the project team needs to monitor specific project results to determine if standards and goals are being met (Project, 2004). Quality control measures were used to report the projects progress and mitigate quality insufficiencies. The team showed a commitment throughout the project to deliver a quality stadium to the Brewers, City of Milwaukee and other stakeholders.

The human resources aspect of the project was challenging. The project team consisted of three construction firms' with multiple sub-contractors, 180 of which met

racial, gender and economic diversity standards (Serich et al., 2006). One firm acted as project manager, which had potential to create animosity, competition and bias among the team yet the team worked well together. The project required a significant amount of laborious and dangerous task with over 5,000 personnel working over 2.4 million work hours and ultimately the project was successfully completed (Serich et al., 2006). In the area of Human Resource Management, the project team was able to quickly and efficiently move through the stages in group development: forming, storming, norming, performing, and adjourning. Due to previous experiences project team members had with working with each other, they were able to bypass early states of team development and move quickly into the "Performing" stage. By not having to go through the early stages of group development the team was able to not have to spend time working on resolving conflicts that form while building inclusion, control, and cooperation among the team. The team was able to maximize productivity by proceeding directly to the performing stage.

In the area of Scope Management, the project proposal and charter had no broad consensus on source of funding, or addressed how stakeholder investor ownership rights would change if funding changed. This was a problem that was later resolved in other phase. Even with the charter error the project team was able to achieve other major accomplishments in the area of Scope management so overall inception phase Scope Management was rated *3-Good,* with the main strengths being in conceptual development in choosing methods and final project objectives that would ultimately achieve the project goals.

The Miller Park Joint venture project team was able to successfully complete the conceptual development of a preliminary scope statement and statement of work in their project proposal. To further define the project scope a memorandum of understanding (MOU) was developed between the three project sponsors to document and represent a legal understanding of: what all parties wanted, when the project would be completed and the estimated cost that all three sponsors were obligated to be responsible for.

The proposal for the new stadium was accepted, funding was secured and construction started. Key elements of a charter were defined such as a time frame for project start November, 9 1996 and completion March, 1 2000 was established. Project stakeholders and ownership was defined as being between the Southeast Wisconsin Professional Baseball Park District, Milwaukee Brewers, and Miller Brewing Company.

The project team's ability to define work breakdown structures and work packages consisting of the activities needed to implement a project plan was also a major strength. Final project objectives were developed stating the business reasons and benefits for undertaking the project. Benefits were defined as improved sales and the community benefits for the city of Milwaukee to having a professional baseball team. Project plan discussions between the project team began 1 year prior to funding approval and how the team would be managed and work breakdown schedules were completed early in the project cycle.

In the area of Procurement Management the project team did not seem to have a large quantity of major issue in acquiring the product, services or resources needed in executing 447 prime contracts that were executed over the course of the project. No evidence was presents that would indicate that the team was not efficient at plan purchase acquisitions, plan contracting, request seller responses, select seller, contract administration and contract closures. The MOU was incomplete and had no contractual language to address escalated cost, or arbitration for resolving cost conflicts between stakeholders and contractors. This was a challenge in managing the cost overruns that could have been addressed in contracts but overall Procurement Management was rated *3-good*.

Risk Management was another area were the project team had some success and was also rated *3-Good*. The project team was able to clearly define the risk of doing nothing and not building the stadium. Risk associated with the age of the current stadium were identified and mitigated by deciding to go forward with the project. Market research was conducted that indicated that the city wanted to keep professional baseball and there was financial incentive to do so, local business also wanted to keep the team to attract employee talent and new customers, government officials expressed concern that if a new stadium was not built to keep the team the surrounding community would deteriorate. To avoid and mitigate the risk of doing nothing the project team successfully concluded that the new stadium long-term benefits would outweigh the initial cost and risk of implementation.

Major Opportunities for Improvements:

Project scheduling techniques are fundamental to project planning and subsequent project monitoring and control (Pinto, 2010). In the areas of Time and Cost Management the HCH Miller Park Joint venture was able to define and document the key components needed for the contractual planning phase and estimate the project schedule and cost, but the project took a year longer to complete than original planned. The Big Blue crane accident and the expanded scope of the retractable roof may have played a role in creating time management issues but both issues most likely could have been avoided with better project management execution. If the retractable roof had been included in the original project scope statement, it could have been included in the project scheduling process and identified as a critical path activity. If the team would have accounted for bad weather days in their Time Management process, there may have not been any motivation to run the crane in inclement weather. The project team missed opportunities to develop and implement lag relationships in their scheduling to account for the start and finish of project activities. By being over budget, they probably had eliminated the option to crash project activities by adding resources to shorten time frames to complete task sooner. Time Management areas of opportunity include activity duration estimating, schedule development and schedule control. These failures in time management are the reasons I rated the project team Time Management abilities as a *2-Poor*.

Cost Management opportunities were also prevalent in the inception phase. Estimating cost can be difficult in large projects and the project team had major failures in this area, resulting in a score of *2-Poor*. The project team did not properly estimate the total cost of the project and a Wisconsin Legislative Audit Bureau found that local taxpayers would have to pay $76 million more than originally projected bring the total to $400 million. Cost overruns were not addressed in contracts caused numerous disputes among stakeholders and the project team. The project team failures in their cost estimation efforts also created ownership issues for stakeholders. Feasibility estimates could have been used to base estimates on real numbers after the completion of the project preliminary design or Definitive estimates given only after most of the design work is finished. Both methods tend to yield better results with estimate accuracy in the plus or minus 5 to 10 percent range.

There were a few positive aspects in Communication Management such as the fact that Miller Park Joint Ventures consistently reported the park status and completion of major milestones to the public and the project team used media specialist and lobbyist to communicate to the public. The team budgeted $95,000 for media and lobbyist, which indicates some early commitment and planning to the communication process (Serich et al., 2006). Unfortunately, the Communication Management negatives outweigh the positives. The initial cost estimates were not effectively communicated as estimates, which contributed to the animosity that existed between the taxpayers, stakeholders and the project team. The appeal for public funding was not approved by taxpayers and voted down twice. Local government officials forced the project on taxpayers and the voters later recalled one of the senators who supported the tax hike. The project failed to determine the information and communication needs of the project stakeholders, which was a huge, missed opportunity resulting in as score of *2-Poor*.

One positive aspect of Integration Management was that the discussion between the project team began 1 year prior to funding approval and how the team would be managed and work breakdown schedules were completed that could be used in the project management plan. This shows some ability to identify, define, unify and coordinate some of the processes and project management activities needed for successful integration management within the Project Management areas. In my analysis I was unable to score the team higher that a *2-Poor*, because significant flaws in integration management were apparent throughout the inception phase. Specifically the proposal original proposed as a privately funded project but eventually had to be changed to seek public funding. This was a major flaw in scope, change, and cost management integration that resonated throughout the project. A well-written charter utilizing contracts, Statement of Works (SOW), and change control procedures could have effectively addressed these issues

Development Phase

Rating Scale: 5-Excellent, 4-Very Good, 3-Good, 2-Poor, 1-Very Poor.

Project Management Area	Development Phase
Scope Management*: (Processes ensure that the project includes all required work, and only the work required)*	**2**
Time Management: *(Processes required to accomplish timely completion of the project)*	**2**
Cost Management*: (Processes involved in planning, estimating, budgeting, and controlling cost, project completed within budget)*	**2**
Quality Management: *(Processes for all activities that determine quality policies, objectives and responsibilities)*	**2**
Human Resources Management: *(Processes that organize and management the project team)*	**4**
Communication Management: *(Processes to ensure timely, and appropriate generation, collection, distribution, storage, retrieval, and disposition of project information)*	**4**
Risk Management: *(Processes needed to conduct risk management planning, identification, analysis, responses, monitoring and control)*	**3**
Procurement Management: *(Processes to purchase or acquire the products, services, or resulted needed from outside the project team)*	**3**
Integration Management*: (Processes and activities needed to identify, define, combine, unify and coordinate activities and processes within the Project Management Areas)*	**3**

Major Areas of Strengths:

During the project, development phase Human Resource management was scored as a *4-Very Good*. The project team was successful at building diverse groups of functional experts into highly functional teams. The site safety team consisted of a four-member team with 60 years of construction and safety experience. The team developed an extensive site safety manual that all contractors were required to follow or establish their own approved safety manual. The safety team staff management plan appeared to successfully identify training needs and safety issues critical to the success of the project.

Also, critical to project success in the development phase was the acquiring, building and development of the project team. Three construction companies formed a joint venture to build Miller Park Stadium. They were able to combine their experiences and lessons learned to improve and achieve project development processes, performance goals, and implementation task. Due to the experience of the team members and the prior work history that existed between them there was little need for

major time and effort in the areas of project team development and management task. In building the project team, necessary skill sets were easily identifiable while matching people to skills sets and negotiating functional heads was easily accomplished.

Communication Management was also a strong area during the development phase. One of the most critical ways in which project managers communicate is by conducting effective and productive meetings (Pinto, 2010). During the Miller Park project regular weekly safety meeting were established, with all workers required to attend. This is important to allow opportunities to get worker input on potential safety issues and allow management an opportunity to revise and updates project plans as needed. The weekly "Tool-box" talks showed a commitment to ongoing communication. The weekly talks were initiated by the lead contractors and were utilized to keep all workers and contractors informed of their roles and responsibilities. Continued communication is important in assisting team members in understanding how their individual goals and accomplishments align with the success of overall project goals. Communication Management in the development phase received a score of 4-*Very Good*.

Risk Management was a project strength during the development phase because the project team conducted extensive risk management in the areas of establishment and implementation of safety programs. There were two particular areas of risk management that the project team could have handled with more efficient risk management processes. Contracts could have been used to help mitigate, avoid, or share risk and contingency plans could have been used to address parts failures and procurement risk. No formal contract elements were established to account for project risk that could influence the project end date, and there should have been documented identified risk associated with the failure of roof parts. Also, a contingency plan should have been developed to account for the risk of planned or emergency parts orders missing delivery dates.

The failures in the contract are attributed to Cost and Scope Management and not a direct failure of Risk Management. The project team also conducted tasks were property risk and accident risks were identified, and to mitigate this risk a $35 million property damage insurance policy was purchased. The Milwaukee Brewers also purchased an additional $20 million in insurance to mitigate their risk (Serich et al., 2006). The project team identified risk and had processes for risk mitigation and avoidance.

The Miller Park Stadium Project case study did not speak directly to the existence of risk contingency plans, contingency reserves or task contingencies but with the extensive risk efforts put in to the development phases the assumption is that they did exist for identified safety risk but none existed to offset budget cutbacks, schedule overruns or other unforeseen events. Overall Risk Management rating was a *3-Good*.

The Procurement Management area was similar in project team performance to the Risk Management area in the development phase as it also had pluses and minus and thus received an overall rating of *3-Good*. One major plus was that as additional cost

was identified the project team was able to procure additional funding for project needs. Purchases and acquisitions were made to meet new requirements and no evidence of poor relationship management between buyers and sellers were reported. There were challenges with the eight to ten months lead-time to get roof parts. When a critical part of the roof failed there was no time allotted in the project plan for acquiring replacement parts. This failure could be partially attributed to Risk Management and thus not 100% equated as a major failure of Procurement Management.

In the area of Integration Management, the project team had some success during the development phase in directing and managing project execution. Specifically the project team was very effective at integrating communication and human resources project management processes, throughout the development phase. Communication Management among stakeholders and worker in the development phase presented some tremendous challenges for the project team. There were thousands of stakeholders to communicate with, including government and state officials, Brewers management teams, Miller Brewing company officials, thousands of workers and the media. The project team was able to successfully develop a communication plan that integrated well into the needed human resource processes. The success of workers implementing time schedules and knowing what to do and when to do it is evidence of an effective communication plan in the area of human resources.

Integration between Risk Management processes and Cost and Procurement Management processes were not as efficient as they could have been thus leaving Integration management with an overall rating of *3-Good*.

Major Opportunities for Improvements:

Although in was found in the case study that scope development appeared to proceed without major problems caused by the Big Blue crane accident that pushed the completion date back one year, there were still major opportunities for improvement in Scope management. In the Scope Management area the project team had major failures in identifying constraints, establishing goal criteria, and developing contractual requirements. The project team forgot to measure financial attributes pertaining to project scope and deliverables as it related to the project completion date (Serich et al., 2006). Failure in scope management lead to major problems in cost management and time management resulting in an overall rating of *2-Poor* for project team performance in the Scope Management area. The project team failed to understand constraints in time to complete the project, budget estimates, and client demands. They also failed when developing and documenting cost responsibilities outlined in the MOU which resulted in major negative impacts in Scope Management and other areas of project performance.

As part of work authorization processes in the scope statement the project team should have devote more time and effort in the area of contractual requirements to be included in the Procurement Management area. This could have been accomplished by implementing turn-key or cost-plus contracts to clarify financial responsibilities for schedule delays, cost overruns, and corrections for defects. Scope statement goal criteria

in the areas of cost, schedule, performance and deliverables was not clearly identified to stakeholders in the development or inception phase which caused issues with the stakeholders client demands not being meet.

Time and Cost Management also proved to be very challenging task for the project team during the development phase and each area also score a *2-Poor*. Prior to the crane accident during the implementation phase the project was reported as proceeding on time and on schedule but, no formal contract elements were established to account for project risk that could impact the project end date (Serich et al., 2006). The project team did not specifically identify the roof completion activities as a requirement for a quality deliverables critical path to achieving the completion date. Effective activity sequencing and documenting dependencies could have allotted time in the project or change management plan to account for roof delays.

Although the project team was able to cut cost by pushing the opening date back, not having complete risk contingency plans for time/schedule and cost risk, allowed the project to grow $23 million or 23% in cost (Serich et al., 2006). Cost estimates rose to $322 million before construction began, due to $72 million in site preparation cost not being accounted for in the original cost estimates. Ongoing disagreement remained among stakeholders as to the cost for the project presented in the MOU and the actual cost accrued during the development phase.

As additional costs were identified, the project team was able to procure additional funding but major failures in Cost Management most likely could have been avoided with better project management. Opportunities for improvement existed in the cost estimating, cost budgeting and cost control project management processes. Project funding requirements were not complete, project completion forecasting should have been based on key milestone and deliverable completion dates, and cost dependencies should have been included as part of the cost management plan.

Quality Management in the development phase was also rated a *2-Poor*, primarily because due to roof part procurement delays the project team decided to build the roof with lesser quality parts (Serich et al., 2006). This decision was made to keep the project on time and schedule. There was also no quality control and audit structure established to identify schedule or financial problems that were influencing time and cost (Serich et al., 2006). These mistakes were major opportunities for improvement in Quality Management missed by the project team.

Part of Quality Management is to identify quality standards relevant to the project and it seems that early on the project team set standards for the roof installation and later lowered their standards to meet the project anticipated completion date. With the retractable roof being such an important part of the stadium project, the project team should have required stakeholder approval to lower the roof standards to meet time and cost commitments. There is no evidence presented in the case study that indicate that change in quality standards was included in a performance quality assurance (QA) process that included a change management approval process.

When performing Quality Control (QC) processes the project team should have a quality management plan that includes input from planned deliverables, scope statement, and the project plan (Project, 2004). One of the outputs of a well-designed quality management plan would be to have recommendations on defect repair. QC requires that the project team make every effort to minimize errors that cause defects and it does not seem like the team had an efficient quality management plan.

Implementation Phase

Rating Scale: 5-Excellent, 4-Very Good, 3-Good, 2-Poor, 1-Very Poor.

Project Management Area	Implementation Phase
Scope Management*: (Processes ensure that the project includes all required work, and only the work required)*	**2**
Time Management: *(Processes required to accomplish timely completion of the project)*	**2**
Cost Management*: (Processes involved in planning, estimating, budgeting, and controlling cost, project completed within budget)*	**2**
Quality Management: *(Processes for all activities that determine quality policies, objectives and responsibilities)*	**2**
Human Resources Management: *(Processes that organize and management the project team)*	**3**
Communication Management: *(Processes to ensure timely, and appropriate generation, collection, distribution, storage, retrieval, and disposition of project information)*	**2**
Risk Management: *(Processes needed to conduct risk management planning, identification, analysis, responses, monitoring and control)*	**1**
Procurement Management: *(Processes to purchase or acquire the products, services, or resulted needed from outside the project team)*	**2**
Integration Management*: (Processes and activities needed to identify, define, combine, unify and coordinate activities and processes within the Project Management Areas)*	**2**

Major Areas of Strengths:

There were some frustrations among workers during the Implementation phase over being asked to complete perceived unreasonable and unsafe task that lead to some workers resigning from the project and/or the company they worked for (Serich et al., 2006). This issue can be mostly contributed to Risk Management failures and not a direct result of poor Human Resource Management. Overall, the Human Resource

Management area was scored as *3-Good,* due to the team building successes accomplished in maintaining an experienced, cohesive, skilled and effective team even after the tragic crane accident. The project team had success executing needed human resource processes by updating process outputs in the areas of implementing roles and responsibilities, staff management plans, resource availability, project staff assignments, requested changes, and recommended corrective and preventive actions (Project, 2004).

During the Implementation phase, the project began to show some leadership qualities in motivating and building teams while having a vision for fighting fires. Successful project managers must have the ability to recognize talent and recruit talent while also molding and motivating workers (Pinto, 2010). Experience was evident throughout the roles and responsibilities of the various managers and workers. The Hunt Construction team had 30 years of experience building sport facilities. The operator of the Big Blue crane had 15 years' experience.

When major safety concerns arose after the crane accident the project team implemented corrective and preventive actions by agreeing to bring in outside resources to monitor work performance. The decision was made to change staff management plans and work schedules to keep idle worker caused by the accident onsite and available. They also agreed to give project safety officers more authority as well as giving the insurance company oversight over all future safety issues.

The crane accident was a monumental project event that the project management team had to handle. The team was able to strategically manage the failure and remained focus on the project's "Big Picture" goals. The added emphasis on safety was found to be an effective conflict management tool as it did boost team morale that continued throughout projection completion (Serich et al., 2006). Mandatory weekly "Toolbox Talk" meetings among workers also continued, though this did not prove to be an effective tool for workers to communicate concerns to the management team.

Major Opportunities for Improvements:

The Risk management area during the implementation phase was a major area where an opportunity for improvement existed. One small success was that the project team was able to mitigate some of the weather risk by utilizing a 25,600 square foot dome tent to warm clay needed for installation of the playing field. Unfortunately, the risk management failures consumed any success that may have been achieved in other process areas.

One gross error significantly influenced my analysis and scoring in this area. The George Washington University case study found that the project team utilized risk management practices throughout the project life cycle (Serich et al., 2006). It was also found that the crane operating company, Mitsubishi Heavy Industries used poor risk mitigation planning by operating their crane in severe weather, claiming 3 lives (Serich et al., 2006). The significant loss of life equated to poor risk management is inexcusable. The project team should have been able to use a method of qualitative risk analysis to

define the probability of the risk event of a crane accident in bad weather and the consequences of such an event should had lead the team to a risk avoidance, elimination or mitigation strategy.

Poor weather in the Midwest is a common risk that the project team should have been able to provide a contingency plan for early during the inception phase. Risk impact is highest during the Execution or Implementation phase and it is the project team's responsibility to minimize risk exposure and the potential for negative consequences (Pinto, 2010).

Prior to the crane accident multiple contractors were issues citations and fines for alleged workplace safety violations and several workers were injured in a separate steel girder and aerial basket collision. After this initial accident risk response, planning should have been reviewed and documents updated to address strategies for negative risk and threats. These previous risk events should have caused the project team to enhance risk monitoring and control measures early on in the project. As stated earlier there was speculation that the rush to complete the stadium on time sacrificed safety concerns. Also, the weather caused additional problems when the schedule delay due to the crane accident caused field construction to occur with a project late start date that pushed the work into December (Serich et al., 2006).

Milwaukee winter weather was a project risk consideration but bad weather days could have been built into the project risk task contingency plan to allot for zero or reduced hours during inclement weather as well as allowing for an extended completion date in the project plan. The project team failed in project management knowledge areas of Risk Management Planning, Risk Identification, Qualitative Risk Analysis, Risk Response Planning, and Risk Monitoring and Control (Project, 2004). These processes should have been updated throughout the project and the project team failed to do so in a timely and effective manner. Overall Risk Management was rated *1-Poor*.

In the area of Time Management and Cost Management both were rated as *2-Poor* because the failures in these areas caused major repercussions in other project management areas and task that critically influenced the overall project success. Project Time Management includes the processes to accomplish timely completion of the project and these processes include activity sequencing, activity resource and duration estimating, and schedule development and control (Project, 2004). The major failure in Time Management that the project team had was in completing the stadium retractable roof on time and on schedule. The completion of the roof was a required task predecessor to starting the construction of the playing field. The field construction was initially scheduled to start in September 1996 to October 1996 time frame but it did not actually start until December 1996, due to delays in completing the roof. The crane accident was reported as the major reason that delayed the roof's completion. The delay forced the workers to have to start building the playing field in the harsh Milwaukee winter weather.

The major opportunity for the schedule development process was that the project team could have used the critical path method to calculate late start and finish dates to determine schedule flexibility. What-If Scenario analysis could also have been used to assess the feasibility of the project schedule under adverse conditions. Failures in the roof construction activity duration estimating most likely contributed to the need for the project team to have to rush workers to meet project milestones and project completion dates. Failures in Time Management were contributing factors to the drastic failure in Risk Management that ultimately lead to unfortunate losses of the lives of three workers.

Cost Management failures continued throughout the Implementation phase. Contention continued among stakeholders concerning cost that should or should not be in the budget. The project team missed the opportunity to clearly define the project direct and indirect cost early on in the project life cycle. It appears that the project team may have provided a ballpark type estimate in the MOU but failed to effectively communicate to stakeholders that it was such. The more accurate are your initial cost estimates the more likely you will complete the project within budget (Pinto, 2010). Once the project team had received more detail information on project scope and deliverables they should had revised their initial estimates by conducting either feasibility estimates based on data derived after the completion of the preliminary design work or by conducting definitive estimates after most of the designed work had been completed and the scope was well understood. By providing the stakeholder with more accurate cost estimates early in the project the project team most likely could have avoid most of the financial conflicts that arose between stakeholders, taxpayers and the project team.

Poor cost estimating lead to cost overruns that were not related to the crane accident. The drive to find funding to cover cost created ownership and responsibility problems among the stakeholders. An audit conducted on behalf of one of the state representatives found that the project was 76 million dollars over budget (Serich et al., 2006). The project ultimately cost 562.7 million to complete and disgruntled unsuspecting taxpayers funded 84%. The project team also failed to report cost expenditures in a timely and effective manner to taxpayer stakeholders. The project team could have used a budget contingency to allocate additional funds to cover project uncertainties and unexpected expenses. Once the cost baseline had been established and approved by stakeholders any changes in project scope should have triggered revisions in project cost estimates. Unfortunately, the team missed opportunities to implement effective cost estimating, cost budgeting and cost control processes needed for a successful cost management implementation.

In the area of Quality Management Serich 2006 found that quality planning control measures were in place as the project team work diligently on meeting the customers completion date, possibly at all cost (Serich et al., 2006). The goal of quality planning is to determine which quality standards are relevant to the project and determining how to satisfy them. It seems that the project team had determined based on the client requirement that completing the project by the estimated completion was the most important quality standard to maintain and achieve. The project team did recognize the importance of customer satisfaction but in their enthusiasm to meet the

schedule quality requirement they compromised other project management principles and process and ultimately failed to even meet the completion date goal they had so diligently worked to achieve. Even after the audit findings, no quality control measures were put in place to control cost overruns, monitor cost expenditures, and address schedule concerns (Serich et al., 2006).

Quality assurance (QA) as defined by the Project Management Institute (PMI) is the application of planned, systematic, quality activities to ensure that the project will employ all processes to meet requirements (Project, 2004). One fundamental part of QA is to recommend corrective actions to increase the effectiveness and efficiency of achieving project outcomes. The project team missed a major opportunity to use the audit as an input to recommend immediate corrective actions to resolve stakeholder cost issues and concerns. The failure to act once the problem was clearly identified and communicated to all parties involved subsequently lead to a *2-Poor* rating in overall Quality Management during the implementation phase.

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Although government audits did indicated that the project manager was supplying government agencies with required reports as requested, Communication Management was also rated a *2-Poor* during the Implementation phase. The major missed opportunity in Communication Management came when the Miller Park Joint Venture project team and the District supporting and monitoring the projects progress refuted the audit findings and communicated that the project budget was being meet. This was a major failure in information distribution the project management process of making information available to project stakeholders in a timely manner. The project team was responsible for providing clear and complete information to all stakeholders and communicating that the project was on budget when in fact it was not was a gross oversight.

The Miller Park Joint Venture project team could have developed a detailed report or presentation outlining budget estimates, areas and causes of cost overruns, new projected estimates, and enhanced cost control measures designed to move the project toward completion. Yet it appears that status report to all project stakeholders were lacking or non-existent on areas of time/schedule and cost and they also were lacking in communicating on contract structures and cost responsibilities (Serich et al., 2006). Performance reporting and managing stakeholder communications were two key areas of Communication Management were opportunities for improvement existed but the project failed to take advantage of those opportunities.

Although there was not a large quantity of scope errors reported during the Implementation phase the one that did exist was a major error and like many others project management issues that existed during this phase of the project, it had significant impact on the entire project. It was reported that the changes in project scope created tremendous pressure on the project team to meet new requirements without any significant change in time and cost. The scope pressure lead to schedule pressure and speculation arose that the add pressure to meet the schedule deadlines may have been a contributing factor in causing the construction accident (Serich et al., 2006). If the

scope pressure was a contributing factor to the loss of life caused in the crane accident, then scoring Scope Management as *2-poor* during the implementation phase seems justified.

The project team missed a major opportunity to implement effective scope reporting. The team should have been providing updates on budget performance caused by changes in scope and by providing variance or exception reports documenting slippages in time and cost against the originally baseline activities. Control system are also vital to ensure any changes in the project baseline are conducted in a systematic and thorough manner. Also, it appears that the project team did not have an effective control system in-place to manage scope creep (Pinto, 2010). Trend monitoring as a control system could have also been used to track the estimated cost, schedules, and resources needed against the original planned activities.

Opportunities for improvement in configuration management around the areas of client request and change management also existed. Stakeholders in projects often request what they perceive as minor configuration enhancements to their original requirements it is the responsibility of the project team to properly evaluate these request and document and communicate the impact of the request to the overall project implementation. Scope Management was another area was there was definitely opportunities for improvement.

During the Implementation phase, the project team attempted to execute efforts in Procurement Management by exercising a contractual option to cap cost taken by the project but it was ineffective due to the late execution of the option. This attempt at Procurement Management was needed because there was no document to cover implementation phase cost overruns and the MOU did not effectively cover responsibilities for unexpected cost. Cost overruns continued throughout the implementation phase and with no contractual obligations in place to address this major issue procurement management was rated *2-Poor*.

Project Procurement Management includes contract management and administration. These are two areas where if the project team had exceeded expectations in performance, most likely the major cost issue that continued to hinder the project would not have risen to the level of concern and conflict that would create challenges for the project team. The team could have used fixed bid contracts, or cost-reimbursable contract such as Cost-Plus-Fee (CPF), or Cost-Plus-Fixed-Fee (CPFF) to control labor cost (Project, 2003). Contracts could have included incentive clauses to meet or exceed labor budget expectations. The project team should have ensured that all contracts had clearly defined Statement of Work (SOW) language and documentation with cost agreements that clearly define what happens when the seller does not meet contractual commitments. The project team also missed the opportunity to implement the one cost containment option they did have in one of their contracts which was a Procurement Management contract administration failure.

The area of Integration Management was also rated a *2-Poor* as problems that arose in specific areas of project management often influenced other areas. The Project team was ineffective in recognizing and managing the project management processes that can often overlap with other project management areas. Funding and ownership issues remaining from the inception phase were eventually resolved during implementation and closeout phases but could have been avoided early on. This was a missed opportunity to direct and mange project execution by implementing corrective actions during the inception phase. The project team did not mediate when problems arose and could have insisted on regular schedules, cost variance reports, and could have suggested other types of corrective actions (Serich et al., 2006). Project managers also showed poor leadership in communicating to workers. This lack of communication caused some workers to quit as many had safety concerns that they felt were not being heard and no communication addressing safety issues or concerns were being communicated to the workers. The project team failed to realize how Communication Management and Human Resource Management processes can intersect and overlap and if not properly managed one can have negative impact on the other. The project team repeatedly missed opportunities for improvement in Integration Management during the implementation phase.

Closeout Phase

Rating Scale: 5-Excellent, 4-Very Good, 3-Good, 2-Poor, 1-Very Poor.

Project Management Area	Closeout Phase
Scope Management*: (Processes ensure that the project includes all required work, and only the work required)*	**3**
Time Management: *(Processes required to accomplish timely completion of the project)*	**3**
Cost Management*: (Processes involved in planning, estimating, budgeting, and controlling cost, project completed within budget)*	**2**
Quality Management: *(Processes for all activities that determine quality policies, objectives and responsibilities)*	**3**
Human Resources Management: *(Processes that organize and management the project team)*	**3**
Communication Management: *(Processes to ensure timely, and appropriate generation, collection, distribution, storage, retrieval, and disposition of project information)*	**2**
Risk Management: *(Processes needed to conduct risk management planning, identification, analysis, responses, monitoring and control)*	**3**
Procurement Management: *(Processes to purchase or acquire the products, services, or resulted needed from outside the project team)*	**2**
Integration Management*: (Processes and activities needed to identify, define, combine, unify and coordinate activities and processes within the Project Management Areas)*	**1**

Major Areas of Strengths:

During the Closeout phase, the follow-up audit conducted by the State of Wisconsin had no language indicating that contention around the scope of the project remained during the closeout phase (Serich et al., 2006). The project team was finally able to identify all activities that needed to be accomplished and the resources required to complete these activities. They also finally established and meet project scope quality standards, begin meeting project goals and overcame project constraints and limitations. Overall score for Scope Management during the closeout phase was a *3-Good*.

Residual effects of Time Management issues from earlier phase had an impact on Time Management during the Closeout phase. Schedule challenges, the crane accident and weather delays cause the stadium not being ready until 13 months after the original planned completion date (Serich et al., 2006). Once corrective actions were taken and a new completion date established the project team successfully met the new completion date established after the crane accident. Their ability to meet the new date was critical

to success in Time Management during the Closeout phase resulting with a score of *3-Good* in this area.

Quality management during the Closeout phase was also scored *3-Good* as the project team satisfied the one quality requirements set by the customer to meet the new project completion date. Quality Planning, Quality Assurance and Quality control project management processes where evident enough during the closeout phase to allow the project team to deliver the completed stadium within the clients new time constraints.

In the area of Human Resource Management in can be considered a strength that there was an outreach effort during the Closeout phase to show appreciation to the workers for their continued efforts and pain and suffering experienced during the fatal accident that cause the loss of life of their fellow colleagues. Although not a direct result of any project team efforts a tribute to all the workers entitled "Workers Walkway" was created to memorialize the loss of life caused by the crane accident (Serich et al., 2006). Based on this effort Human Resource Management was rated a *3-Good*.

Risk Management was also a project team strength during the Closeout phase and rated a *3-Good*, because Risk Management closeout processes were evident in the proposal of the "Safe Building Act" by two Wisconsin unions involved in the project (Serich et al., 2006). One output of the Risk Monitoring and Control process is to recommend preventative and corrective actions. The efforts to convert the project lessons learned in the area of crane operation and safety into legislation that could benefit all workers in the state would be a significant Risk Management project outcome.

Major Opportunities for Improvements:

During the Closeout phase some of the problems concerning cost escalations, funding and ownership, and financing for insurance payments were managed and resolve prior to project completion (Serich et al., 2006). Overall Cost Management was scored *2-Poor* primarily because some contractors still had financial claims after closeout (Serich et al., 2006). A major opportunity for improvement for the project team would have been to renegotiate and or amend existing contracts and budgets so they would not have outstanding financial claims after closeout. Financial issues were still being litigated years later, and after a 3 year legal battle, Mitsubishi and the stadium district reached an out-of-court settlement on the cost to build and repair the stadiums roof. Due to poor cost estimation and budget practices cost management during the closeout phase also resulted in unhappy taxpayers being assessed a 0.1% sales tax until 2014 (beyond) to pay for the stadium (Serich et al., 2006).

Communication Management was also scored *2-Poor* during the Closeout phase as there was no clear documentation of the project closeout and project lessons learned (Serich et al., 2006). The project team should have considered preparing historical records, post project analysis, and financial closeout documentation to the client as part of the closeout process (Pinto, 2010). This was a missed opportunity. Stakeholders could have use project documentation to help with comparative estimates for future

projects. This was also a missed opportunity for the project team. The team could have created documented status, performance reports and exception reports. These documents could have been utilized to help resolve or prevent some of the financial claims and contractual contention areas that arose during and after closeout.

Procurement Management was also rated a *2-Poor* because the project team should have closed out and paid all its contractual obligations to all contractors. The project team missed opportunities in earlier phases in contract administration that continued in the closeout phase that inhibited the team in closing out contracts. Contract closure is a major responsibility of Procurement management in the Closeout Phase and the project team did not meet this obligation.

Integration Management was also a missed opportunity, as The Miller Joint Venture project team did not document lessons learned (Serich et al., 2006). There were many lessons to be learned in the importance of how poor performance in project management processes in early phase of the project can have a ripple effect in later phases that can lead to a significant deficit in overall project performance. The project team missed opportunities do document major lessons learn in Scope, Cost, Quality, Procurement and Risk Management and was rated a 1-Very Poor in Integration management.

Summary

Rating Scale: 5-Excellent, 4-Very Good, 3-Good, 2-Poor, 1-Very Poor.

Project Management Area	Inception Phase	Development Phase	Implementation Phase	Closeout Phase	Averages
Scope Management	**3**	**2**	**2**	**3**	**2.5**
Time Management	**2**	**2**	**2**	**3**	**2.3**
Cost Management	**2**	**2**	**2**	**2**	**2.0**
Quality Management	**4**	**2**	**2**	**3**	**2.8**
Human Resources Management	**4**	**4**	**3**	**3**	**3.5**
Communication Management	**2**	**4**	**2**	**2**	**2.5**
Risk Management	**3**	**3**	**1**	**3**	**2.5**
Procurement Management	**3**	**3**	**2**	**2**	**2.5**
Integration Management	**2**	**3**	**2**	**1**	**2.0**

The overall rating for the Miller Park Stadium project was 2.5. Throughout the project life cycle the project team had areas of strengths but they also missed major opportunities for improvement that indicated poor execution of project management processes.

Major Areas of Strengths:

Quality Management and Human Resource Management were two major areas of strength for the project team with overall ratings of *2.8* and *3.5* respectively. During the Inception and Closeout phases the project team demonstrated high proficiencies in the project management processes of Quality Planning, Quality Assurance and Quality Control. As stated earlier, in the Inception phase Quality planning identified which standards were relevant to the project and how to achieve those standards. The team and sub-contractors implemented quality management plans, standard construction guidelines and Occupational Safety and Health Administration (OSHA) requirements (Serich et al., 2006). Quality control measures were used to report the projects progress and mitigate quality insufficiencies. Quality management during the Closeout phase included Quality Planning, Quality Assurance and Quality control project management processes

needed to allow the project team to deliver the completed stadium within the clients new time constraints.

As a Milwaukee Brewers fan and a visitor to Miller Park on more than one occasion, I can attest to the fact that the Stadium ultimately was a quality success for the city, fans and team despite all the challenges that arose during the project. Miller Park stadium district director Mike Duckett, executive director Southeast Wisconsin Professional Baseball Park District said the roof was significant in making Brewers home attendance increase by about 1 million fans annually since the new stadium opened (Ryan, 2012). Duckett also stated that the Brewers average about 2.54 million attendees in the 11 seasons since Miller Park opened, compared with 1.54 million for the last 11 seasons of Milwaukee County Stadium and credited the attraction of the retractable roof for the attendance gains.

Although Quality Management was a strength, Human Resource Management was the area where the project team performed the best in implementing project management processes. During the inception phase the team accomplished important aspects of Human Resource planning, team development, and acquiring and managing the project team. The project required a significant amount of laborious and dangerous task with over 5,000 personnel working over 2.4 million work hours and ultimately the project was successfully completed. During the project the project team was successful at building diverse groups of functional experts into highly functional teams. The site safety team consisted of a four-member team with 60 years of construction and safety experience. The team developed an extensive site safety manual that all contractors were required to follow or establish their own approved safety manual. The safety team staff management plan appeared to successfully identify training needs and safety issues critical to the success of the project. During the Closeout phase, a tribute to all the workers entitled “Workers Walkway” was created to memorialize the loss of life caused by the crane accident, which seemed to be an appropriate and needed closing activity for the project.

Major Opportunities for Improvements:

Despite the ultimate success of the stadium Cost Management, Integration Management and Risk Management during the Implementation phase were major opportunities for improvement during the Miller Park Stadium project. Cost Management process execution was poor throughout the project life cycle. Major failures in Cost management most likely could have been avoided with better project management in the cost estimating, cost budgeting and cost control.

Cost Management opportunities in the inception phase were missed because the project team did not properly estimate the total cost of the project and a Wisconsin Legislative Audit Bureau found that local taxpayers would have to pay $76 million more than originally projected bringing the total to $400 million.

Cost overruns were not addressed in contracts and caused numerous disputes among stakeholders and the project team. Feasibility estimates could have been used to base estimates on real numbers after the completion of the project preliminary design or Definitive estimates given only after most of the design work is finished. By not having complete risk contingency plans for time/schedule and cost, risk allowed the project to grow $23 million or 23% in cost (Serich et al., 2006). Cost estimates rose to $322 million before construction began, due to $72 million in site preparation cost not being accounted for in the original cost estimates. Project funding requirements were not complete, project completion forecasting should have been based on key milestone and deliverable completion dates and cost dependencies should have been included as part of the cost management plan.

Cost Management failures continued throughout the Implementation phase. The project team missed the opportunity to clearly define the project direct and indirect cost early on in the project life cycle. It appears that the project team may have provided a ballpark type estimate in the MOU but failed to effectively communicate to stakeholders that it was such. Once the project team had received more detail information on project scope and deliverables they should had revised, their initial estimates either by conducting feasibility estimates based on data derived after the completion of the preliminary design work or by conducting definitive estimates after most of the designed work had been completed and the scope was well understood.

Overall Cost Management was poor during closeout because some contractors still had financial claims after closeout (Serich et al., 2006). As stated, earlier a major opportunity for improvement for the project team would have been to renegotiate and or amend existing contracts and budgets so they would not have outstanding financial claims after closeout. Financial issues were still being litigated years later, and after a 3-year legal battle, Mitsubishi and the stadium district reached an out-of-court settlement on the cost to build and repair the stadiums roof. Cost Management project management processes were lacking and poorly executed throughout the project.

Integration Management was also poorly executed throughout the project life cycle and was a major missed opportunity for the project team. Significant flaws in integration management were apparent throughout the inception phase. Specifically the proposal original proposed as a privately funded project but eventually had to be changed to seek public funding. This was a major flaw in scope, change, and cost management integration and could have been avoided with a well-written charter utilizing contracts, Statement of Works (SOW), and change control procedures that could have effectively addressed these issues. The Project team was ineffective in recognizing and managing the project management processes that can often overlap with other project management areas. Funding and ownership issues remaining from the inception phase were eventually resolved during implementation and closeout phases but could have been avoided early on. This was a missed opportunity to direct and mange project execution by implementing corrective actions during the inception phase.

Project managers also showed poor leadership in communicating to workers. This lack of communication caused some workers to quit as many had safety concerns that they felt were not being heard and no communication addressing safety issues or concerns were being communicated to the workers. The project team failed to realize how Communication Management and Human Resource Management processes can intersect and overlap and if not properly managed one could have negative impact on the other.

The Miller Joint Venture project team did not document lessons learned (Serich et al., 2006). There were many lessons to be learned in the importance of how poor performance in project management processes in early phase of the project can have a ripple effect in later phases that can lead to a significant deficit in overall project performance. The project team missed opportunities to document major lessons learn in Scope, Cost, Quality, Procurement, Risk Management and Integration management during the Closeout phase. Throughout the project the Miller Park Joint Venture project team failed to consistently perform Integration Management processes.

Overall Risk Management throughout the project was average but the poor showing during the Implementation phase indicates a major opportunity for improvement in this area. Milwaukee weather was a project risk consideration but bad weather days could have been built into the project risk task contingency plan to allot for zero or reduced hours during inclement weather as well as allowing for an extended completion date in the project plan. With more attention and dedication to risk management processes the unfortunate loss of lives that occurred during the project might have be avoided. The project team failed in project management knowledge areas of Risk Management Planning, Risk Identification, Qualitative Risk Analysis, Risk Response Planning, and Risk Monitoring and Control (Project, 2004). These processes should have been updated throughout the project and the project team failed to do so in a timely and effective manner.

Project Management Lessons Learned:

Determining if a project is successful can be a difficult task. Typically the Quadruple constraint Time, Cost, Performance (Quality), and Client Acceptance is one standard utilized to measure project success (Pinto, 20110).

Time was a major constraint for the client stakeholders and the project team failed to meet the original completion date. One lesson learned would be that to meet project time and schedule commitments detailed scope, risk, and critical path planning and analysis must be accomplished to establish reasonable expectations around project completion while maintaining a high level of project efficiency in project management process execution. There were multiple events that lead to the project not being completed on time and schedule and with better execution of project management process many of the project team failures may had been avoided completely or the impact

significantly reduced. The project team did not meet the time standard for project success.

As we evaluate the Miller Park Stadium project for project management lessons learned utilizing the Quadruple constraint standard we find that one lesson learned is that stakeholders and project managers needed to be concerned about cost management in the early phases of the project and throughout the project life cycle to effectively manage and prevent unnecessary cost overruns. The project team did not meet the cost standards for project success.

As we look at Performance and Quality the lesson learned is that cutting corners have the potential to cause more problems than opportunities. The project team cut corners to meet the original project completion date and that lead to risk behavior during the implementation phase with tragic consequences. Never compromise on the safety of worker, not even to meet time, cost and schedule constraints. An additional performance lesson learned was that quality parameter, such as cost, set in the inception and development phase needed to also be monitored and controlled during the implementation phase.

Lessons learned for Risk Management performance include learning that not properly managing risk can cause loss of time, money, and lives and that Certification or License to operate construction cranes was needed. There were also lessons learned from OSHA, Insurance reports, and from incidents filled with crane accident reporting agencies.

Lessons learned in Integration Management performance would include that the Miller Joint Venture project team needed to document lessons learned as part of the project closeout process. Detailed planning was also needed to support the project scope and should have included Procure Management contractual obligations outlining scope and cost obligations and consequences for not meeting those obligations. With the multiple failures in performance and quality throughout the project life cycle one could conclude that the project team did not meet performance standards for project success.

Client acceptance was one constraint that ultimately could be perceived as a success. The Miller Park Joint Venture team met technical specification to deliver a modern stadium with a retractable roof. The final product did meet the customer needs and the client seemed satisfied with the end result. Business success was accomplished as the stadium did achieve significant commercial success. The future potential for the stadium to open new avenues of revenue is highly probable based on current performance and it can be said that the project did meet the client acceptance standards for project success.

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