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Deloitte GCC Powers of Construction 2014

Are you ready for the recovery?

In the Middle East since 1926

Contents

Foreword
Review and outlook

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If we consider the fundamentals of the construction industry, it is certainly easy to conclude that there is a lot of positive sentiment and more recently positive developments in awarding some mega and social infrastructure projects across key markets. Governments' spending is creating a positive comeback for construction, but as we all know this is dependent on oil revenues which need to be maintained above a break-even margin to allow the spending to continue. The mass social infrastructure spends are a main priority for most governments as a measure to curb any potential negative government sentiment and instability which could have occurred as a knock-on effect of the surrounding turmoil the wider region has encountered over the past couple of years.

While oil prices provide healthy margins, strong population growth continues, and many major events draw nearer and long-term plans for development strategies to take shape, we will see the construction industry confident of growth for the foreseeable future. The GCC construction industry is now valued at over US$1.3T, with US$935B in execution including long-term megaprojects, US$81B out to tender, US$211B in design phases and US$136B under study according to MEED. These are levels which are getting close to the pre-global recession years. The construction industry therefore seems to be out of the recession and into recovery mode. The big question is: "Are you ready for the construction recovery?"

Looking back

Over the last year the optimism within the GCC construction market has risen considerably and rightly so. The GCC saw US$70B worth of construction projects completed in 2013 with this number predicted to rise to US$83.5B in the current year according to Ventures ME. Residential developments accounted for just over 43% of total completed projects, which is expected due to the region's rapid population growth and thus the governments' increased social infrastructure spends. The UAE and the KSA ranked in the top two positions for all sectors apart from education and healthcare where Qatar held the top spot in both.

During 2013, Dubai saw over 500 building projects launched, which is a massive number for one city alone. This number also does not take into account Expo 2020 which was only announced in late November 2013. Since the celebrations of Dubai winning Expo 2020, we have seen renewed confidence in the already improving construction industry. In a market that relies upon confidence and optimism, this is the much needed stimulus to create momentum for a renewed "development and economic cycle." The largest ever Expo site is set to be built in the Jebel Ali (DWC) area at a total cost of between US$2B to US$4B. The secondary infrastructure spend will be upwards of US$8B, and will include construction opportunities in the transport, hospitality, retail and commercial sectors.

Dubai's Roads and Transport Authority (RTA) has announced that it will fast-track a US$1.36B expansion of the Dubai Metro's Red Line to connect to the Dubai World Central. Emaar Properties announced that it has signed a memorandum of understanding with Dubai World Central to develop a massive (13.63 million sqm) golf centered residential estate adjacent to the area surrounding the Expo 2020 site. These are the first of many announcements regarding large-scale projects being planned in the wake of the Expo win. Tourism and Hospitality have been the key focus for the legacy after Expo, as we see Emirates Airlines grow from strength to strength and more GCC residents continue to invest in the UAE as a safe haven.

With all this extra infrastructure spend, jobs will be generated with some estimates claiming 30% of the potential 300,000 jobs created by Expo 2020 is expected to be in the construction sector alone. The government has also announced that all new and existing construction projects are going to be fast-tracked to be ready for 2020. The demand for skills and resources will of course increase and we would hope that a well-planned and phased development strategy will prevent the price for these resources and for talent from becoming disproportionately expensive.

Meanwhile in Saudi Arabia 2013, yielded the largest ever value of construction contracts awarded during a

calendar year. This was largely due to the US$22.5B awarded in three separate contracts on the Riyadh Metro Project. Because of this, transportation accounted for the largest proportion of contracts awarded in terms of value with power coming in a distant second. This clearly shows that the Saudi government still considers capital expenditure to be a major priority.

Looking forward

Looking to 2014 and further ahead it seems like government-led initiatives will continue to drive growth in the GCC construction sector as regional governments continue to focus on social infrastructure projects. The rail industry alone in the GCC could create 50,000 jobs with most nations creating or upgrading their rail networks. These consist of the multi-nation interconnected railway network along with metro and tram projects of which there are many, including the Riyadh Metro project, Etihad Rail, Qatar Rail and the upgrades to the Dubai metro.

According to a survey performed by Pinsent Masons, 90% of companies perceived greater optimism in the market in 2013, with 77% reporting a healthier order book for the next 12 months relative to the previous year and 40% expecting their order books to increase by over 10%. This emphasizes the optimism currently in the market, but with mass optimism there needs to be caution, as we have all learnt from the past.

UAE

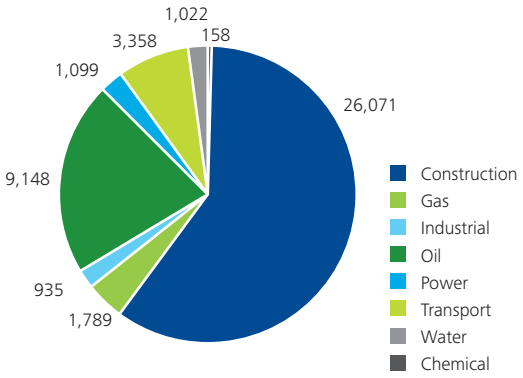
The UAE is seeing renewed development, with the pick-up in the Dubai real estate and tourism markets set to be reinforced by Dubai winning the right to host Expo 2020. Figures from the Department of Economic Development reveal the GDP of Dubai will grow 4.7% in 2014, with the main drivers of the economy being tourism, trade, transportation and real estate. The UAE market is on track to reach the levels of investment last seen before the recession; it is also good to see that there are US$12B of previously stalled projects within the country which have now resumed construction. Looking forward to Expo 2020 and the anticipated spend mentioned previously, the government has now installed a charge

The UAE is seeing renewed development, with the pick-up in the Dubai real estate and tourism markets set to be reinforced by Dubai winning the right to host Expo 2020

which will be applicable to guests staying in all types of holiday accommodation. The revenue received from this "tourism levy" will be used by the government to finance its significant capital expenditure.

Abu Dhabi is set to be transformed by US$100B worth of construction projects, which include housing, education, transport and other developments. As stated by Fahad Al Raqbani, director general of Abu Dhabi Council for Economic Development, "These projects will emphasize the economic competitiveness of the Emirate, empower the role of the private sector and sustain the local economy's growth in a manner that will lead to accomplishing the objectives of the economic vision 2030."

UAE: Value (US$ Million) of contract awards by sector (all projects 2013)



Source: MEED Projects

According to MEED Projects, KSA still leads the way in the region with over US$1T of projects either planned or underway

According to Jones Lang LaSalle, around 22,000 new homes were completed in Abu Dhabi in the last three months of 2013 with another 22,000 expected to be handed over this year. In the transport sector, US$2.9B will be invested in developing a 131km metro system in Abu Dhabi to accelerate the flow of traffic and keep pace with the growing population. The other big rail project is Etihad Rail, the US$10.8B scheme that will link Dubai, Abu Dhabi and the northern emirates, and the ports of Khalifa and Jebel Ali. Etihad Rail will eventually link up with the planned 2,177km-long GCC railway. There will also be 246km of new major roads, including a 62km highway connecting Dubai and Abu Dhabi, scheduled for completion in 2017.

There are, however, a few potential challenges for the construction industry within the UAE. These include the impact of the increased competition within the marketplace from international contractors trying to get their piece of the construction pie, and this could have a negative effect on the local contractor's bottom line as it doesn't look like the pie is growing at the same rate as the influx of added competition. Another risk is the lack of available skilled labor as Qatar, KSA and UAE compete for these resources – all potentially impacting profitability and potentially also quality due to the lack of resources.

KSA

According to MEED Projects, KSA still leads the way in the region with over US$1T of projects either planned or underway. The residential sector accounts for just under 30% of that market spend, while healthcare comes in second at 20% and education at 10%. This again shows that the social infrastructure spend by the Kingdom is a main priority. A large proportion of the high-value construction contracts awarded in the Kingdom in the last three years have been in the transport sector, particularly aviation and rail. These include the King Abdulaziz International Airport in Jeddah and the Riyadh Metro Project. The Kingdom is also set to award further substantial contracts in the transport sector over the next five years, with project management contracts tendered for both the US$7B Saudi Landbridge rail project and the estimated US$10B expansion of Riyadh's King Khalid International Airport.

The Kingdom also needs 2 million new homes by the end of 2014 to keep up with a population that's quadrupled over 40 years. In March 2011, King Abdullah bin Abdulaziz al-Saud pledged to invest US$70B in building new homes for Saudi nationals. Last year, the Kingdom's Housing Ministry commissioned US$1.1B of housing projects in seven cities including Jeddah, Dammam and Tabuk as part of King Abdullah's initiative to construct 500,000 homes.

The biggest concern in KSA due to the massive scale of construction is the reality of input cost inflation and the possibility of project delays because of the lack of availability of resources including construction materials and labor. Most of the region's cement industries are already operating at full capacity, with sizeable clinker imports being seen in Saudi Arabia. Another labor issue is the implementation of the Saudization (Nitaqat) program, which we saw heavily enforced at the end of last year and which could see up to 2 million* leave the Kingdom. Unsurprisingly, this has had a disproportionate effect on the construction industry, mainly because of shortages of local unskilled labor and through higher input costs.

Qatar

In Qatar, the government is preparing to spend in excess of US$70B, mainly on infrastructure and transport but also on hotels and stadia, in anticipation of the 2022 FIFA World Cup and Qatar Vision 2030. The Minister of Finance allocated US$24B to key projects, an increase of 16% from 2013/14; this is also the biggest infrastructure budget in the country's history. The Finance Minister also

mentioned that he expects spending on projects to reach US$182B over the next five years. BMI also has a positive outlook and expects the infrastructure sector in Qatar to continue to have double digit growth over the coming year.

Qatar, in common with the other GCC powerhouses, continues to focus on improving its social infrastructure. Funds have also been set aside for completing the Hamad International Airport, the New Doha Port Project, the rail and metro projects, and the roads program. A major part of the spending will be on the Qatar Rail project, which is expected to cost around US$45B to build.

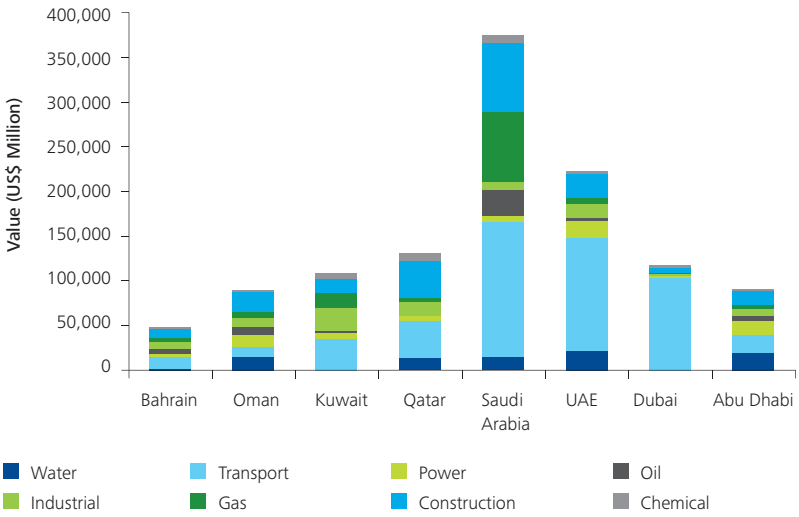
Lusail City has started receiving its first residents following the completion of the bulk of its infrastructure and the town will be fully ready at the end of 2014 according to Qatari Diar. When completed, it is designed to have over 200,000 people living within it and have a value of around US$45B.

Again the major cause for concern is the rising construction costs, from materials to labor. The Qatari government is aiming to keep these costs in check by taking a hands-on approach. It is looking to regulate commodities by creating a single buying source to import into the country run by a government subsidiary which will then sell on to the contractors. Meanwhile, the government has attempted to increase the supply of certain commodities by raising production levels within the country again by creating government subsidiaries which own these commodities and can stockpile them before prices escalate.

Rest of the GCC

Work is picking up in Kuwait and Bahrain, both of which have had their own problems over the last few years, but it is Oman that is the one to watch outside UAE, KSA and Qatar looking forward. Oman has budgeted for continued strong spending on its infrastructure and tourism sectors. The country announced US$15.5B of spending on rail at the end of 2013 as well as the construction of a new town in Duqm.

GCC: Value of projects 2014 to 2020 (all sectors)



Source: MEED Projects

Among the pan-GCC projects, the GCC rail network is by far the largest project with a combined value close to US$200B. Construction of the network, which will link Oman in the south to Kuwait in the north through the UAE, Qatar, Bahrain and Saudi Arabia, is scheduled to be completed by 2018. Meanwhile, the contract for a new causeway linking Saudi Arabia and Bahrain is scheduled to be completed in 2014. When completed, these should assist in regional and international trade, with the use of a world-class logistics network connecting all GCC nations.

So make sure you are ready for the upturn and do not forget the lessons of the past – conduct feasibility studies to support the business case for the spend, and control the costs through efficient and effective design to ensure the assets that will be built to provide a sensible return on investment for the end users. It is only in so doing that we can create a sustainable market place with world-class infrastructure and social infrastructure to support the local populations.

* http://www.theguardian.com/world/2013/nov/29/saudi-arabia-foreign-labour-crackdown-migrants


DOHA CULTURAL FORUM


H&M

Msheireb Properties interview

Developing communities which encourage social interaction, respect for culture and achieve sustainable living

Msheireb Properties is a real estate company and a subsidiary of Qatar Foundation. The company was established as a commercial venture to support the Foundation's aims and the Qatar National Vision 2030 that aims to develop Qatar into an advanced society capable of sustaining its development and providing a high standard of living for all of its people. Its mission is to change the way people think about urban living and improve their overall quality of life, through innovations that encourage social interaction, respect for culture, and greater care for the environment. Msheireb Properties spent three years researching Qatari architecture and numerous approaches to urban planning all over the world with the most respected experts in the industry – in order to realize an architectural language rooted in the best of the past that may be preserved for and by future generations.

The company is guided by the progressive vision of Her Highness Sheikha Moza bint Nasser. Her Highness established the company with a mandate to address a gap in the architectural history of Qatar and rediscover a unique form of Qatari urban development. Msheireb Properties aims to understand and implement how the best of the past and modern, innovative technologies and thinking can blend to create a new architectural language in Qatar that is unique to the region.

The company's name, Msheireb, means 'a place to drink water' (in Arabic) and is the historical name of the downtown area of Doha.

We spoke with the Chief Executive Officer of Msheireb Properties, Eng. Abdulla Hassan Al–Mehshadi, who shared his views on their vision, new projects and the future of development in Qatar.

Msheireb Downtown Doha is the flagship development of Msheireb Properties that aims to revive, regenerate and conserve the historical downtown of the Qatari capital, Doha. The US$5.5B project was launched in 2010 in partnership with global industry leaders and experts, to align the architectural learnings of the past with the latest in eco-friendly technologies that pays tribute to Qatar's tradition and embraces the future. To realize a language that is relevant, enriching and truly Qatari.

Msheireb Downtown Doha ("MDD") will be the first of its kind complete smart city in the region, incorporating state-of-the-art technologies to create a better living environment for all. It will feature extensive retail outlets including a mall, designed to transform the area into an unparalleled retail, leisure and entertainment hub. The Galleria is a closed, air-conditioned shopping mall which will comprise approximately 100 stores set across four levels of shopping and entertainment space. Spanning approximately 48,000 square meters of gross leasable space, the Galleria forms a major part of the retail offering at MDD. The Galleria will comprise an anchor supermarket on the lower ground floor, a multi-retail space and a six-screen cinema. The mall will also feature a dedicated entertainment zone for young audiences, involving both educational and physical activities where children of all ages will be entertained in a safe and friendly environment. MDD is set to create a location where all sections of the population can enjoy themselves; the development features a variety of other retail offerings which will not only attract visitors and tourists, but will also serve the thriving community which will soon be living and working in MDD. Sikkat Al Wadi, the development's largest pedestrian street, running the entire length of Downtown Doha will also provide a wide range of shopping options, including flagship stores in addition to fashion boutiques, restaurants, and cafes. With a special focus on features

"The Msheireb project creates a true tangible link between vernacular, tradition and the future of construction in the Region. The way in which Msheireb took on board the understanding of historical placement of buildings and façade designs to create passive cooled environments is a testament to the Qatari vision to deliver in excellence. The needs of a modern mixed use development often has no place for the culture of the past, but Msheireb has shown that the vernacular past of the likes of Souq Waqif can be translated directly into the modern context of a mixed use city and create a successful fusion between the old and the new and set a precedence of sustainable excellence that has been seen as a catalyst for sincere design. It is truly a remarkable effort by Qatar and the Msheireb Team"

Nigel Eckersall

that add to the safety and convenience of all including the disabled, the project has been designed to accommodate the entire community.

Unique to the Msheireb development is its blend of casual and high street shopping, stylish plazas and community spaces. It will also host the region`s largest shaded open-air square, Al Baraha, a family destination with restaurants and cafes featuring events and large scale shows, with special cooling devices 'cool pools', to refresh visitors at the hottest times of the year. Pedestrian friendly access from the main streets of the city and an underpass connection to Souk Waqif will further enhance the shopping experience making it a fun and enjoyable trip for all.

Mr Al– Mehshadi confirmed that for Msheireb Properties the key priority and the definitive target is to make sure that project phases One through Three are completed by 2016. Thirty percent of the project will be complete by the end of 2014. Discussing the usual challenges of managing changes in a project this vast, we asked Mr Al–Mehshadi how he has controlled the design changes and variations to the plans to ensure these do not disrupt or delay the project significantly. He replied that their "focus was to ensure that the designs were complete and therefore any changes that occur are only those that are vital due to technological or critical changes required in the project and as such they have minimized the changes which could disrupt the work plan and affect overall schedules."

Complementing this array of exceptional retail offerings will be the project's efficiently planned infrastructure and transport system. Host to Qatar's largest metro station, Msheireb has an integrated road network connecting the Downtown area to the rest of the city. Retail will greatly benefit from parking provisions of which there will be 11,000 spaces within three to five underground basement levels, spanning the entire length of the development, a first of its kind allowing the public to move freely across this vast car park space from one end of the development to the others. To maximize the use of space, MDD plans to install a number of power stations underground and it recently energized a 66KV power plant, which is another first for Qatar. All utilities are completed as planned to date with the District Cooling Plant commissioned as well.

Adopting advanced clean technology such as solar energy in addition to traditional methods of climate management is a hallmark of the Msheireb project

The photovoltaic* solar system in MDD is an advanced PV system installed in buildings within phase 1A of the project. The installation of the solar panels reflects Msheireb Properties' ongoing commitment to sustainable development in line with Qatar's National Vision for 2030. The roof-mounted photovoltaic modules will supply a portion of the electricity needs of the buildings within Phase 1 of this landmark development.

Adopting advanced clean technology such as solar energy in addition to traditional methods of climate management is a hallmark of the Msheireb project which, on completion, will have one of the largest concentrations of LEED-certified (US Green Building Council) buildings in the world. "When MDD is complete, the project will comprise 5,200 solar panels across a total of 8,400 square meters of onsite energy production in the form of both electricity and hot water.

*Photovoltaics (PV) is a method of generating electrical power by converting solar radiation into direct current electricity using semiconductors that exhibit the photovoltaic effect.

Among the concerns is the large demand for labor, both skilled and unskilled, as the development in Qatar gains momentum and increases in the lead-up to the FIFA World Cup 2022 and Qatar Vision 2030

Each year, the solar PV system will reduce total greenhouse gas emissions by 568 metric tons which is equivalent to 241,000 liters of gasoline consumed", commented Al–Mehshadi.

The six consortiums currently building MDD have been specifically chosen by Msheireb after a thorough assessment of the contractors' expertise, financial stability and technical capability, which was extensively investigated by Msheireb prior to finalizing the tender process. An important aspect of each consortium's bid was an assessment of the consortium's deep understanding of how to operate in Qatar, a critical success factor for the winning bids. Msheireb also insisted on all consortiums being a combination of a local Qatar contractor and an international contractor. This helped ensure that the consortium represented a symbiotic relationship where knowledge transfer is key, helping local contractors learn international processes and systems that will benefit the Qatari construction industry, while the international contractors learn the nuances of the construction sector within Qatar. "A new measure put in place by the Government of Qatar was a requirement for each entity in the consortium to sign a 100% performance bond, not the usual performance bond signed by all and shared as a joint liability – here each consortium partner takes a 100% performance bond risk for the total project value. This is a progressive step in challenging the local contractors to 'step up' to the same level as their international counterparts, with a significant risk then acting as the incentive to ensure cooperation between the consortium parties to deliver on budget and on schedule. This was a strategic move by the Government to offer international contractors a certain level of comfort and assurance in expecting the local contractors to be fully committed to the project, financially and otherwise."

Looking at the medium-term horizon, Mr Al– Mehshadi confirms that there will be an influx of international contractors and consultants, and that the concerns over Qatar's vast development requirements have been mitigated by a significant investment in planning for Qatar's construction boom. Among the concerns is the large demand for labor, both skilled and unskilled, as the development in Qatar gains momentum and increases in the lead-up to the FIFA World Cup 2022 and Qatar Vision 2030. He says that the authorities are proactively exploring various options to be able to ease the requirements and restrictions around visas to help address the potential lack of labor in the future. At the peak of construction at MDD there will be 45,000 construction workers on site.

A further concern was around the roads, ports and airports being ready and available to cope with the requirements that this vast construction phase will demand. "There are regular meetings held between all these stakeholders to ensure that the port and the first phase of the airport will be ready when these initial projects will peak to cope with the sourcing requirements and getting the required materials to the projects on time."

As with every construction boom, the cost of materials is a concern, specifically around the cost escalation of the primary commodities. As such the Qatar Government has created two additional cement companies and also Qatar Steel, which will create a single source for distributors to buy from and hence control the cost of these primary commodities; in the long term, this will ensure that a viable ROI is generated on these investments.

All these measures should give International players confidence to operate in Qatar and look at it as a promising and viable destination for conducting business.

With Msheireb Downtown Doha, the company is developing a blueprint for sustainable urban regeneration, and believes in sharing the knowledge, experience and best practices to benefit the industry. MDD expects to fulfill its reputation to be a reliable developer that delivers high quality, sustainable projects on time.

Abdulla Hassan Al-Mehshadi
Chief Executive Officer
Msheireb Properties

Nigel Eckersall
Senior Design Manager
Shapoorji Pallonji

Interviewed by:
Cynthia Corby
Partner
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Industry Leader
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The Qatar Government has created two additional cement companies and also Qatar Steel, which will create a single source for distributors to buy from and hence control the cost of these primary commodities

Project factsheet		
Project cost	US$5.5B (QR 20B)	
Land area	310,000 square metres (76 acres)	
Project name	Msheireb: means 'a place to drink water' in Arabic	
Typology	**GFA (SqM)**	**Percentage (%)**
Commercial & governmental offices	280,000	36.8%
Retail	94,000	12.4%
Hotel	117,000	15.4%
Residential	222,000	29.2%
Community, cultural, school, mosques, museum	47,000	6.2%
Total	**760,000**	**100.00%**

Arabtec interview
A market overview: opportunities and challenges

Arabtec Holding is the biggest listed construction contractor in the UAE which has just recorded a triple-digit growth rate (149%) in net income for 2013 and its shares are at the highest level since August 2008. We speak to the Managing Director, Mr. Hassan Ismaik, about this rapidly expanding group, which has undergone significant change since March 2013, about the opportunities and challenges that lie ahead for Arabtec and the construction industry.

The construction industry has seen a marked increase in large-scale projects in the GCC and wider Middle East region recently. This can be attributed to a return of confidence following the economic downturn and an increase in demand, particularly for residential and commercial properties, mega infrastructure projects in road, rail and aviation sectors, social infrastructure, and hydrocarbon infrastructure. There is increased confidence in the UAE economy, with the trade, logistics, tourism and retail sectors delivering increased growth. This will be supported in the longer-term as Dubai moves to deliver the Expo 2020 and as Abu Dhabi executes on its well-published multi-billion-dollar investment program to deliver the Abu Dhabi 2030 plan.

New Central Bank regulations, including the mortgage limit of 85 percent of a first property's value for UAE nationals and 75 percent for non-nationals, are part of the measures put in place by the UAE government to reduce the risk of a speculative bubble, giving long-term property investors and end-users greater comfort. Taking all this into account, it is evident that a number of businesses have an optimistic view on the current market backdrop which market participants view as excellent prospects for growth, with continued government investment and commitment from the private sector.

With this positive outlook for the industry, Arabtec Holdings is diversifying its business through various partnerships and joint ventures in critical sectors in the industry. The oil and gas sector will continue to grow and we have made good progress on expanding into this sector with acquisitions of subsidiaries such as Target Engineering, which has extensive experience in this area. We have also formed a joint venture with Samsung, enabling us to take on mega oil and gas projects. This is part of our ongoing growth strategy into other sectors, which includes infrastructure. Our credentials and capability in this regulated marketed have been strengthened through the agreement to operate a joint venture with GS Engineering and Construction. This joint venture strengthens our capability in heavy infrastructure sectors, as well as oil and gas.

The critical success factors for operating any joint venture in this region rely on Arabtec's extensive local knowledge and firm links with stakeholders

The Middle East construction market has a perception of being a difficult market to participate in, which is unjustly so. We have a longstanding track record in the region, and our backlog has more than doubled in the last 18 months. We understand what it takes to operate in the region, and where we are looking to build other capabilities we partner with established global players to deliver complex projects to the highest possible standard. The Middle East presents a wealth of opportunities, particularly in light of the recent growth witnessed in the GCC. This is why our growth strategy continues to gain momentum in critical growth sectors, such as oil and gas and infrastructure.

In 2013, Arabtec set out its strategy for growth by expanding its business in segments of the market that complement its strong presence in the areas of high-rise buildings and airports. We are expanding our footprint in growth and complex higher-margin construction sectors such as oil and gas, infrastructure and power. In order to achieve this, the group successfully raised US$650M through one of the Middle East's largest ever rights issues that was three times oversubscribed. Following on from the rights issue, two separate joint venture agreements were formed with Samsung Engineering and GS Engineering as mentioned above. These strategic joint ventures with Samsung and GS Engineering will enable us provide more high-quality, complex projects by enhancing our skills and expertise in all aspects of the construction process. We continually look for other potential joint venture partners to help build our expertise in other areas.

The critical success factors for operating any joint venture in this region rely on Arabtec's extensive local knowledge and firm links with stakeholders. The success of these joint ventures can also be measured by our diversification into new higher-margin sectors such as oil and gas, power, and infrastructure, increasing Arabtec's skills and expertise whilst keeping our roots firmly in construction.

In order to strengthen its drive into new higher-margin sectors, Arabtec acquired the remaining stakes of two other important subsidiaries, Target Engineering and Emirates Falcon Electromechanical Company (EFECO).

Since the remaining stakes were acquired, both companies have been awarded substantial contracts across a number of projects. This demonstrates the value that Arabtec has been able to add since the transactions.

Of course there are challenges that are unique to this region. The Middle East has many complex projects and there is significant construction activity happening across the region. Scaling up the workforce to deliver on the project pipeline is one of the most interesting challenges we have. Arabtec's capabilities and know-how in delivering complex projects is proven and stems from decades of experience and understanding – it is how we transition this know-how to a larger work force to deliver consistently on a much larger scale that will form a primary focus area for us.

To prepare for our growth we need talented people. We recently announced that we will be hiring thousands of people from across the UAE, GCC and MENA region. This drive will target particularly high caliber and ambitious nationals who express a desire to contribute to their country's growth and development by joining Arabtec. Arabtec Holding is fully focused on ensuring it maintains a strong, enthusiastic workforce. As one of the higher payers in the construction industry in the UAE, Arabtec continues to ensure working conditions are of the utmost high standard for its employees. Arabtec Holding's growth and expansion relies on sourcing and retaining a world-class workforce. Arabtec has recently established a new HR division specifically for laborers. In addition, it has implemented new measures in order to raise the working and living conditions for laborers.

Arabtec is very keen to increase its international presence. The company has well-established operations across the GCC region and now operates further afield in Egypt, Jordan, Kazakhstan, Syria, Saudi Arabia, Palestine and Russia. We are engaged in new opportunities in markets that include Iraq, Algeria and the Balkans. We have announced our intention to open a regional headquarters in Belgrade, capital of Serbia, to drive Arabtec's expansion into the Balkan region. We expect our regional headquarters will be operational in

As one of the higher payers in the construction industry in the UAE, Arabtec continues to ensure working conditions are of the utmost high standard for its employees

Q2 2014, and will serve as a launch pad for Arabtec's planned expansion in the wider Balkan region. Arabtec is already in advanced discussions with developers regarding projects in the Balkan region where there are significant opportunities for the group that are fully-aligned to our growth strategy.

Additionally, we are in the process of opening an office in the Iraqi capital, Baghdad, to capitalize on the country's high potential, particularly in oil and gas and infrastructure. The office will serve as a platform for expansion by Arabtec Holding's joint ventures and subsidiaries, in what is expected to become the region's most lucrative construction market. Arabtec is already in advanced discussions with a number of clients in Iraq for large-scale projects in its target sectors. A major drive behind Arabtec Construction's expansion into Iraq is to pave the way for our newly formed joint venture with Samsung Engineering and the soon to be completed joint venture with GS Engineering and Construction to tap the huge potential the Iraqi market presents in EPC and infrastructure sectors.

Arabtec is well placed to deliver on its international expansion and will only undertake projects that are commercially profitable and align with our growth strategy. We are a strategic company and undertake projects when we know we have sufficient capital and confirmation of funding from investors, as well as the ability to recruit the necessary staff with the requisite skills to deliver the project.

The GCC's infrastructure sector is one of the key drivers of long-term economic growth in the region. Over the

next six years, over US$600B of investment is planned in infrastructure projects in the GCC, of which over US$220B will be in rail infrastructure projects. Social infrastructure, such as hospitals and education facilities, as well as physical infrastructure such as airports, are vital for GCC countries to develop. Arabtec has participated in this type of social infrastructure, such as the joint venture with Greece's Terna S.A, to build the Aldara Hospital and Medical Center, a 105-bed hospital in the Saudi Arabian capital, Riyadh.

In addition Arabtec recently announced a joint venture through its subsidiary, EFECO, to carry out mechanical, electrical, and plumbing work at the new Abu Dhabi International Airport Midfield Terminal Building (MTB).

Government investment is an indicator that the UAE continues to offer excellent prospects for growth. The Government of Abu Dhabi announced in 2013 that it has earmarked US$129B for infrastructure development between now and 2030 with US$8.1B ring-fenced for development for Expo 2020. Furthermore, Deutsche Bank estimates that the addition of private sector projects could see as much as US$43B being spent in preparation for Expo 2020.

In Abu Dhabi, for example, tourism, infrastructure and real estate will have the largest areas of growth. Arabtec looks forward to participating in development and construction for all these sectors.

We recently announced our largest ever contract in terms of value and the largest in the real estate sector in the region for 36 mixed-use and residential towers for Aabar Investments in Abu Dhabi and Dubai. Although this is our largest project, we approach all our projects in the same way - with clearly defined deliverables and outcome; this is essential in order for us to recruit the resources we need and maintain our reputation of finishing complex projects on time and in the most cost effective way. The project includes eight mixed-use towers in the Tomouh City of Lights development in Abu Dhabi, with a total plot area of 900,000 sq.ft and a built area of 14,000,000 sq.ft. In addition, Arabtec will construct four mixed-use towers in the Reem Island development.

We have reorganized our business extensively over the past 12 months to ensure that we are adequately prepared to scale up our business and take advantage of the many opportunities in the boom of the next five years. Arabtec Holding is well positioned to deliver on the various development and construction projects it has been awarded across all of its subsidiaries. We underwent a re-organization of our core business activities in 2013, which has meant we now have stronger governance and significantly enhanced systems and processes. This has led to a number of strategic decisions being taken, as well as building on Arabtec Holding's existing reputation of delivering to a high standard, and enhancing its skills and expertise through new partnerships. We see the vast amount of projects coming on-line as a positive move and look forward to being a part of the delivery of these projects.

Over the years, Arabtec has proven its leading position through a significant track record of delivering complex and challenging technical projects such as the Burj Khalifa and others. We are confident that our track record in the Middle East and a well-thought out strategy and good governance will help us deliver on our large backlog and on our growth strategy.

Hasan Abdullah Ismaik
Chief Executive Officer
Arabtec Holding

Interviewed by:
Cynthia Corby
Partner
Construction
Industry Leader
Deloitte Middle East


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Roots Group interview

A view of the Saudi construction sector from the material supply side

Ousama Fansa, the CEO of the Roots Group, one of the region's leading building materials suppliers, has confidence in the Kingdom of Saudi Arabia and the enduring strength of the construction sector there: "When I first arrived here 28 years ago I was told it wouldn't last and I've been hearing the same every year since. Yes there are challenges and risks and the landscape will continue to change, but what has been done here, particularly over the last five years, is impressive and should give us confidence. I've been waiting 28 years for the end of the sector and I think I have a few more to wait yet."

Like many forward-looking organizations in the sector, the Roots Group does not see the relative dominance of government in the construction sector as a never-ending source of opportunity. "We're not facing dropping off a cliff here: the underlying demand for infrastructure and other investment is too great. We are expecting, however, a tapering off of the major programs in the medium term. Our role as leaders in the construction sector and as key participants in the Kingdom's economy is to ensure that our own organizations are geared up to reflect this. We have to be ready to reposition ourselves for the different demands of a different primary customer base." Ousama is a strong advocate for the local skills and expertise that he sees

evident in the Kingdom's building materials supply industry. Outside of labor-intensive items such as carpets and furniture, his goal for his Saudi manufacturing operations is not to compete with Egyptian-sourced materials, where price becomes the predominant consideration. His own organization already exports significant amounts of material throughout the region, including North Africa. This reflects in part the growing appreciation of quality in procurement and specification decision-making – a theme he comes back to often. When pushed on what government could do to facilitate the development of this sector, Ousama sees removing the regulatory blockers and considering the financial incentives such as the FTZs used in the UAE as potentially more impactful than the major permanent way freight lines, into which the Kingdom is investing.

Ousama retains confidence in the fundamental robustness of the Saudi market. He notes that the headlines created by Expo 2020 and the soccer World Cup coming to the region create an immediate focus on a deadline driven by events, albeit it with strong attention on the legacy investments this creates for these countries. In contrast Saudi continues to focus on its longer-term plans to develop the country and the economic and social infrastructure required to meet the essentially demographic and resident-expectation driven demands in the Kingdom.

In contrast Saudi continues to focus on its longer-term plans to develop the country and the economic and social infrastructure required to meet the essentially demographic and resident-expectation driven demands in the Kingdom

Ousama is quick to note that the Saudi construction industry is far from without its challenges. Lack of predictability in project initiation and delays in payment are well rehearsed themes in the Kingdom. Interestingly, Ousama's view is that government clients probably get more bad press in this regard than they deserve. He notes that delays in payments in particular, not infrequently between six and nine months, are often as a result of blockages that reside with the contractors as opposed to the government. Those delays that are attributable to the client are often the result of inexperienced staff or consultants not able or empowered to approve work or procurements as they are bound by specifications or procedures they are not able to adapt.

While Ousama embraces the employment of local nationals under the Saudization drive, he notes that for the sector this, and the associated cornerstones of government policy such as limiting visa availability, presents real challenges. The Roots Group as an organization has been able to achieve 17% Saudization of its staff in the Kingdom so far. Ousama notes, however, that he has been able to move this forward principally in back-office functions. Here he has built a strong and highly regarded team of Saudi women to be responsible for many functions including design. For front-line technical staff, in his own words, they have further to go with bringing Saudis into the workplace – a problem caused principally by the lack of appropriately skilled Saudi engineers, trade and technical people. For construction firms, these roles are the core of the business and their impact includes wage inflation and skills shortages, putting at risk cost, quality and program certainty. Ousama notes that these constraints come at a time when the sector is being asked to respond to projects of a scale 10 or 20 times those they faced a decade ago. This creates, in his view, a fundamental incompatibility between what the sector is being asked to deliver and a central, and to date relatively inflexible, national policy.

On the relative dominance in the market for major projects of the limited number of local contractors, Ousama notes that this in part reflects the commitment and investment that these firms have made in the Kingdom. This is both financial investment but also the role that they play directly in local materials and employment markets. "Each of these firms is entwined within Saudi Arabian society at multiple levels, from community up to national government – it is only natural that this is going to give them a presence and opportunities above other firms, top flight international organizations or otherwise, who can view their engagement in the Kingdom on a largely project by project basis." Ousama does bemoan the loss of many of the high quality small to medium size contractors in Saudi. For many of these organizations the increasing costs and complexity of business brought by regulation and greater requirements such as bonding (which has both a direct cost and lock-up facilities) has made involvement in the sector untenable.

On issues such as sustainability Ousama is generally positive. While holistic LEED-type standards and mentality regarding design and construction are not yet the norm, there is increasing awareness of sustainability standards in specifying materials. Similarly while historically any analytical consideration of whole life costs and long-term facility performance were very much secondary to the imperative to build, there is growing recognition of the criticality of this in the design and specification phases. This reflects an overall trend that Ousama identifies in government contracting. Over the last five years there has been a consistent raising of the standards of many Saudi government clients. Organizations such as the Ministry of the Interior, Aramco, and the National Guard amongst many are backing up progressive visions for their construction programs with strong in-house or embedded engineering skills. This is being reflected in a progressive increase in the quality of work and materials specified and the rigor through which delivery is assessed. In many cases Ousama considers the standards as the highest within the region. While there are still clearly

The increasing costs and complexity of business brought by regulation and greater requirements such as bonding has made involvement in the sector untenable

some variations in the standards achieved between clients, the overall trend is positive. Furthermore, Ousama sees the bar-raising effected by government clients as being reflected more widely now in the private sector. As yet integrated supply chain management and the specification of optimal materials based a structured and holistic assessment are not the norm. They are, however, becoming more evident and as the construction sector begins to position itself for the post-government funding boom, Ousama Fansa is not alone in retaining cautious optimism.

Ousama Fansa
Chief Executive Officer
Roots Group

Interviewed by:

David Brazier
Director
Infrastructure &
Capital Projects
Deloitte Corporate
Finance limited

Qatar Rail interview

Transforming Qatar's public transportation system to world-class levels

Qatar Railways Company (Qatar Rail) was established in 2011 to design and implement an integrated world-class railway system in the state of Qatar. Qatar Rail will be the owner and manager of Qatar's rail network and will be responsible for the design, construction, commissioning, operation and maintenance of the entire rail network and systems. Qatar Rail will consist of Metro, Long Distance and Light Rail Transit. We hear from Mr. Saad Ahmed Al Muhannadi, the Chief Executive Officer, who gives his insights and thoughts on the future of the transport sector within Qatar.

Qatar Rail was established to design, implement, operate and oversee the construction of a world-class, environment-friendly, technologically advanced and integrated railway network in Qatar - making the latter among the biggest railway projects in the world. Qatar's integrated railway network developmental program encompasses three vital projects: the Doha Metro, the Long Distance Passenger and Freight Rail, and the Light Rail Transit project in the city of Lusail.

Qatar's railway network project will see a US$35B investment that includes plans to extend Qatar's railways by 325 kilometers, and its rail networks to those of other GCC countries

The Qatar National Vision aims to transform Qatar into an advanced country by 2030, capable of sustaining its own development and providing for a high standard of living for all its people for generations to come. The planned railway systems will support this vision. Qatar Rail will develop a world-class, efficient public transportation system which will provide an attractive and competitive alternative to private transport, capable of achieving a significant share.

Over the medium term the significant public investment program should continue to drive growth. These investments are mainly related to the pioneering infrastructure projects to support the FIFA World Cup 2022, the new sea port, the mega airport and the state-of-the-art railway network. There is also a keen focus on the tourism industry. These investment projects will boost the non-hydrocarbon sector growth and facilitate economic diversification. The biggest challenge will simply be the on-time delivery and completion of these major projects we are undertaking. They require the set-up of huge infrastructure and the deployment of advanced technologies.

The Doha Metro network consists of four lines (Red, Gold, Green and Blue), extending to 354 kilometers across the Greater Doha area, connecting the City's two central points with larger commercial, residential and dynamic areas in Downtown Doha, and operating underground in busy areas, and on and above the ground levels in the suburbs. Moreover, the metro network will cover over 90 stations, serve Qatar's two million people, most of whom are residing in Doha and surrounding areas. The Doha Metro project will be conducted over two stages: the first, scheduled to be completed in 2019, entails the set-up of 37 stations covering 84 kilometers in total length. The project's second phase, extending to 152 kilometers in total length, and encompassing nearly 56 stations, will be delivered by 2026.

Qatar Rail's integrated railway network project constitutes not only one of the largest such initiatives in the region, but more importantly, one that will work on connecting the GCC's railway infrastructures together, allowing for seamless and developed transport solutions for GCC residents commuting from one member country to the other.

Qatar's railway network project will see a US$35B investment that includes plans to extend Qatar's railways by 325 kilometers, and its rail networks to those of other GCC countries. The investment falls under a wider vision of creating a united and integrated economic regional trade market through projects that will connect GCC countries via land and railway transport. The railway network project connecting GCC countries will be equipped with the most advanced systems, and extended to around 2,000 kilometers.

In this regard, Qatar Rail's Long Distance Passenger and Freight Rail Project will consist of three different categories: a shuttle service for GCC transit passengers and travelers, transportation services for locals, and freight transport services for international and domestic routes.

Meanwhile, the Light Rail Transit project in the city of Lusail, which has already reached advanced stages, is composed of four lines extending to 30.5 kilometers in total, a fleet of 34 trains, and 37 stations; more than 50 % of the structure, which is slated to be officially delivered by 2017, has been set up.

We are advancing at great speed with our projects, and with the support of the groundbreaking technologies we are employing, and the worldwide strategic partnerships we have secured, we expect to rise to the challenge of delivering the projects as planned and scheduled.

An example of some of the partnerships Qatar Rail has created is in the opportunity to create the requisite tunnel boring machines required for the projects and we are very focused on continuing this trend. To achieve this we recently paid a visit to German manufacturer of Tunnel Boring Machines (TBM) HERRENKNECHT's factory headquarters in Germany to learn about Lebretha, the first TBM manufactured for the Doha Metro project and slated to be delivered to Qatar in May 2014. HERRENKNECHT finalized the manufacturing of the Lebretha TBM three weeks ahead of schedule. The 15 TBMs that will be received by Qatar and deployed into the Doha Metro projects rank among the best in the world, having been tailor-designed for the State of Qatar's geographic characteristics, nature, and areas.

We expect the next 12 months to bring about similar milestones for our projects, and hopefully, similar deliveries that will be made ahead of schedule.

The 15 TBMs that will be received by Qatar and deployed into the Doha Metro projects rank among the best in the world

The priority is to successfully award the remaining design and build contracts in a timely manner and then to ensure that all contracts are managed as planned. This will be achieved through a well-structured bidder evaluation process and putting in place the prudent controls and management systems that will ensure that all projects are performing as per plan. Managing the construction progress to ensure we deliver on time is paramount, which is why all our contracts are design and build to avoid any issues with incomplete designs at the time of construction.

Qatar Rail's bidder selection is based on a combination of technical and commercial criteria. A determination is made that the technical solution proposed by a bidder is feasible, deliverable and robust, that it is based on reliable technologies, meets all minimum technical requirements set and that the costs and financial structure are consistent with the technical solution. It is also important to confirm that the bidding consortium must come across as a cohesive entity rather than just a collection of companies put together purely for bidding purposes.

Qatar Rail's projects are aligned to the state's National Vision 2030, reflecting Qatar's growing interest in major infrastructure projects; the integrated railway network project falls under the developmental and growth plans Qatar is undertaking across various fields, including the

set-up of modern and efficient transport solutions. We, at Qatar Rail, are supporting the National Vision's four essential pillars: economic, social, human, and environmental development; Qatar Rail's project will revitalize growth across the state's sectors contributing to its economy, creating economic and investment opportunities, and being highly beneficial for the country's environment through the reduction of congestion and carbon dioxide emissions.

The State of Qatar will be undertaking several major projects pertaining to the hosting of the FIFA World Cup 2022, and more importantly, in line with its National Vision 2030

The projects we will undertake will work in full integration to connect Qatar's key areas with each other and with their vital extensions – whereby, the Doha Metro will link the capital's inner and outer areas such as Lusail city, the New Doha International Airport, the Education City, and the West Bay area.

We are also keen on having our projects make a positive difference in the everyday lives of Qatari people, and bringing about a real shift for the State of Qatar, placing it among the world's most developed and advanced countries in the transport field, and equally ranking Qatar Rail's project among the most pioneering, ambitious, and innovative integrated railway projects in the region.

The State of Qatar will be undertaking several major projects pertaining to the hosting of the FIFA World Cup 2022, and more importantly, in line with its National Vision 2030. These projects require a slew of world-class transport equipment and logistics solutions that are capable of timely delivery; ones that we are heavily investing in for all our projects and developments.

We are fully aware of the potential that a world-class project like Qatar Rail has to offer. The mega project will act as a catalyst and provide an opportunity for Qatar to promote the development of the private sector.

We have identified unique business opportunity clusters across key industry sectors. These business opportunities will generate value for Qatar and are sustainable beyond the construction of the rail network. Qatar Rail is working with the business community and holding roadshows to showcase these business opportunities, which can be captured both by Qatari entrepreneurs and multinational companies.

Obviously there is significant pressure on us all to deliver quality on time to fulfill the Qatar 2030 Vision – this is why it is critical to evaluate and assess the longevity, reputation and technical expertise of all our partners. The Government is also assessing the need to create laws which allow international companies to operate more effectively in Qatar, which is very positive and critical to achieve the end Goal!

Saad Ahmed Al Muhannadi
Chief Executive Officer
Qatar Rail

Interviewed by:
Cynthia Corby
Partner
Construction
Industry Leader
Deloitte Middle East

Infrastructure and social infrastructure spend and the challenges around these projects

The projected level of investment in infrastructure across the GCC states in the coming decade is enormous. The challenges for government and the private sector alike in delivering the planned pipeline are significant. Large, time-critical and competing programs across the GCC will likely place pressure on the procurement of all inputs necessary for achieving a successful project, from specialist items of machinery such as TBMs and HV equipment, to labor (skilled and unskilled) and materials. This heightened demand not only places upward pressure on prices, but also places delivery schedules at risk. Port and logistics bottlenecks loom large in certain jurisdictions, further compounding these risks. Funding is also likely to be a challenge. Aside from the Kingdom of Saudi Arabia, where credit is plentiful, debt may become scarce and the cost of debt, particularly commercial bank debt, is likely to increase.

In this dynamic environment, ripe with opportunity, but replete with risk, private market participants will need to make astute decisions around the deployment of capital and resources. These decisions are set to become even more challenging due to the resurgence of demand in other developed economies such as the United States, which may be perceived as providing a more established framework, and hence a safer haven, for capital investment.

While recent regulatory reform in the UAE has eased some risks for investors in the sector, the current inflationary signals in this market should lead contractors to investigate the financial health of the project sponsors in this sector

With this in mind, we think it is possible to make some predictions for infrastructure development in the Middle East, which may constitute useful sign-posts for decision-makers:

- Public Private Partnerships (PPP) will continue to be used extensively in the power, water and wastewater sectors. The GCC International Power Project (IPP) model is well established, with reasonably limited jurisdictional variations. New IPP/IWPP markets such as Dubai will provide good opportunities for developers and contractors familiar with that model;
- Beyond power and water, the favored procurement methodology for infrastructure (that is not plant) will still be direct procurement under fixed price construction contracts based on the FIDIC suite of documents. The procurement and delivery of these projects will continue to be managed extremely aggressively by employers (both public and private sector). Little ground will be given in response to contractor requests for deviations during the procurement process, and contractors will again be asked to stake considerable cash collateral to win projects. Resilient and enterprising contractors may be able to increase profitability in the fixed price environment if demand begins to outstrip supply;
- Some fairly large social infrastructure projects (notably schools and health projects) will be delivered under a PPP availability payment model. Where the sponsors are independent from the procuring entity, participants could reasonably anticipate delays around project closings and higher than usual transaction costs consistent with a fledgling, rather than mature, market. Furthermore, there may be a lack of funding appetite for these projects, as there is less scope for export credit support for non-plant based PPP;
- A resurgent real estate market in the UAE and elsewhere will provide government with the opportunity to subsidize the cost of PPP in the housing and accommodation sectors through the grant of long-term leases, or the transfer of land plots, for private and commercial real estate development. While recent regulatory reform in the UAE has eased some risks for investors in the sector, the current inflationary signals in this market should lead contractors to investigate the financial health of the project sponsors in this sector (whether private or public) and to ensure that there are adequate non-real estate assets available from which to satisfy any debts;
- Elsewhere, user fees for most government-provided services (such as roads or metro transport) will continue to be too low to support concession projects with a significant element of revenue or patronage risk. In a sense the GCC will avoid some of the mistakes made elsewhere in relation to the formulation of such projects;
- There will be a trend towards more sustainable, greener and better maintained infrastructure, especially in the UAE. Renewable energy (solar/PV) will come into its own as an important source of capacity. Specialist O&M contractors will play an increasingly prominent role, particularly in the transport sector where improvements in the operational efficiency of mature infrastructure assets can be derived through the experience of private sector operators operating across a range of jurisdictions;

- GCC governments will continue their push for greater involvement of their nationals in all aspects of the delivery of infrastructure projects, as part of their policies for achieving higher participation by GCC nationals in the private sector workplace overall. Private sector organizations that recognize this trend and which are able to seize upon it as an opportunity, rather than treating it as an obstacle to overcome, are likely to achieve better outcomes;
- GCC governments will (astutely) take advantage of liquidity sources in the Far East in particular by seeking contractor-sourced finance for major "hard" infrastructure projects. Contractors will need to be careful to ensure that the portion of the outstanding contract price representing principal becomes payable from a hard-coded date or that completion tests are achievable and documentation is unambiguous. Some contractors may view the contractor finance model as closer to "business-as-usual" than appears on paper, given the historical need to self-finance the back-end of most projects in the GCC as a result of the culture of disputes that has developed in the region, and the relatively poor payment record of most employers outside the NOCs and international oil majors; and
- GCC governments will continue to take a hard-nosed and sophisticated approach to major procurement. The increasing use of thinly capitalized procurement vehicles will mean that developers and contractors will need to be alert to sources of recourse if projects unravel. Political risk will need to be considered in the broadest possible sense and not simply in the context of state failure or blatant expropriation. The demand for legal services relevant to the delivery of infrastructure projects in the public and private sector will rise as a result.

None of the above constitutes particularly new or original thinking. While that may not satiate those looking for exponential economic growth through rapid change, we think that it does reflect the fact that the GCC is becoming an increasingly mature market. As such, it will still provide excellent opportunities for profitable growth as it has in the past, but with a greater focus on building economies which are sustainable and resilient. We are consistently surprised by the clear thinking and foresight of the community of leaders who, having now clearly established this region as important for the rest of the world, are looking to build a lasting legacy for the benefit of their national populations.

Political risk will need to be considered in the broadest possible sense and not simply in the context of state failure or blatant expropriation

Simon Harvey
Partner
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Combatting fraud in the construction sector

A high-risk fraud environment is typified by heightened pressure and opportunity. When these factors are considered on an industry basis, the construction sector rates highly, particularly in the procurement cycle. From award to execution, employees and external parties (agents, suppliers, and competitors) have significant opportunities to commit fraud.

In the Middle East, these risks are heightened by the sheer scale of capital projects, a propensity to cash dealings, the involvement of myriad connected parties, and a transient and low-paid workforce.

"Corruption can add up to 10% to the total cost of doing business globally, and up to 25% to the cost of public procurement in developing countries."

The absence of properly structured and executed fraud controls in construction projects acts as a vacuum into which fraud opportunity, and persons susceptible to the temptations, are drawn together. In the below case studies, you will see that the simplest of controls would have prevented the fraud, or at the very least detected it much earlier.

Recent efforts in Oman, Saudi Arabia, and the UAE have placed companies on notice that the 'old' ways of cornering business through under-the-table inducements are no longer acceptable

Case study #1

"A number of managers involved in the construction of a major power project received large cash payments and gifts from colluding with vendors to award lucrative supply contracts. Some of these same managers then went on to establish companies through proxies to act as agents in the supply of a wide range of materials to the Plant. The syndicated nature of this scheme meant that the segregation of controls of duties in their processes was circumvented. The fraud took place progressively over a period of years. By the time a whistleblower came forward, the quantified leakage exceeded US$2M and involved 285 separate fraud incidents. The investigation discovered that there was no active price checking outside of provided bids or existing supply contracts. An examination of vendor registrations and HR files would have identified the suspicious links between suppliers and employees."

Case study #2

"Following allegations of misconduct involving the general manager of a regionally-based construction company, an investigation revealed a significant discrepancy between the quantity of high-value scrap materials that were removed from site and the payments received for the scrap. The general manager was found to have directed the sale of these materials for his own personal benefit. The schemes employed included the disposal of usable materials as scrap, sale of scrap below market value, and general theft and diversion of scrap and consumable materials. The position of the individual allowed for the circumvention of internal controls, including diversion of staff from their normal role, and placing undue pressure on-site security personnel to effect the movement of materials from the sites without documentation. Calculated losses exceeded US$1M; however, the true impact is likely to have been significantly higher."

Numbers do not tell the full story

That last point in the above study is something that readers will see in many cases of fraud. This is quite understandable, as these activities are mostly identified 'after the fact' through investigations and post-construction audits. Full quantification of loss is a significant exercise, and rarely do companies wish to invest further funds to put a true number to the loss when they have already weeded out the offending people and practices. Only in circumstances where there is a reasonable chance of recovery from the offending parties or from insurers would such a detailed quantification be palatable.

Fraud and supply chain integrity awareness

Regionally, much is being done to address the specter of fraud, bribery, and corruption. Recent efforts in Oman, Saudi Arabia, and the UAE have placed companies on notice that the 'old' ways of cornering business through under-the-table inducements are no longer acceptable. The recent spotlight has been on tendering and awarding. There are of course many other areas throughout the four stages of the supply chain where fraud and misconduct can occur. The following table lists some of the fraud risks at each stage of the cycle, aligned against where that risk resides.

Table 1: Supply chain fraud risk matrix

	Awarding	Procurement	Inventory	Execution
Employee only	• Improper performance bond waiver • Exclusion of qualified vendors	• Phantom vendors • False invoices • Invoice mark-up/ alteration • Redirection of delivery	• Theft of inventory • Fraudulent or improper inventory capitalization • Inventory write-off (lost, obsolete, scrap)	• Inaccurate/ falsified forecast of raw materials, or spare parts • Theft of raw materials, finished goods or scrap • Personal use of inventory or assets
Employee and external party	• Conflict of interest • Improper agreement to apply variation orders post-award • Bribery of government employees	• Technical scope manipulation • Bribery/kickbacks • Collusion with third party advisors • Unnecessary/ excess orders	• Bribes from subcontractor • Invoices for goods not received	• Collusion with transporters • Improper release of retention • Payroll - irregular compensation payments • Bribery of government employees
External party: Supplier/ competitor	• Collusion/supplier Cartel – Bid rotation and complementary bidding • Phantom bidding • Defective pricing • Leackage of confidential bid information/ tender	• Bribery of third party • False or misstated invoices • Overstatement of business experience • Suppliers misrepresenting their financial, technical or ethical position	• Bribery of subcontractors • Inflated or fictitious invoices • Short shipments • Product substitution • Invoices for goods not received	• Unqualified consultants • Misrepresentation of technical capability and/or capacity by suppliers/vendors

Fraud, in all its guises, has at its center a breach of trust. In a project environment, trust is essential due to the segmented expertise that each party brings to the table. Accordingly, it is critical to ensure that the trust awarded is based on substance, and subjected to some level of verification and cross-checking.

Prevention is better than cure

The most common of sayings – prevention is better than cure – is, however, a resounding truth when it comes to fraud. Too often, construction companies have been caught out with an 'eyes on the prize' mentality, and have neglected the core planning processes that may identify questions that need to be asked to other parties in the project, while also neglecting to ensure that the supply chain policies and procedures are clear, transparent, and properly segregated.

Whilst the risk of fraud can never be fully eliminated, companies can implement controls to mitigate the likelihood of such risks occurring, and help detect them earlier to reduce the impact to the project, and to the company. Consider the following checklist for preventing procurement fraud for example:

1. Due diligence and background checks on partners/ master contractors/sub-contractors. At a minimum, you should have confidence in the following factors
   a. Capabilities to contracted tasks
   b. Financial stability and ultimate beneficiaries of payments
   c. Reputation in the market
2. Overt stance on fraud, bribery and corruption:
   a. Fraud Risk Management (FRM) framework
   b. 'No bribes' policy
   c. Business code of conduct, with specific conflict of interest and gifts and entertainment provisions
   d. Whistleblowing facility
   e. Fraud Response Plan (FRP)
   f. Ethics and fraud awareness training for your staff
   g. Supplier code of conduct for your suppliers, and their sub-contractors
   h. Rotation policy on high risk parties (e.g. buyers)
   i. Enhanced employee screening for high risk positions
   j. 'No bribery' clause in all supplier agreements
   k. Right to audit clauses in all supplier agreements
   l. Debarment policy to exclude suppliers and contractors that have participated in any illegal or unethical activities
3. Independent oversight to test and challenge your supply chain procedures and processes:
   a. Internal audit reviews
   b. Data mining to look for hidden red flags

The dynamic nature of construction projects should compel continual vigilance throughout the life of the project. Never lose sight of the fact that efficiency and performance issues can at times be indicators that a party is not being true and trustworthy in their responsibilities in the project. Robust and continual vigilance will greatly improve your chances of weeding out the fraudsters.

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SMARTer construction

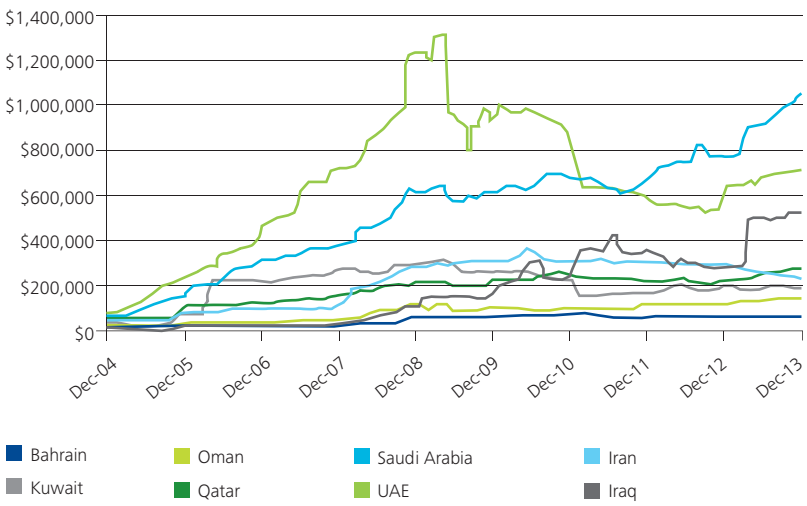
How the GCC's mega-projects need to learn post-2008

The 2013 Cityscape exhibition, in the eyes of many commentators, marked the return of Dubai and the GCC as a whole for conceptualizing and then delivering mega-projects once more. Whether they are actually delivered is arbitrary – it is the sentiment and optimism in the market that is the important point here; the projects will follow in one form or another regardless.

So are mega-projects back, and has Dubai returned to its pre-2008 development boom? As in many aspects of life, one has to look back in order to look forward.

Figure 1 below provides stark reading. In the years leading up to 2008, development activity across the GCC, but in particular the UAE, was marked by an escalating upward trend. Between December 2004 and December 2008, the value of live projects rose from circa US$80B to a recorded high of US$1.3T.

Figure 1: Project values (USD Billions) from December 2004 to December 2013



Source: MEED Projects

Late 2008 and early 2009 saw a dramatic drop in live projects in the UAE, from US$1.3T to US$800B in one year, with a further systemic decline in the following years, reaching a low of circa US$500B in December 2012. The phrase "boom and bust" is often used when referring to the UAE's sharp rise and fall in activity, and the scars of failed or abandoned developments can still be seen today when driving around the city.

What is interesting is that Bahrain maintained its more modest momentum in terms of development activity, whilst other GCC countries remained static, and newer contenders emerged for the largest growth in development activity, notably Iraq.

So does this represent a valuable lesson in "measuring" capital expenditure rather than being driven purely by market sentiment and the all too familiar rivalry of who has the tallest, the biggest or the shiniest of buildings? Probably not is the answer.

It could be argued that the sheer draw of Dubai, and the UAE as a whole, is always likely to be reflected in this type of development cycle, although the announcement of Dubai's successful Expo 2020 bid is likely to perpetuate the latest cycle for some time yet. It is also hoped that lessons have been learnt from the past by addressing demand with supply rather than feeding supply without any underlying need or want for some of these developments.

With an upward trend already evident in other GCC countries, such as KSA, Kuwait and Iraq, it is clear that lessons should be learnt from the 2008 "crash." And whilst much of the expenditure in these peripheral markets is predominantly on infrastructure investment, there are some valuable checks and balances that need to be put in place to ensure a similar situation does not arise once again.

SMARTer construction

So how does the industry as a whole ensure that growth is sustainable, thus ensuring mega-projects are not a mere by-product of an economic cycle? The notion of SMART, a mnemonic aimed at setting objectives (Strategic, Measurable, Attainable, Realistic and Time-bound) is one which people are familiar with through training courses, project management and employee objective setting. But can this be applied across an entire industry?

Whilst each project or capital expenditure program has its own criteria of what defines success, be that maximization of return on investment, sustainability credentials or simply being "the tallest", what is evident is that a system-wide framework of measurability would greatly enhance the industry's ability to keep itself in check.

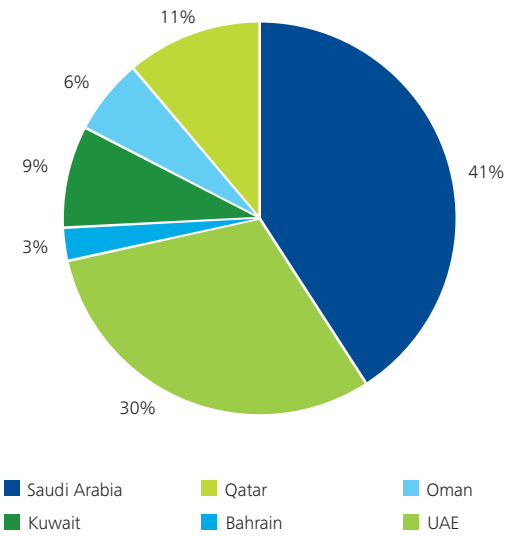
Strategic: Development tends to happen here in the GCC based on an assumed need, e.g. "Let's build the world's largest mall because people will come." This type of ideology of building to create demand has to stop, as it is unsustainable. Emaar recently announced a huge, 13.6 million sq.m development near Dubai World Central. Does Dubai need a development this large, and is there currently demand to fill it? The short answer is probably no, but given Emaar's enviable track record in delivering projects, it is expected that this development will be supported by the inevitable influx of people on the back of a property cycle or boom.

Measurable: As evidenced earlier in this article, the "boom and bust" mentality of previous cycles must be eradicated to ensure sustainable development and economic growth. Whilst all mature economies inevitably succumb to "cycles" of one form or another, the polarity of the peaks and troughs in the UAE's economic cycle over the last 10 years has to serve as a clear warning to avoid history repeating itself. With the scars of the past so evidently clear across the UAE (Dubai in particular), and the issues so well publicized, a more measured approach to development needs to be implemented. What does this mean? Ensuring that there is demand for a particular development use-type or attraction would be a good start. A solid business case/plan with the requisite level of research and analysis will not guarantee success, but it will almost certainly provide context to influence a business decision regarding capital expenditure.

With the scars of the past so evidently clear across the UAE, and the issues so well publicized, a more measured approach to development needs to be implemented

Figure 2 below evidences the rate of development across the GCC as at February 2013.

Figure 2: Development activity across the GCC, February 2013



Source: MEED Projects

Post Expo 2020 announcement, we expect that the UAE's share of the pie chart will be significantly greater, and it is therefore imperative that a measured approach to development is adopted

As can be seen in figure 2, the majority of development was in Saudi Arabia with the UAE following behind with 30% of overall development activity. Post Expo 2020 announcement, we expect that the UAE's share of the pie chart will be significantly greater, and it is therefore imperative that a measured approach to development is adopted.

Attainable: The attainability of land, debt finance or government-backed funds across the GCC has not historically been an issue per se. Even taking into account the UAE "crash" of 2008, as can be seen from Figure 1 earlier in this article, capital expenditure was still evident across the region and in large sums.

So the attainability in this context means something else. It is the attainability of the right mix of demand, supply, the right ambition and the right team to deliver. Ensuring that the business case stacks up is only one part of the equation. A developer may have a strong ambition to deliver a particular project, have all of the funds needed to deliver the project allied with demand for that type of development, but without the skills to deliver and impartial advice to guide, it could still fail spectacularly.

Realistic: Realism is linked to the preceding paragraphs on attainability. Many of the failed projects in Dubai are not just simply a by-product of finance being withdrawn. They are a culmination of poor planning, appointing the wrong team to deliver and not having objective advice at crucial points in the development cycle. We often refer to the preparation of a business case as the initial "gateway" before a development is taken forward. Whilst this does not guarantee a successful outcome, if done properly, it can provide a client with an "expected outcome." What is abundantly clear is that many of the UAE's failed projects back in 2008 and leading up to the "crash" did not have this level of detailed planning or foresight.

Time-bound: The phrase, "Timing is everything," is never more applicable than here in the GCC. And whilst that applies at a macro level, it also applies equally at a micro level. Throughout this article, we continue to refer to "planning" of projects or developments, ensuring that they are sustainable in terms of demand, supply, operation, etc. The time factor is equally significant, as delivering a project to meet a particular milestone or event can often be the fine line between success and failure. But what about allocating enough time for projects to physically be delivered? Across the GCC, there is an abundance of unskilled/semi-skilled resources who are willing to work 12-hour days, 6-day weeks for prolonged periods and with low levels of pay. So it would be relatively easy to assemble a very large workforce quickly. But in doing so, does that mean that projects across the region are being delivered at a pace that inevitably affects quality, all to ensure that they are operational within a particular timeframe? This is certainly true for some developments that have been delivered in the recent past.

Allocating enough time to deliver a quality product has to be a better, long-term strategy for success than the immediate, instant, overnight approach that has previously been adopted. If enough time is allocated to the delivery of a project, allied with the right skills mix and the objective, impartial advice we referred to earlier, then it is more certain that a project or development will be a long-term success than a failure.

Conclusion

The fact that much of the anticipated development across the UAE will be debt-financed will ring alarm bells with many, particularly those who are not based in the region or who do not know the region particularly well. The world has, however, in economic terms turned a significant corner, something the GCC, and in particular the UAE, wants to drive forward to renewed economic prosperity.

Elsewhere across the GCC, expenditure on capital projects continues unabated. In developing economies like Qatar, KSA, Kuwait and Iraq, infrastructure investment is huge. Developing urban metro systems and bus/rail networks appears to be the order of the day, and with this it is likely that complementary development will take place, further driving economic development.

So, whilst there is an air of positivity across the GCC in terms of market confidence, in particular the UAE following the Expo 2020 award, adopting the "SMART" principles discussed may ultimately help avoid an economic downturn of the magnitude experienced in 2008 and beyond.

The fact that much of the anticipated development across the UAE will be debt-financed will ring alarm bells with many, particularly those who are not based in the region or who do not know the region particularly well

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Plan, plan and plan again

Are you a market leader or follower?

As the rest of the world emerges slowly in 2014 from five years of unprecedented downturn, what can the GCC take from this period and how are GCC clients, contractors and consultants learning from recent history and preparing themselves for growth? In summary, are you prepared for growth and will you be a market leader or follower?

Reflect

The last five years have demonstrated it is essential, whether a client, contractor or consultant, to have robust but flexible business plans and strategies aligned to the GCC market, which is one of the most dynamic and fast-moving markets in the world. The idea that a one-off plan, such as an annual business plan or one-off development feasibility study for a new project, is sufficient to guarantee success needs to be quickly confined to the garbage bin. Instead, we should see these as more iterative and dynamic processes of check, review, revise, check, review, revise… constantly seeking to move into new space as it arises – a true market leader trait.

By being flexible and developing various scenarios, organizations will be much better able to 'flex' their resources, whether capital or manpower, to take advantage of the upturn being witnessed across the GCC markets. This in turn will give first mover advantage and a differentiated competitive edge.

More mature and predictable Western economies show how often the path out of recession can be very quick, with great opportunities presenting themselves early to those 'looking' for them – market leaders. Often those left sleeping are left to feed with the masses on the scraps.

For the GCC Infrastructure & Capital Projects sector, those who reflect recent times but develop well considered market entry strategies for emerging markets (such as Libya, Iraq, etc.) will be better placed to maximize opportunities, understand the risks and how to mitigate them. Whilst fortune does favor the brave, it will be more sustainable if augmented with a robust plan. Knowing when to do something, and more importantly what to do if x, y or z happens, needs to be at the heart of all businesses that want to grow and be successful.

The next few years, up to and post the recently awarded Expo 2020 to Dubai, will see unprecedented investment into infrastructure and capital projects

Whether you are a client, contractor or consultant, time is running out if you want to be a leader not a follower. The next few years, up to and post the recently awarded Expo 2020 to Dubai, will see unprecedented investment into infrastructure and capital projects and the characteristics of the new market leaders will be those with robust business strategies and market understanding (how to operate within markets increasingly reliant on JVs, blurred territories, increased bonding need, access to strong supply chains in an increasingly resource hungry region, etc.).

Making a mistake is often excused as a common human failure. As GCC markets continue to grow, making the same mistake twice needs to be inexcusable and lessons learnt over the last five years should and must prevent this. This should be the 'only' reason to refer to the past!

Refocus

Another factor in an expanding GCC market is the growth and strength of competitors at all levels of clients, contractors and consultants. From talent to resources, land to industry market segment, all organizations need to choose their targeted market space and defend it with all their might. Take a market-leading client developer; they will increasingly face product and price competition as more entrants come into their space. The market leaders that will be most successful will be those who can, for instance, adapt their product, from say purely five-star residential developments to four-star mixed-use developments designed to meet the 'current-now' market need, not the need appraised two years ago when the scheme was conceived and the business case signed-off. Market-leading consultants will provide high value, differentiated professional services that give improved outcomes for their client: leading contractors deliver quicker, cheaper and lower defect projects to clients consistently.

Wherever you sit in the chain, this can only be achieved by talent rich organizations that are well organized, trained, led and supported, constantly focused on maximizing the economic or social benefits of the projects they deliver from residential to public transportation, hospitals, schools, etc.

By adopting a refocusing and rebalancing approach, leading organizations will continually appraise which attributes of their business offering drive their own 'client value' and remove those that do not.

Again history shows us that out of economic downturn come opportunities as well as casualties. The question will be; which category will you fall into?

Re-organize

One of the most critical areas in the whole process of moving forward to face the future is reorganizing to be able to meet 'new' needs, not old ones. Business should look at professional sport as its inspiration in this arena. In sport, say a football team, season goals are defined regularly, coaches appointed and players bought, sold and swapped through the transfer process – all to align capability with plan, i.e. to win the cup. Unfortunately, our industry is slow to change and often old players try to learn new ways of playing, with variable success. Clients similarly suffer with teams playing to outdated rules, formations and ways.

Wherever you are in the industry community and whatever role you have or aspire to, your alignment to the "new market" needs must be understood and fully supported by the right product, offer and capability as buyer's choice increases across the region over the coming years. Admittedly the process of reorganizing and restricting can be a painful one, needing specialist support insight and skills but like pruning a tree, businesses need to choose between erratic growth or vociferous and controlled growth after careful and professional pruning. Choosing the right advisor with deep market and 'relevant' sector insight will be the catalyst to growth.

One of the most critical areas in the whole process of moving forward to face the future is reorganizing to be able to meet 'new' needs, not old ones

As we look back on the last five years and celebrate the 'recession is dead', certainly things do appear on the up. The question is how much and how soon? Will you lead or follow?

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Is your schedule right?

Achieving project completion on time and within budget at specified quality standards is the core criterion of project success and the backbone of good project management. However, according to research published by the US-headquartered consultancy Independent Project Analysis (IPA) in October 2013, a total of 65 percent of the GCC's megaprojects are destined to fail, in terms of budget and schedule overruns[1].

"As these projects are tendered and awarded, Qatar will become the center of attention for the region's construction companies. Concerns are already being raised about the prospect of an overheated market with rampant cost inflation and unrealistic delivery schedules."[2]

Tight schedules and squeezed margins followed by rushed mobilization is normally how the story often begins, potentially setting projects up for failure before they have even commenced.

From our experience of working with the region's top contractors, it is apparent that due to the growing competitive market, they are striving to win work to fill their order books and accordingly estimating teams are responding to virtually all received Request For Proposals (RFPs) without following a clearly defined process for bid/no bid assessment.

Some clients are limiting the contractors with strict time schedules and inadequate periods for preparation and submission of tenders, resulting in an improper and incomplete assessment of the associated technical, contractual and commercial risks. These in turn can often lead to incorrectly understood scope of works and inaccurate time assessments, i.e. not testing whether major milestones are achievable within the advised contract deadlines.

Once the contract agreement is signed, a kick-off meeting takes place where the tendering team hands over all the pre-contract documentation, assumptions and correspondence to the site construction team. Again with insufficient time set aside, more often than not the proposed high level schedule of works is often based on poor construction methodology, poor schedule logic, ambitious or inadequate allocation of resources and/or variable productivity rates.

Some clients are limiting the contractors with strict time schedules and inadequate periods for preparation and submission of tenders, resulting in an improper and incomplete assessment of the associated technical, contractual and commercial risks

Here is the big dilemma. At the time of greatest pressure to 'get on with things', project managers are expected to endorse the tender schedule before commencement of work; in most instances 'only' after developing the Project Execution Plan (PEP) and based on the existing constraints. These will include the time needed for obtaining the required permits, right of way acquisitions, environmental requirements, required approval cycles, resource availability, delivery periods of long lead items and subcontractors' procurement/capabilities. Additionally, the project manager needs to verify that the contractual duration is achievable - our experience demonstrates that often things are too late, the 'start gun fired' and many project managers lament that the time and costs are unrealistic and the contractual completion dates unachievable.

Attempting to resolve the issue, the project managers, with the assistance of the planning engineers, commonly start numerous trials of 'crashing the durations' to keep the schedule within the allowed contractual period. The outcome of this 'folly' is an unrealistic baseline schedule of works with illogical sequencing, excessive activity overlap, and open-ended relationships. These are in addition to the loss of productivity resulting from the unsupported increases in resource levels, which is often restrained by the logical dependencies between activities and accessibility requirements.

Although the purpose of creating a baseline schedule of works is so that it can be used as a tool for project coordination, progress monitoring and control and performance measurement, forecasting and reporting, we have observed that in many instances it ends up being used merely as a paper-work exercise submitted to meet client reporting or contractual obligations.

If the above methodology is adopted, hurried commencement results in projects experiencing major delays resulting from, but not limited to, errors in design, lack of coordination on site, inaccurate rates of production, extended material delivery periods, poor performance of subcontractors, inadequate quality control, increased defects, re-work, etc.

Month after month, what often can follow is the deviation from the baselines that starts incrementally growing to a point where the accumulated delays cannot be recovered. This issue can accumulate to severe client dissatisfaction and subsequent notices of delays, disputes and, in the worst cases we have seen, warnings of termination.

Added to this, the number of scope changes during the execution of the projects in the region accelerates worsened by the lack of integrated project systems. Contractors are usually unable to reliably capture, track, manage and accurately assess the impact of these changes on the baseline schedule of works, which leads to inaccurate progress measurement and schedule forecasting – just when the contractor needs control of its project to be able to develop and implement turnaround/mitigation measures.

Such a poor planning process leads to project prolongation, cost overruns, exposure to delay damages and major reputational damage, which are usually accompanied by low morale and job insecurities that drastically affect the progress of works and the successful completion of the project.

Our advice for taking early control

Our in-depth project experience working for many of the region's leading contractors tells us that the root causes of all the aforementioned pain points can be avoided by considering the following recommendations during the tendering stage:

1. Develop a clearly defined process for bid/no bid assessment;
2. Include the necessary qualifications related to the schedule of works in the contract agreement;
3. Conduct qualitative and quantitative assessment of the technical, contractual, schedule and commercial risks associated with the scope of works;

A poor planning process leads to project prolongation, cost overruns, exposure to delay damages and major reputational damage, which are usually accompanied by low morale and job insecurities

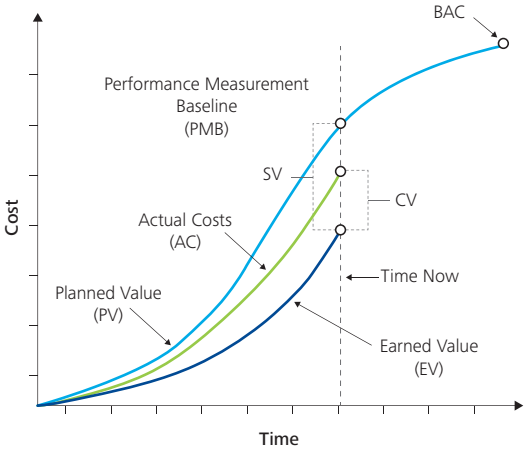
4. Allocate adequate schedule contingency to cover for the risks of project prolongation and consequently potential exposure to delay damages; and
5. Engage the project managers at initiation stage of the project (if possible).

Moreover, in order to achieve effective and robust operational standards in line with best industry/leading practice, all contractors should consider the following recommendations post contract award:

- Allow a reasonable period for the project managers to prepare a realistic baseline schedule of works in line with the project execution plan to be endorsed by higher management;
- Ensure that the baseline schedule of works meets the following requisites:
  - Comprehensive work breakdown structure that includes 100% of the scope;
  - Alignment of the work breakdown structure with the code of accounts;
  - Any existing constraints, necessary permits, regulatory changes, right of way acquisitions, severe weather conditions and special environmental requirements are accounted for;
  - Major project milestones are well defined;

- Construction methodology, dependencies between activities and sequence of works are logical and achievable;
- Activity durations are based on contractual quantities, realistic production rates and resource allocation;
- The critical path is logical and reflects the longest path of planned activities for the completion of the project;
- Overlaps between activities are not excessive and open-ended activities are non-existent;
- Adequate durations for submission and approval of transmittals are allocated;
- Delivery periods of long lead items are supported by suppliers' quotations;
- Planned packages are replaced by detailed subcontractors' schedules which are integrated within the baseline schedule; and
- The baseline schedule of works is resource (equipment, material, labor) and cost loaded.

• Develop a standardized and consistent approach to planning and scheduling, progress measurement, earned value calculations and key performance indicators (i.e. SPI, CPI) to be followed by project management staff and consultants, subcontractors and suppliers;
• Appoint an adequate number of skilled project controls resources;
• Update the baseline schedule of works on a timely basis to reflect the actual progress of works;
• Prepare a revised schedule whenever the baseline schedule of works becomes unrealistic and does not reflect the actual sequence and progress of works on site;
• Assess the impact of scope changes regularly on the baseline schedule; and
• Submit interim claims for extension of the time for completion (when applicable) and retain a clear audit of the supporting documents for substantiation.



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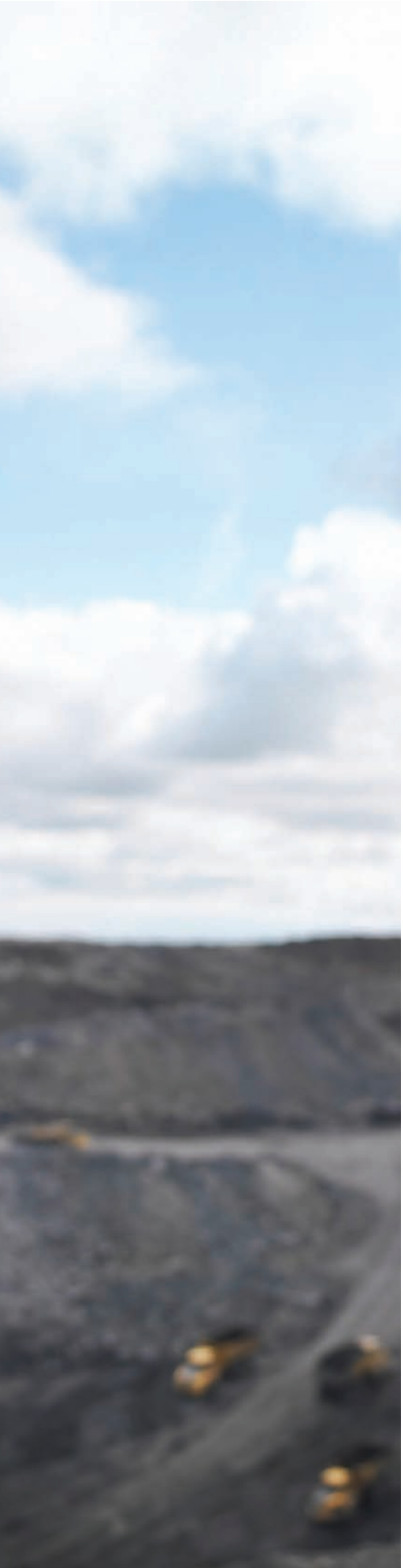
Endnotes

1. Two thirds of region's megaprojects 'destined to fail' article published on Meed on 1 October 2013, 10:12 GMT | By Kevin Baxter
2. Qatar construction boom starts article published on Meed Issue 16 20-26 April 2012



What does good look like in effective project delivery?

It is very easy for us to define a successful construction project as a built asset completed safely, on time, for the contract price, with the contractor achieving a reasonable profit in return for performance of its work. It is also easy for us to agree that the unforeseen risks and pressures faced in the construction industry make it very difficult for a construction project to be delivered in line with this definition. In reality, many projects will face a series of failures that, when combined, impact the project to an extent that it cannot be considered a success. In other words, projects are not delivered effectively. What does effective project delivery look like?

To better understand this, it is helpful to consider a project that was not delivered effectively, for instance: the Sydney Opera House in Australia.

The iconic Sydney Opera House is one of the most instantly recognizable buildings in the world. Unfortunately the construction of the Sydney Opera House was plagued by difficulties. The project that was originally scheduled for four years at a budget of AUS$7M, ended up taking 14 years to complete at a cost of AUS$102M! It is hard to imagine what could have gone wrong to have such a large impact on this prestigious project; however you may be surprised to find out that the issues faced on the Sydney Opera House are not unfamiliar to the issues commonly faced today.

Firstly, the project was not very well defined at the outset. This resulted in numerous changes to the project's design requirements after construction commenced (as an example, the original design had two theaters, and this was later changed to four). These late changes contributed to delays and cost overruns, and became an obstacle to the project.

Secondly, the project's cost was underestimated from the outset. When the updated estimate was reported to the client, the cause of the increased costs was not properly understood and the perception was that the costs were spiraling while the progress was slowing. The client resorted to withholding payment to the architect who was acting as the project manager. This led to a dispute which ultimately resulted in the architect resigning from the project. New parties took over the project, and numerous unforeseen complications resulted, further delaying the project and adversely impacting the costs.

It is clear the Sydney Opera House project would have greatly benefitted from attributes commonly considered crucial to effective project delivery:

- **Efficient and timely client decision-making**
  Ensuring that the timeframes and procedures for appropriate decision-making processes are clearly communicated, followed and ultimately that they are concise in their nature to aid their effectiveness.
- **Significantly lower numbers of changes introduced during the construction phase**
  As already mentioned, change is a staple of the construction industry and its projects; however, through best practice methodologies you can minimize those changes and their subsequent impact on the timely delivery and final out-turn cost of the project.
- **An integrated project management methodology, including guidelines and tools**
  Clear and concise procedures which can provide snapshots to key stakeholders on the performance of such projects; allowing for risk items to be flagged as early as possible and to increase stakeholder awareness of the status of such projects and avoid "surprises" to key decision-makers.
- Systematic use of Key Performance Indicators (KPIs) to monitor the delivery of the project.
- **Increased access to performance data on projects**
  Allowing for benchmarking and status reviews, to understand the performance trajectory of projects and larger programs.

None of these attributes are new concepts. However, it is common to find that few of the tools and techniques required to achieve these attributes are implemented in organizations responsible for delivering projects, including:

- Project readiness assessments whereby the level of design, estimation, risk and project planning is assessed prior to construction commencing.
- Using a project steering committee that is familiar with the project's goals and constraints, to assess and limit changes.
- Using integrated project management techniques to assess unforeseen events and understand the possible impact of risks so that these can be effectively managed.

Through best practice methodologies you can minimize those changes and their subsequent impact on the timely delivery and final out-turn cost of the project

- Using integrated project controls and KPIs to provide earned value and project performance index date.
- Independent validation and reporting of budget variances and projects – To ensure that the full information guiding the budget status is clearly conveyed with as little ambiguity as possible. A peer review type role can dramatically improve the accuracy and transparency of the information being reported, which ultimately can assist with making informed decisions.

The Expo 2020 and Qatar 2022 events have created an exciting environment where both the UAE and Qatar are gearing up to deliver major capital programs to immovable deadlines. One only has to look at the concerns over Brazils' readiness to host the FIFA 2014 World Cup, or the difficulties faced in India during the 2010 Commonwealth Games, to understand the seriousness and impact of not delivering projects effectively. Now is the right time for the organizations tasked with project delivery to assess their ability to deliver projects effectively.

Scoping issues, incomplete design, poor estimating, and the lack of integrated systems are all too common pitfalls faced today. Whilst none of these issues are too complex or difficult to avoid through using good practices, the right talent to manage and maintain these good practices and to effectively deliver projects. Coupled with this is the possible use of independent oversight to periodically monitor projects and advise on when the triggers of project failure are becoming apparent, and when project intervention may be required.

The Expo 2020 and Qatar 2022 events have created an exciting environment where both the UAE and Qatar are gearing up to deliver major capital programs to immovable deadlines

So what does good look like in effective project delivery? The answer is: a project driven to completion by a multi-talented team who have experience and understanding of good project control practices, supported by an integrated project management system that provides accurate performance data, and empowered by a decisive project steering committee.

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Project controls
The heart of the successful delivery of any capital project

In my younger days, I was working on the design and build of a shopping center. I was part of the team of architects on the job. I vividly recall a cold winter's morning, standing on site with the team that included the "finance guy", as we called him. He was understandably worried because he had to deliver a difficult message to the project manager and the project owner. The message? The project had run out of cash. The project manager was infuriated but all he could do was throw his hands in the air and walk off the site. Someone in our team said sarcastically, "so much for our project controls!"

What exactly are project controls? What do they do and why are they so important? In fact, in my experience, I have found that if you were to ask many people that question, you may be met with a few puzzled stares. However, the truth of the matter is that project controls are probably the most important element of any successful capital project delivery.

Project controls have much to do with monitoring all the metrics of a project. This can include quantities, time, cost, cash flows, risk reporting, etc. The simple definition in my book is that project controls are all the actions you would take to ensure that your project is delivered on time, on budget and in accordance with the project's design specifications. This of course means that project controls cover the entire life cycle of the project - from its initiation, to the planning, execution, monitoring and control and even at the project close-out phase.

Entities have moved to extreme cases where either too much or too little authority has been placed on the project team

Deloitte was recently engaged by a leading developer who was in the process of completing one of the largest projects in the GCC. We were required to assist with the developer's project controls on their project portfolio.

We assumed that the concept of project controls was nothing new, but we were soon surprised that the developer had not recognized the value of project controls at the outset of the project. What was even more surprising was that this was not unique to our client. We soon found that many developers in the region did not previously recognize the value of project controls in the delivery of their capital projects.

Based on our experience, as advisory partners to many leading developers in the region, I have summarized below what project controls we would expect to see in place on capital projects. This summary is by no means all inclusive, but will go a long way towards delivering a project successfully.

1. Stage gate approvals

As the project moves through the lifecycle from initiation, planning, executing, monitoring and control to close-out, we would expect to see formal sign-off from senior management and the key stakeholders. These stage gate approvals do not allow the project to proceed without the required formal documented approvals in place.

2. Policies and procedures

We have seen the use of detailed policies and procedures leading to improved project delivery functionality, from pre-development through to handover, leading to better decision-making, greater accuracy of forecasted spend and the capability to deliver on budget, thus limiting cost overruns. In essence, defining all the actions needed to be taken in a detailed policies and procedures document provides guidance to your team, makes their tasks predictable and ultimately, limits surprises.

3. RACI matrix

A Responsible, Accountable, Communicated and Informed (RACI) matrix describes the level of participation by the various roles in completing tasks and the project. This simple yet effective tool can be very useful in clarifying roles and responsibilities across the various departments/functions within the team.

4. Delegation of authority matrix

In most cases, we have observed the incorrect use of a delegation of authority matrix. Entities have moved to extreme cases where either too much or too little authority has been placed on the project team. The net effect allows variations to be carried out outside the mandate of the delegated authorities. In many of these cases we have also observed the use of retrospective approvals being obtained when the Variation Order is prepared. Having key personnel with the adequate level of authority and accountability is key to project delivery.

5. Project reporting

Daily, weekly and monthly reporting can provide a good mechanism to ensure projects are being accurately reported on. A report produced for the sake of reporting is meaningless. Below are examples of good practices that should be considered:

5.1 Forecasting and variance analysis

Monthly forecasting and variance analysis is essential to project reporting. The use of variance analysis on "actual" versus "budget" and "forecasted cost" data provides the where did we plan to be, where are we now and what is the expected final cost of the project.

5.2 KPI and project specific KPIs

The project team should meet with senior management and the board at the start and during the project to develop, track and enhance the KPIs. This is the perfect

opportunity to ensure all stakeholders are aligned, and the required KPIs are in place.

We recently reviewed the monthly reporting of a leading contractor and observed that the contractor did not report on "Paid to date." The project team did not feel it was their responsibility to report on this metric as they felt that it was up to the finance team to report on payment related issues. We challenged the Board of Directors and senior management on the lack of input from other departments including finance and procurement departments in the monthly reports. We stressed the importance of including finance and procurement KPIs in the monthly reporting. This would also ensure they are measured accurately and in line with the needs of the business.

5.3 Absence of Early Warning Notices (EWNs)
This is essentially management looking out for anything on the horizon that would affect the delivery of the project. We work closely with senior management and the project team to develop and identify EWNs, so that problems are avoided and projects are successful in delivering the expected value for their owners and other stakeholders.

5.4 Work-in-progress (WIP) management
A recent client had completed his mega project and was happy that his project was delivered on time. While the project was slightly over budget, he believed that he had successfully delivered the project. In the months that followed, to his horror, he became aware of the fact that over 20% of the project value was still "work in progress" and had not been certified and accounted for before. To his disappointment, he began to realize his "accruals" and "WIP management" system was almost non-existent.

5.5 Earned value or value of work done
Like WIP management, the value of work done and earned value methodology needs to be closely monitored. The project team and consultants should be able to demonstrate a robust methodology to measure and communicate the real physical progress of a project taking into account the work completed, the time taken and the costs incurred to complete that work. If done correctly it should allow for effective management decision-making, which helps evaluate and control project risk.

5.6 Risk management function
In our experience, we have seen a worrying trend where we find no evidence to support the fact that our clients identify risks, prioritize them, establish mitigating strategies to deal with these risks and then monitor the effectiveness of these strategies. In other words, we cannot effectively say that the majority of our clients have a robust risk management culture in their organization.

While the previous metrics may seem daunting to a project control office that is still in its infancy, it is important to realize that the aim of these is to provide useful information to management so that a project may be delivered successfully. Most organizations are encouraged to use metrics that work for them. For example, during the course of our advisory work, we have assisted leading clients with the development and use of a one-page project dashboard report. This "one-pager" would ideally be provided to executive management to help them provide the correct oversight on projects. This "one version of the truth" has allowed senior executive management and the project teams to bridge any gaps and ensure project success.

In hindsight, it would have also helped our little shopping center back in the day!

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Capital offence
The need for discipline in Middle Eastern energy and resources projects

Other industries make large capital investments. But, in the energy and resources sector, which is in a much riskier, more rapidly evolving business environment than a number of other industries, delivering capital projects on time and on budget is proving more difficult than ever. There is a large exposure to oil, gas, power and renewables projects in emerging markets, particularly the Middle East, and this can make many aspects of project execution more difficult.

Projects are also larger, and commodity markets and the broader macroeconomic environment within which they are expected to be executed are more volatile and uncertain. Then there is a shortage of experienced talent in an industry which is more labor-intensive than many would imagine. This is because de-manning has finite limits without causing serious HSE issues. Finally there is a toughening but also more uncertain regulatory environment adopted by governments at national and at energy sector level.

Perhaps as a result of these factors, many commentators have supported our own experience that a large percentage of energy and resources projects in the Middle East have not been completed on time and on budget. There are a number of reasons for this, particularly poor coordination between the corporate planning and project management functions. This poor

coordination results in "sandbagging" the initial project budgetary estimates so that the project is never completed over budget. We came across an amusing but worrying example of a project which was completed on budget, but two years behind schedule!

The overall effect of this poor project discipline is significant capital inefficiency where far more capital expenditure is allocated than really necessary and other projects are not started or suffer during execution as a result. The value at risk and the cost overruns resulting from poor execution will run into billions of dollars. So there is real value in enforcing discipline in energy and resources capital projects. How does that discipline manifest itself? There are several aspects to this, and we discuss these below.

We find that disciplined capital projects have fewer changes made to them during the construction phase. Strong, up-to-date information and analytics allow project managers to control projects, if not in real time then on a daily basis, to help them meet internal targets for cost, schedule, quality and the delivery of reliable production capacity. The transition from a capital project to an operating asset is also effectively managed due to more (and more rigorous) upfront planning as well as the efficient transfer of engineering data, information and assets from the project phase to startup operations.

A successful capital project will leverage its supplier base vigorously and effectively without endangering the company-supplier relationship reputationally, or the supplier financially

In the energy and resources sector, well-managed projects use HSE and operational key performance indicators to apply not only to the company's own project employees but also to their contractors, to ensure consistency of objectives. Such projects also have in place strong portfolio and project governance policies to manage risk and uncertainty more effectively.

At the start of a project, a number of assumptions are always made around key areas such as work planning, availability and mix of manpower, logistics, pricing and sourcing of materials and fabrications, as well as the use of technology. Well managed projects have these assumptions updated regularly across the project, to address and correct problems at the outset. This timely intervention requires regular flows of information during rather than at the end of the project.

We have noticed that well run projects also have precise and well thought through definitions of project organization roles and responsibilities that are consistent with their business unit and corporate strategies as well as with their enterprise's appetite for risk. They have policies, methodologies and above all a culture that supports collaboration and good governance across all stakeholders, particularly joint venture partners, contractors and suppliers.

Our experience is that successful capital projects have more discipline and thorough initial project planning, and innovative, flexible contracting strategies that clearly define the project, from capital project to operating asset stages. These strategies assign risks appropriately, and ensure that all stakeholders understand their roles and what the company expects them to deliver.

A successful capital project will leverage its supplier base vigorously and effectively without endangering the company-supplier relationship reputationally, or the supplier financially. Suppliers will be asked to make greater contributions to offset rising asset construction costs, and the project management office will pay more attention to supplier capacity, as well as levels of quality all the way down the supplier "food chain".

Capital projects that perform well will look through the project phase to a future value-producing asset by focusing particularly on end-to-end resource planning and governance, progressive engineering and project data handover (to enable asset commissioning), and production ramp-up, maintenance and improvement activities.

There will also be smooth data and document handover processes in place at an earlier stage of the project than conventional wisdom may deem necessary. These processes will address an appropriate handover procedure, with data and documents in the same formats and using the same systems across EPC contractors, suppliers and joint venture partners. Instead of a one-time data handover at the end of the project, there will be a progressive handover to enable the asset owner to use the information as soon as it is needed. The overall objective here is to bridge the gap between the project itself and ongoing operations.

Whilst supply chain optimization is quite a catchphrase these days, there is no doubt that good supply chain operational readiness is the sign not only of a successful project, but also of its transition to operational start-up. The workforce will be properly managed not only during the project but after it, to develop and transition workers from project execution to start-up support and perhaps asset operation, whilst managing temporary manpower needs and requirements to satisfy local content. There will be in place an effective model to recruit and retain the talent to deliver capital projects on time and within budget. This means balancing internal and external workloads during a project's multi-year lifecycle.

Then there is the degree of automation envisaged for the project. This is perhaps the most contentious issue around capital projects. Our view is that too much automation, often driven by the IT function and supported by overzealous technology consultants, is the sign of a capital project that is doomed to fail. The phrase that "to a hammer, everything looks like a nail" is particularly apt here. It is tempting to seek automation as a default solution when the real benefits enjoyed by a successful capital project will come from gaining a painstaking understanding of those business processes which may (or may not) be automated. Even when an appropriate balance is struck between automation and non-automation, the real benefit will only be derived when teams on the ground embrace automated or non-automated processes that people actually want to (rather than have to) use.

This is not to deny the need for integrated information systems and processes; far from it. But such systems and processes must enable project managers to do their work more efficiently, rather than dictate to them how such work should be done. To enable this harmony to occur, project managers must have an active voice in the design of the many different systems responsible for cost and schedule management, engineering, procurement, contract management and human resources, as well as health, safety, security and environmental obligations.

In summary, the capital projects which the energy and resources sector are tasking themselves to deliver in the next few years are of increasing technical difficulty. To give just one example: the Shah and Bab gas projects in Abu Dhabi are amongst the most challenging in the world, with deep, tight gas reservoirs, high sulphur content, limited terminal space in the case of Bab, and remote location in the case of Shah requiring significant infrastructure. The last thing which energy and resources projects around the Middle East with this level of technical difficulty need to encounter is poor capital discipline through inefficient project management. It would be a Capital Offence to allow this to happen!

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How do you keep track of the assets you built once operational? A question of value

Until very recently, Fixed Assets Registers (FAR) were perceived to have only an accounting value and to be required in terms of compliance and financial reporting purposes. All organizations had to perform fixed assets accounting as per International Accounting Standards and were required to maintain a register to enable such accounting. In most cases, the FAR resided in the accounting department or as a feature in the accounting system of companies, and accountants merely made updates whenever the fixed asset accounts were used in an accounting transaction.

The post-Sarbanes-Oxley (SOX) environment, however, has emphasized greater corporate and Company Officer (CO) accountability, and both US GAAP and IFRS have required an enhanced transparency. Fixed assets, which generally represent the biggest line item of a company's balance sheet – are under greater scrutiny today than ever before. The importance of an accurate and well-documented fixed asset record is important, but maintaining a reliable fixed asset inventory is a challenge and labor-intensive task for any enterprise, public or private.

Inaccurate fixed asset records can be detrimental to an organization, raising financial, operational and strategic risks. Some of the implications include:

1. Inaccuracies in financial reporting
2. Difficulties in annual capital budgeting
3. Lack of accurate fixed asset details required during mergers or acquisitions

Establishing and maintaining a fixed asset accounting system is an important task for both the public and private sector. A FAR must be kept in order to be in compliance with legislation governing corporations, companies, etc. It allows a company to keep track of details of each fixed asset, ensuring control and preventing misappropriation of assets. It also keeps track of the correct value of assets, which allows for computation of depreciation and for tax and insurance purposes. A FAR also allows a company to keep track of fixed assets that are not under simple, direct control of the company. This means owned and leased assets, assets under construction, and imported assets.

Question of management control

Possibly the FAR has gained more value when organizations grew either organically or inorganically to establish a multi-location/country presence and thereby built a fixed asset base substantial in value. Custody definition and physical verification processes have become key to establishing the desired level of control. It no longer is a question of a mere accounting update but also management control over assets is critical. Companies recognize the need to put policies and procedures in place to decide the responsibility for custody of assets and updating fixed assets records.

A FAR also allows a company to keep track of fixed assets that are not under simple, direct control of the company

Importance of asset lifecycle management

As assets become more valuable to organizations, it is important to manage these assets in terms of their maintenance and upkeep. Whereas this was always done by corporates in the past, there was no real way of knowing whether all assets have been maintained optimally given the quantum of assets that need to be maintained.

The advent of asset management systems has helped address this to a large extent. The features of a standard asset management system have helped corporates itemize their assets to the most granular level, componentizing larger assets to a level whereby each component could have a different maintenance lifecycle which could be individually as well as collectively managed. These systems capture all relevant specifications and history of the asset, and management can access the asset details at the click of a button.

From a bottom line management perspective, the asset management systems have also helped account for the cost of maintaining each such asset. For those who use these systems, the implementation of these systems has helped:

1. Create a comprehensive asset database
2. Optimally utilize all assets
3. Manage costs of asset maintenance
4. Ensure maximum useful life of these assets
5. Manage timely replacements wherever required

Interestingly, FARs prepared from an accounting point of view could not provide the above benefits, even though custody and asset protection were key objectives.

New uses of the asset register

The financial meltdown of 2008 changed the way asset base and asset records were perceived. Assets defined as collateral security for debts provided by banks suddenly lost their economic value or had just disappeared. In some cases, assets were put as collateral for multiple debt transactions – presumably because no one knew which asset exactly was being listed.

In reaction, financial regulators and governments have started putting in increasingly stiff requirements on assets put on as collateral securities. It is now required for the financial institutions/banks to track the status of the asset and its recoverability at all times of the debt servicing period.

As banks increasingly re-design their process for selling their debt products, they are increasingly insisting on corporates to demonstrate more accurate details of the assets that are being provided as collateral.

In addition, the period between 2008-2013 has seen a lot of companies either being acquired or merged with others to achieve efficiencies and economies of scale. During such transactions, having a well maintained fixed asset record has been an imperative to ensure the correct valuations of these companies. Similarly companies looking to raise external debt financing or considering an IPO will increasingly need an integrated FAR platform to provide third parties with the financial assurance they will undoubtedly seek in consideration of such transactions.

Hence, it is only natural that the importance of the asset register has been established. It has become important that assets tagged for such collateral and their respective asset custodians are increasingly required to report on the status of the assets at the various stages of the entire asset lifecycle.

The way forward

The need for a well updated asset register is no doubt well understood. What is, however, not so well appreciated is the need for putting in systems and processes that can ensure such an updated asset register on a real time basis. The mindset to view asset registers from an accounting point of view and asset management systems as another point of view needs to be merged as it is no longer possible for one to have a comprehensive asset register without integrating the two.

It is now required for the financial institutions/banks to track the status of the asset and its recoverability at all times of the debt servicing period

It is important to understand that while the asset database would be a single one, the way one looks at the data could be different. Auditors, the banks and the maintenance teams could revert to such well-maintained systems to extract information as may be required. For achieving the same, there must be processes and systems that need to ensure that all data elements in the integrated asset database be updated at all times, with each information stakeholder having a role. Awareness of the need for all stakeholders needs to be created amongst all. Finally, reporting mechanisms need to be put in place for all to be able to access the integrated database the way they need to, in order to meet the requirements of their respective owners and move to an integrated asset management and accounting solution for their respective company's needs.

With asset value becoming increasingly important to drive business value, leading companies need to ensure at their heart is an integrated Fixed Asset Register (FAR) platform that is dynamic and not passive to underpin business performance and development.

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GCC Construction sector overview 2014

Deloitte provides a detailed construction sector overview including forecasts, mega project details, and macro-economic data.

For more information, please visit **www.deloitte.com/construction/gccpoc2014**

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