

**CHALLENGES ON CULTURALLY DIVERSE CONSTRUCTION PROJECTS  
AND STRATEGIES TO OVERCOME THEM**

**A STUDY OF MULTICULTURAL PROJECT MANAGEMENT TEAMS IN THE UAE**

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## **I EXECUTIVE SUMMARY**

Construction projects in the United Arab Emirates are composed of highly diverse management teams. The presence of many different backgrounds, cultures and languages among the project participants has the potential to create numerous challenges. This study demonstrates that these conflicts arise due to the presence of status hierarchies, divergent norms and values, communication barriers, etc. Therefore in order to mitigate these challenges and the adverse effects that they impose on construction projects, these challenges, strategies currently employed to resolve them and recommendations have been addressed.

The recurrent challenges that were identified on the projects are described herein. For each topic, such as communication barriers, specific examples are described. Furthermore, the strategies that the management team employed to resolve these challenges are organized into overarching topics. These sections, such as cultural awareness, organize the solutions and enable connections to be drawn between the previously identified challenges and these resolution strategies.

Finally, recommendations were made. These recommendations include documentation of lessons learned, team building activities, cross project incentive programs, etc. By further building on the strategies that were employed, they provide the management team with additional tools for effective conflict mitigation and resolution.

## **II INTRODUCTION**

### **1. RESEARCH GOAL**

This research goal of this independent study is to identify challenges on multi-cultural mega projects in the United Arab Emirates (UAE), and to identify strategies that firms can adopt to overcome these challenges.

### **2. OBJECTIVES**

The objectives of this study were to learn hands-on about challenges on culturally diverse projects, to have the opportunity to perform an independent study/research project, to increase my international experience and to work with a leading international engineering and construction management (CM) firm. In order to achieve these objectives and maximize this learning experience I set the following goals: to visit 3-6 projects, to perform 15-20 interviews, to give a final presentation, and to write a final report.

### **3. METHODS**

During the autumn quarter of 2005 I began discussions with an international construction management firm and Stanford's Collaboratory for Research on Global Projects with regards to performing an independent study. By November I had obtained sponsorship from both entities and had identified the scope of my research. In December I went to the UAE to perform the research. I visited three projects and interviewed over 20 informants. These individuals worked for the construction managers and the owners on the projects I visited; they included project participants in the following positions:

- Project Manager
- Construction Manager
- Conflict Manager
- Safety Manager
- Scheduling Specialist
- Quality Control Specialist
- Superintendent
- Contract Manager
- Secretary
- Human Resources Specialist

The interviews with these project participants were audio-recorded and transcribed. Once I had the interviews documented, I coded the data into different sections (country info, project info, cultural info, examples of challenges and strategies identified). Next, I grouped the challenges by topic (status hierarchies, divergent norms and values, communication barriers, etc.) as where the strategies (cultural awareness, flexibility & adaptability, etc.). The coding process involved several iterative refinements. Once a set of categories had emerged from the data, specific examples of each “challenge” and each “strategy” were selected for inclusion in the present report. The “challenges”, “strategies” and a set of over-arching recommendations comprise the main sections of this report

### III PROJECT OVERVIEW

#### 1. PROJECT DESCRIPTION

The projects studied were all signature multi-use projects in the UAE. The UAE, a federation of 7 emirates located on the Arabian Gulf, has seen a great deal of growth over the past decade, especially in the tourism economy. This increase in tourism has been the motivating factor for the development of all of the projects studied. In order to meet the demands of this increasing tourism population these mega-projects are built with retail, commercial, residential, leisure and entertainment areas.

#### 2. ORGANIZATIONAL CHART

For one of the projects studied the organizational chart is shown below. Although the chart is quite simple in 2000 it is interesting to note the changes that transpired over subsequent years. As the project progressed the management teams grew and the participants were reorganized. Below are three, of the many changes the organizational structure went through.

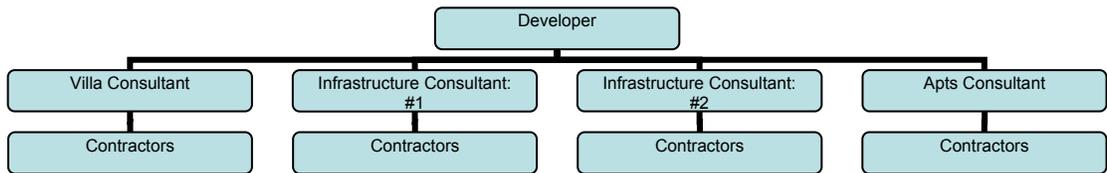


Figure 1: Organizational Chart – 2000

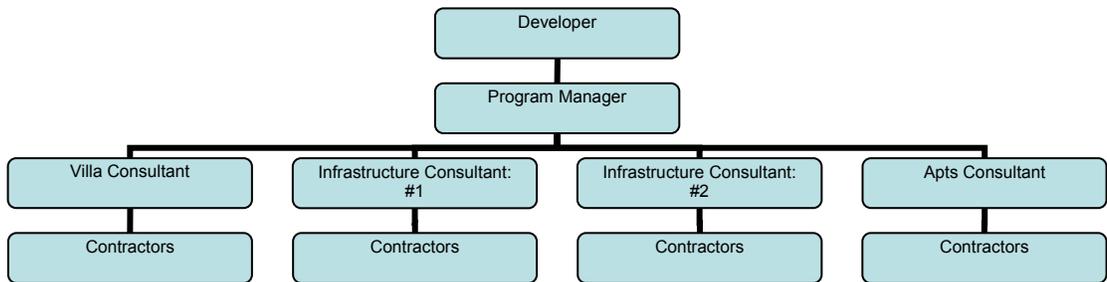


Figure 2: Organizational Chart – 2004

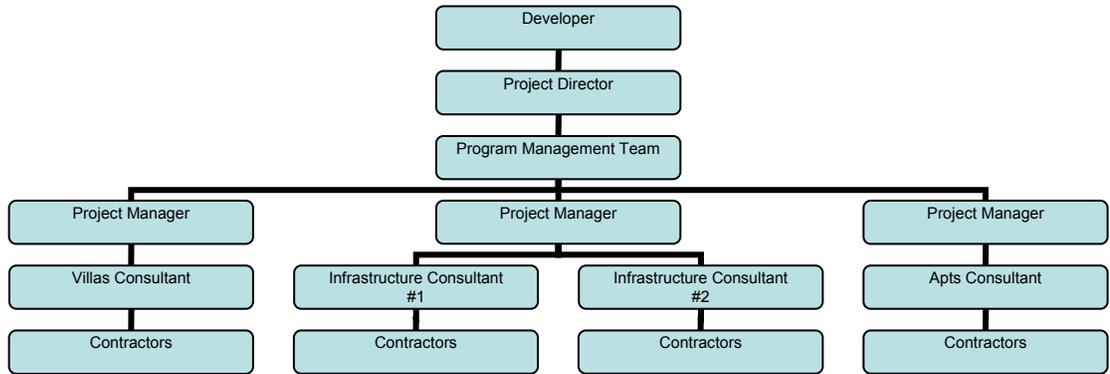


Figure 3: Organizational Chart - 2005

### 3. TIMELINE

All of the projects studied are highly complicated and multi-faceted; therefore, they often take many years to build. The major milestones for the same project reference above are as follows:

- 2000 Project Announced
- 2001 Dredging Commenced
- 2004 Land Reclamation Complete
- 2004 Project Management Contracts Let
- 2005 Project Organization Restructuring
- 2006 Partial Completion
- 2008 Final Completion

Although the entire timeline of the program is eight years, all of the projects are phased in such as way that sections of the program can be occupied before Final Completion. Therefore the developer can benefit from having an income stream before Final Completion is reached.

#### IV CHALLENGES

The various challenges that the informants reported have been organized into eight categories. These categories are: Status Hierarchies, Divergent Norms & Values, Communication Barriers, Lack of Preconstruction Planning & Document Control, Frequent Scope Changes, Inconsistent Change Order Procedures, Governmental Involvement, and Impermanent Organizational Structures. Each of these sections is further described in the following sections and examples of challenges encountered are provided.

##### 1. STATUS HIERARCHIES

**“It is very hard on this job because people are classified by their ethnic background, but really the experience varies”**

The fact that people are classified into “status hierarchies” – a system that measures an individuals value based on their national culture – is not merely a characteristic of one project in the UAE, but rather an issue that is endemic to the UAE society. In the United Arab Emirates there remains a strong hold to, what I would view as a Western observer are, cultural stereotypes or prejudices. To some extent one’s “worth” is defined by their nationality. Not only is this apparent in the society, but it is noticeable on the construction site. Although many feel that the existence of a cultural hierarchy is fading, many informants identified that these boundaries, cast along time ago, still persist. When asked to describe the status hierarchy, one informant sketched out the following portrayal:

National Culture	Position in the Status Hierarchy	Typical Responsibilities on a Project
• UAE Nationals	1	Owner/Developer
• GCC Nationals	2	Upper Management
• Certain Arabs	3	Upper Management
• Brits	4	Management (CM)
• Americans	5	Management (CM)
• Australians	6	Management (CM)
• Other Arabs	7	Management (CM/GC)
• Iranian/Iraqi	8	Management (CM/GC)
• Europeans	9	Management (CM)
• Filipino	10	Technicians
• Pakistani	11	Laborers
• Indian/Chinese	12	Laborers (some Chinese GCs)
• Sub Saharan African	13	Laborers

Nonetheless, it was also stated that these sentiments were less apparent within international design and construction management firms.

##### 1.1. Staffing a Security Gate

“Who would you have as security staff on the gate to a big project?” an informant asked me at the beginning of an interview. Before I had the opportunity to respond he added, “which nationality?” I was dumbstruck; I was not aware that certain nationalities were better than others at being security guards. He then concluded, “The only proper answer would be an Emirati,” and then went on to explain. Earlier that morning he had been putting together the security team on a 5-mile long beach development project, from his experience on other mega projects in the UAE he knew he couldn’t staff the gate with an Indian, because a Filipino would just drive past him without stopping. But if he put a Filipino at the gate most westerners would just drive by. If he put a Brit or an American at the gate everyone but an Emirate would stop. So therefore you should put an Emirati, right? Well, not exactly,

because besides the fact that it would be almost impossible to find an Emirati willing to do such work, one Emirati would cost you more than 20 Filipinos. So in the end the informant needs about 200 men to staff the gates of the project when 6 could have been sufficient. It's not because "the Filipino won't do his job, but because no one will take commands from him."

### **1.2. The Caste System**

"I couldn't figure out why they were at each other's throat," stated an informant superintendent. He then went on to describe a crew that he was supervising that was not functioning properly. The crew was comprised of a group of Indians, and had been organized by a local contractor. After observing the workers for sometime, the superintendent determined that the conflict was between three players: the supervisor, a lead and a worker. The basis of the conflict stemmed from the fact that these three individuals had been placed in a hierarchal relationship that conflicted with the inherent relationship they had with one another based on the Indian Caste System. According to their caste system the worker should have been the supervisor, and the supervisor should have been the worker. Therefore, the lead and worker had been forced to take orders from someone whom they believed was of lower status; hence; created a great deal of conflict.

## **2. DIVERGENT NORMS & VALUES**

Throughout all levels of multi-cultural construction projects there are divergent norms and values. Values are conceptions of the preferred or the desirable (e.g. winning the game, making a profit) and norms specify how things should be done (e.g. informal expectations for how the game is to be played, conceptions of fair business practices) (Scott, 2001). Examples of divergent norms and values were cited among all project participants, from the laborers to the contractors and construction managers. Furthermore, differences in basic belief systems and national allegiances can create a host of misunderstandings and disagreements, some of which can escalate into costly conflicts.

### **2.1. Labor Fights**

"Another problem we had on site was fighting between different nationalities," it was the Chinese v. Indians, Indians v. Pakistani and one group of Indians vs. another. The later example often stemmed from religious affiliations, while the Indian v. Pakistani example was quite different. About a year ago, there was a major cricket match between India and Pakistan; Pakistan won and as a result the Indians on site "all went mad" and they beat up any Pakistani that they could find. The informant concluded, "There was a huge riot on site because of cricket, how do we predict that?"

### **2.2. Perception of Safety Risks – Jumping the Gap**

"I have photographic evidence of a supervisor telling an individual laborer to jump a 6 foot gap between two 7" beams 25 feet in the air, and he had no option but to do it". Due to the fact that the supervisor was of a higher class than the worker, the worker did not feel that he had any right to speak out at his superior. This is common amongst Indian work groups, as remnants of the caste system are still noticeable. The informant, a safety engineer, had been 100 yards when the supervisor directed the worker to jump the gap and fetch a piece of equipment; and although the worker hesitated, he followed the order given.

### **2.3. Perception of Safety Risks – Placement of Handrail**

"What you and I see as dangerous is not necessarily seen by others [as such];" take for example a handrail on the side of a scaffolding. There can be many different viewpoints with regards to the need of a handrail on the side of scaffolding. The informant described a Cyprian contractor he had worked with; the contractor nailed pieces of wood to the bottom of the platform and connected them at the top with another piece of wood. If a worker leaned

on it, they would fall over, but it was just supposed to be “a marker.” It was just there to highlight where the edge was; their concept of risk management was to point out where the risks were and it was up to the individuals to deal with them. Then there was an Indian contractor that believed he should not put any type of handrail up, because if he did the workers would just lean on it and fall over. The contractor stated that workers know that “if they go to the edge of a working platform they will fall off and die, so they don’t go.”

#### **2.4. On the CM Teams – Variations in Aggressiveness**

Conflicts on these multi-cultural project management teams not only occur in the field, but in the office as well. On the technical/management side a distinction was made between the aggressive nature of different cultures. “My own view is that Americans want to drive the project and they have a sense of urgency. British are more relaxed.” While this was one informant’s view, others added how all westerns had a greater sense of urgency and aggressiveness than their counterparts from the Middle East. These different orientations towards the “value of time” made it difficult to co-align the interests of all parties involved.

### **3. COMMUNICATION BARRIERS**

Communication is difficult enough when you speak the same language as another person. Finding the right phrasing to encourage and motivate workers can be quite challenging, then add dozens of different languages and only a few individuals that speak more than one and then put all of these workers and laborers from different backgrounds on the same crew. The end result is a multi-cultural project team that is innately challenged as a result of these communication barriers.

#### **3.1. Pitfalls of Translation – Safety Training**

“We went to each of the contractors and said, ‘give me 20 laborers [and] I am going to train them for 2 days so that they can be safety support staff.’” The first problem was that none of them spoke English. So they decided to train the workers through an interpreter; however, directions got distorted. The safety engineer would say “there must be a handrail at one meter” and the translator would say “there must be a handrail.” This resulted in the training of a safety support staff that was improperly informed. The second problem was that there were a group of twenty laborers and the interpreter that was given to them didn’t speak the language of the laborers; he spoke English and Hindi. So then they had to get another interpreter that spoke Hindi and the language of the laborers since no one on the jobsite spoke English and the laborers language. This three-stage translation – from English, to Hindi, to the language of the laborers – further increased the variation in the final translation received by the workers.

#### **3.2. No common language – Dropping the Hammer**

“A group of Indian labors and Chinese labors were all faced off against each other armed with tools; they were shouting at each other across a 10 foot gap, like an old war film. But they’ve got hammers, machetes, screwdrivers, nails... maybe two, three hundred men.” Fifteen minutes prior a Chinese laborer had dropped a hammer from the 5<sup>th</sup> story of one of the buildings and it just missed a group of Indian workers below. The Indian workers thought that he had thrown it, but it had been just an accident. They were caught unable to communicate with one another, unable to discuss the misunderstanding. This, the informant noted was not uncommon, how can Indians and Chinese communicate if they don’t know each other’s language?

#### **3.3. Discrepancies in Phrasing – Meeting Minutes**

Often the phrasing of meeting minutes communicates different messages to different parties. Although the language may be perfectly clear, it is the various meanings and concepts that lie behind the actual words that can become an issue of misinterpretation. One informant noted that throughout the project a Japanese sub-contractor

had difficulty understanding the meeting minutes and the commitments that the construction manager thought they had agreed to.

### **3.4. Discrepancies in Phrasing – Agreeing, though not Performing**

“They could not tell me no.” One informant identified a number of cases where crews could not – or would not – say “no” to him. For example, they might want to do something differently, but they would be too afraid or too shy to address him, because in their culture such an address was perceived as inappropriate. The informant recalled one example where he asked, “will you work overtime tonight?” The crew said “yes”, but 15 minutes later they were packing their bags to head home. Although this is only one example, the informant recalled that there had been numerous times where the crew would just agree because that was what was appropriate. “In the US that would be lying, but it isn’t here.”

### **3.5. Subcontractor’s Poor Performance/Communication**

“Yesterday I had a meeting on a major issue,” stated the conflict manager. At this meeting the conflict manager had difficulties communicating with the contractor. They both spoke English quite well; however, language was not the issue. Rather, their inability to communicate with one another was rooted in their different backgrounds. Their respective cultural views on what was appropriate in negotiation process were quite different. Therefore the conflict manager could reach no solution as he could not communicate in the contractor’s “own terms.”

## **4. LACK OF PRECONSTRUCTION PLANNING & DOCUMENT CONTROL**

There is a common trend among projects that once they were announced the owners/developers are insistent on seeing semi-immediate progress. By mobilizing quickly a signal can be sent to the potential buyers/tenants that the project is a “sure thing”. However, although units can then be sold sooner, this methodology results in work being performed before the proper planning or the systems are in place to efficiently manage the project.

### **4.1. Lack of Master Plan**

“I was surprised at the level of no planning that happens in this part of the world. Here they just want to see progress, even if it is in the wrong direction.” The client on these mega projects is often a high level sheik and when they say “do this” to their subordinates, the employees want to show that they are responsive, so they just start the project with little or no planning. But it’s not really their fault, because if they don’t act quickly, if they don’t show some sort of progress – they will be fired.

### **4.2. Poor Phasing & Document Control – Built Facilities**

In addition to the fact that there is minimal preconstruction planning, the phasing and document control were poor. On one of the projects researched a sewage treatment plant was finished in April that would not be needed until the following year; another sewage treatment plant that was finished early, now needs to be upgraded to meet a change in design capacity. The former demonstrates poor phasing and resourcing, as many critical activities that had fallen behind schedule could have used the resources that had been used to build the first facility. The latter is not only an example of poor preconstruction planning, but also an example of poor project control, because now that they want to upgrade the facility they cannot locate the as-built plans, specifications or contract documents that were originally used to build the facility.

## **5. FREQUENT SCOPE CHANGES**

Due to the fact that the client is wealthy and does a lot of “investigating” and “exploring” around the world during the construction of the project, new features and ideas are often identified and need to be incorporated into the design, often irrelevant of the increase in cost that they impose. This “puts inexperienced contractors under a lot of pressure” and has had a drastic impact on the feasible completion date.

### **5.1. Number of Villas**

Originally the project was designed to accommodate 1,000 villas, now six years later the project will accommodate 2,700 villas. This not only has an impact on all of the contractors that are building the residences on the project, but in addition it has an even greater impact on the design and construction of the infrastructure – the layout of the utilities grid, the design of the sewage treatment facility, and the size of the water lines.

### **5.2. Original Design had a Canal**

Originally the canal that traveled through center of the trunk was designed to connect to the sea in 5 locations. However, as project costs began to escalate and the client’s return on investment began to decrease, they decided to re-design the canal so that it did not connect with the sea. Under the new layout they could sell the additional plots of land where the waterways would have gone. Not only did this have an impact on the location and routing of the infrastructure, but on the demand as well.

## **6. INCONSISTENT CHANGE ORDER PROCEDURES**

Similar to the need to get the project off the ground, without having the proper document control systems in place, the change order procedures were not established at the onset of the project. As a result, throughout the project, different methods were taken to resolve changes in the scope of work. These methods often created a great deal of hardship and reduced the authority of the Construction Manager.

### **6.1. Bridge Re-build**

“I just heard the sheik didn’t like the bridge, so he told them to knock it down.” Originally in the middle of the trunk there two waterway, that ran perpendicular to the canal, and connected the canal to the sea. Therefore two bridges were designed to transport traffic over these waterways; however, when the waterways were cancelled the bridges were already under construction, so they proceeded to build them. Upon deletion of these waterways from the plan the sales office had two more plots of land to sell, where the waterways had been. When they reviewed their sales contract they realized that one of the plots of land they had sold was larger than in reality; therefore, rather than go to the developer to resolve this issue, the “sales office instructed the contractor without going through any of the design consultants, project managers, or the client’s own management team to put a bend in the bridge,” thus increasing the size of the lot. The contractor followed their direction. Shortly thereafter the sheik flew over the project and saw that the two bridges where not mirror images of one another; one had a bend in it. “Knock it down and build it again... just make the trunk wider,” the informant recalled him saying. Hence the bridge was knocked down and rebuilt for approximately 4.5M US dollars.

### **6.2. CM Circumvented**

“The local contractors had the ability to negotiate with the client.” It is often difficult for the Construction Manager to maintain authority over contractors when they do not have a contract with them, as the client maintained all of the contracts directly with the different project participants. In addition, it is increasingly difficult when the contractors are local, and are closely tied to the client. Hence, the contractor would often circumvent the consultants, on-site inspectors and construction managers and negotiate directly with the client. When the client

would make accommodations to the contractor, that the construction manager would have previously said were not possible, their authority and ability to manage the contractors was further undermined.

## **7. GOVERNMENTAL INVOLVEMENTAL**

The government is greatly involved in all projects going on in UAE. Often the government serves as a partner or owner on developments and hence can greatly impact a project. However, even on those projects that are not managed by the government, their influence on the projects is still noticeable.

### **7.1. Approval of New hires**

Since the client had strong links to the government, the government had an increased ability to impact the project. One of the main areas that they exercised this capability was in the hiring process. For the upper management or technical positions they often rejected people from certain countries, backgrounds or gender. For example one informant, working in human relations stated that it was almost impossible for him to hire an Indian or Pakistani engineer that had been educated in their home country. This he believed was because the client was of the mindset that Indians and Pakistani were fit to be laborers and not engineers or managers. Another example, provided by a different informant, was that recently the government has become concerned that there were too many Indians in the country and therefore they have temporarily suspended the issuance of visas to anyone from India. These governmental preconceptions must be taken into consideration in the staffing of a project team.

### **7.2. Enforcing hiring that enriches the ME Egyptian pipe layers**

In addition to placing restrictions of those laborers who can be hired, the government has been known to require that certain nationalities be hired. This process is known to be a charity for other Middle Eastern countries. For example the ruler of the Abu Dhabi Emirate, in an attempt to help out Egypt's economy, had 2000 laborers hired from Egypt to work on projects in the UAE. Since the money was available, rather than just send Egypt money, he offered Egypt nationals the opportunity to work, and earn some money to send home. No further examples of this practice were identified since his death last year.

### **7.3. Mourning Periods – Death of Ruler**

It could be viewed as a force majeure risk that the construction managers, consultants and contractors take on, but when someone in the government dies and a mourning period is announced it can be quite difficult for a project. When I was in country such an incident occurred. I had been in Dubai for less than two days when the ruler of Dubai died. This resulted in a suspension of all work in the private sector for 4 days and in the public sector for 7 days. This meant that all of the projects were shut down immediately and the contractors were heavily fined if anyone was caught working. A similar incident took place a year ago when the ruler of Abu Dhabi died; however that time the public sector was shut down for one month. Therefore the government “didn’t come to work for one month.” And, when the client is, in effect, the government it is quite challenging to build a project without the client’s input.

## **8. IMPERMANENT PROJECT ORGANIZATIONAL STRUCTURE**

International projects are known to have impermanent organizational structures – maybe the director changes a couple times because he is not doing his job good enough. Whatever it maybe that causes these changes, the projects reviewed not only interchanged different employees for different roles, but the companies managing the projects and the overall organization of the project varied drastically through the development of the project.

### **8.1. Original v. Current**

“The role we had lasted maybe a month, and then they changed it.” The client on these mega projects has a tendency to perpetually re-configure, add and remove project participants. For example, on one of the projects reviewed the upper/middle management team grew by 300 people. Originally, the client thought that they could manage the entire project themselves. Later they determined that they would need to add construction managers, a program manager and then they decided “to go to an even lower level – site supervision.” The original, intermediate and final organizational structures were shown previously, as Figures 1, 2 and 3.

### **8.2. Position of Project Director**

Over the course of the project “some of [the construction manager’s] staff have been transferred to [the client].” In addition, some of the staff from the various developers and the consultants joined the client’s team. Although these project participants functioned as if they were employed by the client, they were not. They serve as a resource to the client, which helps expedite the project and ensure the success of all of the vested parties. In addition to establishing this diverse program management team there has been a change in the overall program management since the beginning. Originally, the project director was from the client, and then there were about three more directors from the client, until the client realized that they could not do it on their own. That is when one of the developer’s on the project began to get concerned with the feasibility of the infrastructure being ready for them on-schedule. It was then that the client decided to place one of the employees of the largest developer, as the project director.

## **V STRATEGIES**

There are various strategies that the informants identified and implemented, in order to resolve the challenges encountered on their projects. These strategies have been organized into six sections. The sections include: Cultural Awareness, Flexibility & Adaptability, Develop & Build Relationships, Neutral Party, Cultural Matching and Deportation. These managerial responses and how they specifically affected the challenges identified are addressed.

### **1. CULTURAL AWARENESS**

The importance of cultural awareness cannot be overemphasized. Although this strategy may seem quite obvious, it still deserves proper attention. It is crucial to invest time learning about the culture of the local community, just as it is important to understand the culture of the various project participants. By learning and acknowledging these differences expatriate managers can greatly mitigate an increase in cost that typically arises when, at an inopportune moment, something that is “common knowledge” to the local community is “discovered” by the project team.

#### **1.1. Staffing a Security Gate**

Without knowledge of the cultural hierarchies, previously mentioned, the informant would have insufficiently staffed the security gates. He would have learned the hard way; for example, after a crime has been committed. Nonetheless, once these cultural hierarchies were identified they management team was able to greatly increase the number of employees and avoid risks of theft. This is one example why it is crucial to understand the sentiments that are inherent within the country of operation.

#### **1.2. The Caste System**

Due to the fact that the informant superintendent was well informed about the history of the various cultures on his project, he was able to quickly identify the root of the problem between the worker, foreman and supervisor. The informant’s knowledge of the Indian Caste System thus facilitated the conflict resolution process and thus he

recommended, to the local subcontractor, that the team be reorganized. Had this reorganization not been advised, there could have been serious conflicts and fights among the team.

### **1.3. Approval of New hires**

Understanding the cultural environment is critical when staffing a project. Without this knowledge managers may develop a project cost estimate that is totally infeasible due to the intricacies of how the government functions and what they determine to be acceptable. For example, if managers assume that they can hire 5 engineers from India, because they are less expensive than those from the US, they will see a great increase in unanticipated costs when they finally realize that the government/developer will not approve them. Therefore by being aware of these intricacies the management team was able to produce an estimate of the labor costs that was quite accurate.

### **1.4. Jumping the Gap & Placement of Handrail – Perception of Safety Risks**

In addition to being aware of the host culture it is important to be aware of all of the various cultures on a project. When the supervisor that instructed the Indian worker to jump the gap was confronted, he stated that he thought there was nothing wrong with what he had done. The informant then spoke with the supervisor's manager, who agreed with the supervisor. Similarly, there were many viewpoints to its necessity and placement of a handrail. However, in both instances, they all admitted that if a worker fell it could have shut the project down and that would not have been good. This example shows that it is important to understand that different cultures have different sentiments with regards to many factors, including safety, and that addressing these differences at the onset of the project, can greatly lessen the number of accidents and the loss of productivity that would occur during the investigation process.

## **2. FLEXIBILITY & ADAPTABILITY**

Flexibility and Adaptability were the most commonly referenced qualities mentioned by the informants as necessary to achieve successful on these multi-cultural mega-projects. In a world where the rules and goals of the game are perpetually changing, the ability to adjust quickly can be the sole determinate of a projects success.

### **2.1. Government Requirement: Requiring Specific Hiring & Imposing Mourning Periods**

Although the government may require certain elements at the onset of a project, they always have the ability to impose whatever restrictions they want. Therefore project participants should be prepared and have the ability to accommodate this uncertainty. On the projects studied, no one knew that the sheik was going to die, nobody could have anticipated the mourning period that was mandated, but just as you never know how many severe weather days there will be each year, when doing projects in countries where the government has increased authority over both public and private projects it is important to have systems in place that allow for the flexibility that is needed.

### **2.2. Project Organization: Roles & Positions**

With most construction projects the resources needed at the beginning of a project are not the same as at the peak of construction, with a demand for resources following something of a shifted bell curve. The result of this is that in the beginning, when there are typically fewer project participants, it is common to have a smaller organizational structure and the expertise of the person managing the project is often not given the proper attention. However, as the resources needed grow and project team expands, changes often need to be made to maximize efficiency and maintain schedule. Therefore, the need for these organizational structures to change and evolve throughout the course of the project requires that many of the roles be easily transferable; hence the flexibility and adaptability of the project participants to these changes is critical.

### **3. DEVELOP & BUILD RELATIONSHIPS**

Relationships are the key. They are difficult to build and easy to destroy. They require constant and consistent attention, but when maintained properly they can prevent, mitigate and resolve challenges. Some challenges that were encountered on the project that could have benefited greatly from increased relationships between project participants are described below.

#### **3.1. Bridge Rebuild**

The bridge that had to be rebuilt is one of the most obvious examples of a situation in which the lack of relationships and communication between the project participants resulted in the construction of a bridge that had to be demolished. If the construction managers had built relationships with the sales office and been in cordial conversation with them, when the sales office realized the error they had made there would be an increased chance that they would go to their project participant and “partner,” the construction managers. The managers then could have looked at means to resolve the problem other than to build a bridge and tear it down a couple weeks later.

#### **3.2. CM Circumvented Solution**

Similar to when the Sales office circumvented the construction managers in the orientation of the bridge, the subcontractors often circumvent the construction managers and go directly to the developer/owner. If the relationship between the developer and the construction manager were more fully developed to allow them CM the authority to meet the needs of the subcontractors and if the relationship between the subs and CM were also more fully developed, then the end result could have been that the subs would have seen their needs met a lot quicker and the CM’s role may not have been so frequently undermined.

### **4. NEUTRAL PARTY**

The neutral party is an entity that is capable of performing successful conflict resolution on the grounds that all project participants respect the entity and feel that it is honestly concerned for their best interest. This party could exist under many names, but on the projects reviewed it was the “Safety Team.” In order to be successful this entity must demonstrate to all parties that it is concerned for their best interest and therefore there is a transition period at the beginning of the project in which the neutral party must gain the trust of all project participants. Once this is achieved the neutral party is capable of resolving great conflicts based on the relationships it has created.

#### **4.1. No common language – Dropping the Hammer**

In the case where one worker accidentally dropped a hammer, “The only people to stop them from fighting were the safety team.” The only reason the safety team was able to get them to put down their weapons was because they spoke both languages and had the trust of the workers. They simply placed three cars between the two groups. Hence, the groups would have to go through this neutral party first, and they would not do that, both for their respect for them and fear of their authority.

### **5. CULTURAL MATCHING**

Cultural Matching is the idea that a construction manager can take advantage of its diverse employee base in order to better resolve conflicts with project participants from different background. In essence, the construction manager “matches” the in-house employees with project participants with similar backgrounds, cultures, native languages, etc. in order to reduce cross-cultural communication and in order to more efficiently achieve whatever goals the company is pursuing.

### **5.1. Subcontractor's Poor Performance/Communication**

“When I see that I need to talk to a contractor that I cannot really communicate with...I can have another person who I think can relate better with them, deal with them. And that I am finding is very useful.” This informant has employed the method of cultural matching. When he needs to resolve an issue with a contractor he pairs the contractor with an employee in his firm who has a similar cultural, educational or religious background as the contractor. He has taken advantage of the diversity at the CM firm and allowed it to assist in conflict resolution. Because the CM firm employs managers from U.S.A., U.K., Middle East, India, etc., it is possible, in most cases, to provide a “culturally appropriate” match for the resolution of conflicts.

## **6. DEPORTATION**

The final strategy that was identified by the informants to resolve conflicts was the threat of deportation, commonly referred to as deportation. Although this always exists as a possibility, it is not recommended unless the situations are severe, as it is detrimental to the relationships between project participants that have been developed.

### **Labor Fights**

I asked one informant how they minimized these labor fights and he respond “generally, subcontractors will pick one nationality; they don’t generally mix them,” in the event that a contractor needs to hire another crew of workers, they would try not to commingle the different groups. However, sometimes they are forced to mix the different groups, when this happens often there is an increase in the fighting onsite. Hence, the threat of deportation is employed. If a worker is deported he has possibly ruined the chance of his family’s survival. In the UAE if you are deported you typically are never allowed to return to the country. The fear of deportation in the UAE is the basis for why everyone feels so safe there -- the international population understands the government is completely unforgiving of illegal or violent activity. Hence, as a last resort the strategy of deportation can be employed.

## **VI RECOMMENDATIONS**

### **1. DOCUMENTATION OF LESSONS LEARNED AND SUCCESSFUL STRATEGIES**

The single most important recommendation with regards to preventing and resolving challenges on the projects studied is to emphasize the need for proper documentation of lessons learned and strategies incorporated. A couple informants mentioned that although some challenges were unique to the project, many were not new and had been seen once or twice or several times before. The challenges that they were referring to were issues that could have easily been resolved by taking certain steps at the beginning of the project, yet instead, because these challenges and their respective solutions were not available to the team, they had to relearn solutions that had been already identified on previous projects. Hence, although it may seem simplistic, the strategy that would be most influential to a projects success is to document and learn from the mistakes that are made or else the team and project participants will just continue down the same path, re-encountering and re-solving the same challenges over and over again.

### **2. ENCOURAGE OWNERS TO INVEST MORE TIME IN PRE-PLANNING**

Although the owners may have their reasons for pushing the commencement of the project, it is important to sit down with them and discuss the financial incentives to pre-planning. It is a common misconception in this part of the world, that time is most important on these projects and that the reason that developers push the projects to start, even before proper planning is done, is because the schedule is seen as the most critical element. However true it may be, that schedule is important; its importance is only stressed because of the monetary benefit that finishing a job early offers. Hence, it is not that money is not important, but quite contrarily, it is the driving factor. Therefore if the management team were to sit down with the owner and demonstrate to them how starting a month later could potentially reduce their construction costs and their construction schedule simultaneously in a way that would make them better off financially, then maybe they would invest more time in conceptual design and pre-planning.

### **3. INCORPORATE TEAM BUILDING ACTIVITIES PRIOR TO COMMENCEMENT OF OPERATIONS**

Many informants noted that within the construction management teams, at the beginning of the project, there was a great deal of conflict between the different project participants. These participants, coming from many different backgrounds, placed different degrees of importance on many issues – one being “time”. After some time they realized that the Americans were not trying “to step all over everyone’s toes,” but rather it was just their management style – to aggressively push a project. This was a tough transition for the management team and it reduced their efficiency during the first few months of working together. Once they learned more about one another’s backgrounds and cultures they became a lot more understanding towards their different values.

A couple informants noted that this typically happens in the beginning stages of most of the CM’s projects. However, if at the onset of the project the CM chose to incorporate activities that encouraged team building and the opportunity to learn about the backgrounds of the different project participants, they could potentially reduce this difficult transition period substantially.

### **4. PROGRAM ORIENTED INCENTIVES**

In addition to the challenges within one of the construction manager’s teams there was much jockeying and competition between the multiple construction managers. Although they were all interested in the success of the project, they were more focused on their individual success, to an extent they were overly competitive towards one another. When a

project is large and requires a great deal of coordination between various project participants and they are rallying to be the best, the outcome is usually not the most beneficial for the overall project. Therefore, incorporating incentives that encourage these project participants to work together and work as a team could greatly improve the relationships between the project participants, as well as improve the ability for the team to achieve greater success for the overall project.

#### **5. ABILITY TO FORECAST & ANTICIPATE CHANGES**

Commencing a project with a poorly defined or non-existent Master Plan should signal to the project participants their need to be able to accommodate the unknown. They should expect many scope changes and attempt to perform their duties in a way that this accommodation can be easily made. For example, there is no reason to buy all of the blocks needed for the entire project years before they are needed if managers think there is some uncertainty in the need for them. This can be seen in the increase in the number of villas on one of the project studied (from 1,000 to 2,700). When this occurred the infrastructure had to greatly increase. Hence, since much of this infrastructure was being routed through a bridge, this could potentially create a substantial increase in costs. However, if when the bridge was being constructed the openings dimensions, where the utilities were being routed, were designed to accommodate a potential change, the result of such a change would have less of an adverse effect on the project. Hence project participants' ability to foresee and anticipate potential changes are critical and will help mitigate the adverse effects of numerous scope changes.

#### **6. INCORPORATE BI-LINGUAL PERSONNEL IN GENERAL CONDITIONS**

Although the safety team, for a period of time, was able to resolve a lot of the conflicts between workers, once they had trained the safety personnel and greatly reduced the accidents on site, they were removed from the project. The owner felt that they had done their job and therefore did not want to pay for them to stay on-site. However, even though their presence alone greatly increased safety on the project there were many other benefits that the safety team offered (i.e. neutral party, etc.). Therefore, I think that in addition to having a safety team the CM should employ bi-lingual superintendents or other personnel to work in various locations all over the site and maintain coordination between the various different crews. They would play a significant role in conflict resolution, and have the ability to call in the safety team/neutral party as a resource as necessary. By doing this the additional benefits that the safety team provided would be inherent in the organizational structure of the construction manager.