

The background of the slide is a photograph showing the silhouettes of several construction workers on a building site. They are working against a dramatic sunset sky with orange and yellow clouds. One worker in the center is holding up a large, flat object, possibly a piece of equipment or a panel, which is suspended by cables. Other workers are visible in various poses, some standing and some moving. The overall scene is dark, with the workers' forms highlighted by the bright light of the setting sun.

**strategy&**

*Formerly Booz & Company*

# *Mastering construction costs and capabilities*

## **Laying the foundations for success**

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# Executive summary



**The construction industry in the GCC<sup>1</sup>** has grown rapidly over the past decade driven by such factors as high oil prices and a growing population. Construction companies expanded quickly with limited control of their costs, workforce skills, and capabilities. However, the recent economic and geopolitical shocks caught them by surprise, and are forcing them to cut costs abruptly and tighten their operations. Based on our experience, we believe contractors can navigate a dynamic business environment more efficiently by achieving lean operations and improving their management capabilities. Specifically, they should apply a structured approach to managing their two biggest costs: manpower and procurement. Companies need to develop a more flexible organizational model, with centralized functions, the right incentive structure, a culture based on performance, and strong project management capabilities.

# *Growing challenges in the region*

Construction companies that operate in the Middle East face a range of challenges that grow more complex every year. Volatile oil prices and the rapidly changing geopolitical dynamics in the region have a direct impact on the construction industry. On the labor front, manpower costs are increasing due to the need to hire nationals, new regulations, and the growing cost of foreign worker permits.

Competition is growing more intense as well, particularly from foreign players. These competitors are bringing management expertise to their projects in the region, enabling them to operate more efficiently — and thus increasing the price pressure on local contractors. Relatedly, customers are now able to exert greater control over project management, frequently pushing contractors to assume higher levels of risk. For example, lump-sum contracts are becoming the norm, rather than the traditional cost-plus structure. This shift requires construction companies to manage costs more closely and to minimize the possibility of project overruns.

To meet these challenges, we believe that GCC contractors need to focus on three specific areas:

- managing manpower more effectively, through enhanced planning, recruiting, and management of workers, which we have found can yield staff reductions of 10 to 20 percent
- procuring material and services more efficiently, by creating strategies for each spending category and planning purchases on a company-wide level, which our experience shows could yield savings of 5 to 10 percent on procurement costs
- developing a more flexible organizational model, through cross-functional teams, a performance-based culture and incentives, and strong project management capabilities, which fosters better on-time project delivery, quality, and safety adherence, a step that could result in at least a 2 percent improvement in project costs

*Customers are now able to exert greater control over project management, frequently pushing contractors to assume higher levels of risk.*

# Managing manpower more effectively

As the GCC economies have grown rapidly in recent years, deficiencies in contractors' manpower management cycles have been exposed. In fact, contractors have recruited thousands of workers with limited control over their quality and ability to fulfil their tasks. This rush to fill labor demand has led to unqualified and unproductive workers on projects, a misalignment between skills and job responsibilities, and an inaccurate matching of resources to needs. Some projects are overstaffed with idle workers, while others face a shortage of workers and skills (see "Typical manpower issues").

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## **Typical manpower issues**

Several recurring problems in managing human capital in the construction sector can have major implications on costs.

### **Unplanned and rushed recruiting**

- A lack of centralized manpower planning and recruiting leads to either overstaffing or a manpower shortage on projects throughout a company's project portfolio
- The company recruits unqualified manpower
- The human resources (HR) database inaccurately matches worker designations and actual trade skills

### **Suboptimal distribution of workers on projects**

- The company deploys a higher-than-normal number of workers on projects to compensate for a lack of productivity

- Team structures on these projects are unbalanced, as engineers and foremen are forced to oversee too many or too few workers
- Other projects remain understaffed

### **A limited manpower assessment and reward system**

- The company cannot accurately distinguish productive workers from unproductive workers
- Without a performance-based reward system, it is difficult to motivate the workforce
- Workers receive insufficient training, leading to capability gaps, inadequate in-house skills, and the departure of high performers to competitors

Based on our recent experience, contractors in the GCC that improve their manpower management cycle can reduce their total head count by 10 to 20 percent without affecting project schedules and quality. Achieving such reductions requires a number of measures.

### ***Manpower planning and recruitment control***

Effective manpower management begins with planning and recruiting. Contractors need a comprehensive manpower plan that compares their forecast manpower requirements with their current capacity, with comparisons made by trade and on an annual basis. Any gaps between requirements and available capacity are filled through recruiting. Conversely, excess capacity requires reducing the size of the workforce. The manpower plan should also address the productivity rates of different work teams, to identify training needs and improve the capability of the workforce over time.

Developing an accurate and informative manpower plan is a joint effort between the operations, planning, and HR functions. Therefore, it is critical to establish a centralized, cross-functional task force or a dedicated department that will implement the manpower planning and coordination process from start to finish.

A corollary of the manpower plan is the recruitment plan, which begins with a list of specific gaps that the company needs to fill. Recruiting requires greater control than companies have managed in the past. Most recruiting agencies are compensated by volume, rather than the quality of the workers they place. To overcome this issue and ensure incoming workers have the required skills, contractors may need to develop — or acquire — capabilities in labor-testing and assessment as part of their recruiting function.

### ***An accurate and up-to-date HR database***

Contractors should maintain centrally an accurate employee database if they are to improve how they manage and control manpower. An accurate and up-to-date HR database should include — at a minimum — the employee name, identification number, date of hire, designation (by skills, trade, and qualifications), position, appraisal results, and compensation. Without this information, companies will not be able to staff a project with the correct skills.

### ***Manpower assignment and deployment***

Manpower deployment refers to how the contractor allocates and handles its workforce across various projects. Many GCC contractors commonly handle manpower solely within an individual project, rather than across their entire portfolio. That approach limits coordination and workforce utilization. It results in a mismatch between manpower requirements and capacity for a given project and creates a constant chore for project

*Developing an accurate and informative manpower plan is a joint effort between the operations, planning, and HR functions.*



managers to either add the workers they need or release those they do not. This has a direct impact on the company's profitability and monthly cash flow.

Improving the allocation of labor requires establishing a centralized manpower management function that can coordinate needs across all projects, strategically deploy workers, and improve utilization and productivity for the overall company.

### ***Span of control management***

A consequence of "random" manpower assignment and deployment on projects is that the "span of control" within project teams becomes inefficient. The span of control refers to the ratio of people in adjacent layers of the organization, for example, the ratio of foremen to tradesmen, or construction managers to site engineers. The span of control can vary widely depending on a range of factors, including:

- the geographical layout of the project
- the job's nature — sighted versus unsighted (i.e., whether supervisors can or cannot see what workers are doing), repetitive versus one-off, labor-intensive versus specialized
- the experience of the team and its ability to handle larger jobs
- the degree of support from subcontractors and required oversight
- the project's technical scope
- the extent of process standardization and automation
- client requirements, especially with regard to quality standards

It is difficult to apply a universally "correct" span of control ratio for all situations because so many factors are involved. Nonetheless, contractors can still apply industry benchmarks. We believe that the current span of control for most contractors in the GCC is not aligned with that of foreign competitors. At an aggregate level, we have found that GCC contractors have a ratio of one indirect employee to every two to three direct employees.<sup>2</sup> Among their global competitors, the aggregate ratio is more commonly one indirect employee to every four direct employees. Once the overall span of control target is set, project directors can then determine the right span of control for individual projects, tasks, and teams.

To put the monetary savings into perspective, such improvement in the span of control can potentially lead to savings of 5 to 15 percent in total manpower cost, or US\$600,000 to \$1.8 million per year for every 1,000 employees.

### ***Manpower performance management***

One of the key levers to increase organizational productivity is an effective performance reward mechanism for both white-collar and blue-collar employees. For white-collar staff, contractors need to implement a performance management system (PMS) that instills a strong performance-based culture. The typical PMS cycle calls for

annual reviews, to ensure that white-collar staff achieve their objectives and have a sustainable long-term impact on business performance. An effective PMS should account for the following parameters:

- connecting business objectives with individual goals, competencies, and compensation
- supporting development along individual career paths, and succession planning for key roles
- setting up periodic follow-up and feedback, based on well-defined criteria and competencies

For blue-collar employees, performance management should involve a cyclical appraisal, typically performed on a quarterly basis. This is because blue-collar employees do not typically value future rewards. Hence, the pay-out should be near enough to truly motivate them. Site managers should undertake the assessment and consider two principal elements: behavioral and technical competencies.

The behavioral assessment typically includes elements such as punctuality and attendance; planning, execution, and monitoring of work; the quality of executed work; and awareness of and adherence to standards regarding health, safety, security, and the environment.

The technical assessment is specific to each trade, and should consist of four to eight competencies, including the handling of materials, tools, and equipment; planning and executing the job; and tidiness of the workspace.

There are three options for how to handle the assessment process.

1. Contractors can conduct the assessment using their own employees. A common practice in this situation is to have managers who are one and two levels above the person being assessed conduct the assessment. For example, for a tradesman, his direct foreman and the site engineer would fill out the assessment sheet.
2. Contractors outsource the assessment process, typically through an external provider that has specialized skills in construction.
3. Contractors use a hybrid “train-the trainer” approach by hiring an external assessment firm to train in-house employees to conduct manpower assessments and ensure quality of the assessment.

### ***Alignment of skills with job designation and salary***

The shortage of labor in the region, fueled by rapid growth in the GCC construction industry, has attracted less-skilled workers to construction jobs and means that some contractors pay their workers more than the market. To address this problem, contractors should leverage the

*Some contractors pay their workers more than the market.*



performance assessment process discussed above to align skills with the right job designation and then with the appropriate salary.

### ***Training and retaining high performers***

Among other objectives, performance management cycles can identify the development needs for each employee. Companies should coordinate all training calendars and curricula through a central entity, and update them annually. Managers who collaborate in addressing the development needs of their workers will likely find that the extra time and effort pays dividends in terms of better performance and productivity on projects. Moreover, all leaders should send clear signals that training is not a formality but rather a prerequisite for career progression — and even to remain at the firm.

Regarding retention, contractors must realize the value of retaining high performers, and reward them by ensuring that their compensation is on the higher end of their group's pay scale.

# Procuring more efficiently at lower cost

Procurement constitutes about 60 percent of a contracting company's cost structure (including raw materials and subcontracting). Yet companies in the GCC often have large inefficiencies in their procurement functions, leading to unnecessarily high costs. Our recent experience indicates that contractors can save 5 to 10 percent on their overall procurement cost with varying percentages across procurement categories (see Exhibit 1).

*Exhibit 1*  
**Examples of potential procurement savings by category for GCC construction contractors**

Category	Minimum	Maximum
Services – Concrete	3%	6%
Services – Electromechanical	3%	8%
Services – Finishes	5%	13%
Services – Equipment	7%	14%
Materials – Concrete	6%	11%
Materials – Finishes	9%	18%
Materials – Furnishings	9%	16%
Materials – Electrical	2%	5%
Materials – Plumbing	5%	10%
Corporate	5%	10%
<b>Total spend</b>	<b>5%</b>	<b>10%</b>

Source: Strategy&

Capturing these savings requires action in several areas such as spend analysis, category management, procurement planning, value engineering, cash flow management, and technology usage.

### ***Spend analysis***

To improve procurement, you need data. Specifically, companies need to analyze their current spending by answering the following questions so that they can generate a complete picture of procurement:

- What are we buying?
- Who are we buying from?
- Are there opportunities to reduce spending?
- Can we obtain better terms from our suppliers?

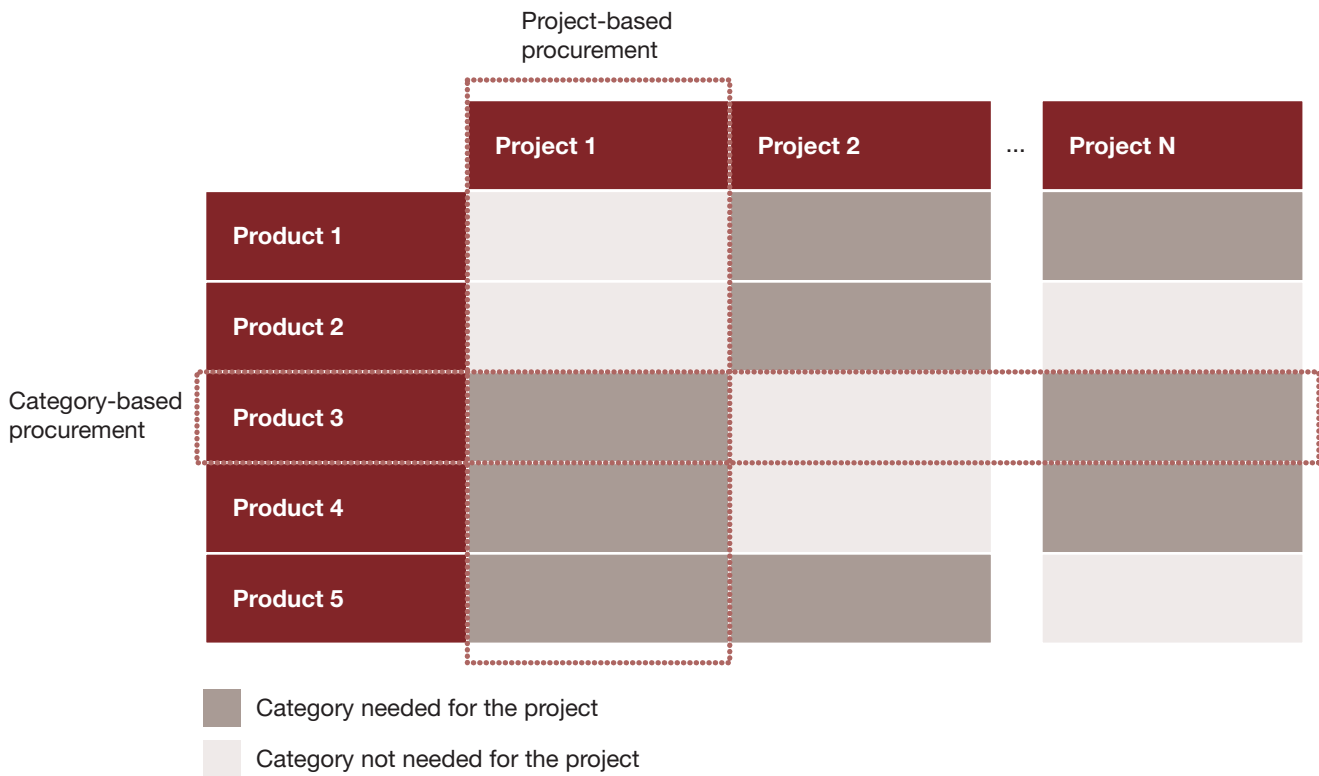
Answering these questions helps contractors gauge potential saving opportunities and identify specific areas to pursue. If they are properly recording operational data, companies can automatically analyze spending through their enterprise resource planning (ERP) system.

### ***Category management***

Contractors can develop specific strategies for each procurement category once they have a view of procurement spending derived from data. For example, they may try to reduce the number of suppliers to increase the volume per supplier — and/or pool demand across the entire portfolio of projects — leading to potential volume discounts and greater negotiating power. Contractors may also establish strategic partnerships with key suppliers, allowing them to collaborate on ways to reduce costs across the value chain.

In our experience, contractors can reduce costs significantly by using category-based procurement instead of project-based procurement (see Exhibit 2). The majority of savings typically come through forecasting demand across product categories, pooling orders across projects, managing inventory more effectively, and reducing rush orders and late deliveries.

*Exhibit 2*  
**Category-based procurement versus project-based procurement**



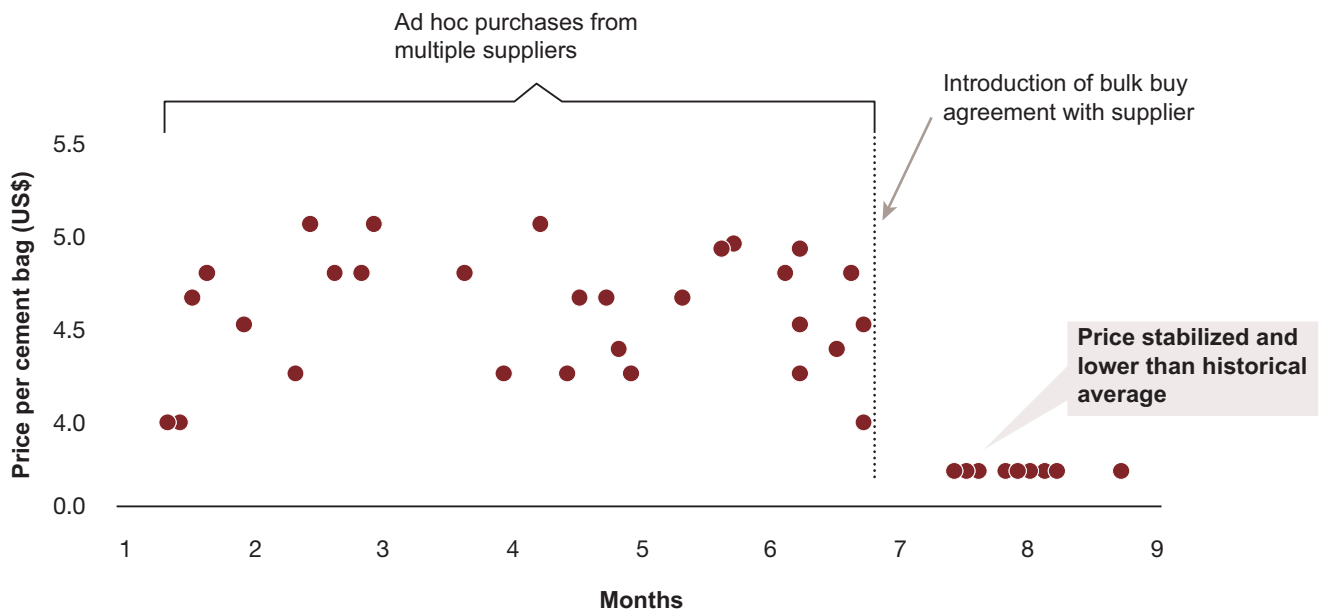
Source: Strategy&

***Procurement planning***

Advance planning is also critical in reducing procurement costs. Developing an accurate plan for each project and then consolidating plans at the corporate level gives the central procurement function greater visibility on costs and time across the project portfolio. In addition, a consolidated procurement plan allows contractors to forecast their procurement cash flow.

One of the benefits of a consolidated procurement plan is that it allows contractors to leverage master purchasing agreements (MPA), which generally lead to discounted prices for bulk orders. Based on our recent experience, exclusive MPAs with suppliers for each procurement category can lead to cost reductions of 5 to 10 percent for standard products such as masonry blocks, cables, paint, and galvanized metal (see Exhibit 3). In addition to generating financial savings, MPAs can streamline the procurement process through blanket purchase orders, minimizing internal bureaucracy and time.

*Exhibit 3*  
**A master purchasing agreement can stabilize and lower prices**



Source: Strategy&

One aspect of MPAs that is particularly relevant for construction companies is the step function. Step functions ensure progressive discount rates for increasing spend levels, and thereby reduce the cost of atypical categories with uncertain forecasts (such as furniture or decorative fixtures). For example, in crafting an agreement with a reputed furniture supplier in the GCC, one contractor included a step function that generates an additional discount of 5 percent for purchases that exceed \$1 million over a defined period of time.

### **Value engineering**

Value engineering in construction traditionally refers to the provision of an equal or better solution to a client, significantly lowering the overall cost of construction. In the GCC region, value engineering is typically associated with alternative design and/or material, yet the concept is not limited to that. Value engineering can have an even bigger impact in improving construction methods. For example, a contractor could prefabricate complete kitchen pods in an off-site assembly line and then ship them to the site once the building structure is ready. This “plug and play” approach saves enormous construction time and costs compared to the traditional method of fabricating everything on site.

### **Cash flow management**

Our experience with contractors in the GCC shows that many procurement departments negotiate supplier payment terms and conditions without involving the finance function. The most common approach is to extend the payment terms as long as possible, which has both operational and financial consequences.

Operationally, finance has little visibility regarding terms. Often it must scramble to find the funds needed to meet supplier payments. All too often, mismanaged cash flow leads to missed payments, at which point suppliers stop delivering products to job sites, work halts, and projects get delayed. Financially, pushing out the payment schedule does not necessarily mean the best terms for the company. In fact, suppliers tend to charge for longer payment cycles, either directly or indirectly, in which case, using a bank loan to pay cash to a supplier may ultimately be

*Step functions ensure progressive discount rates for increasing spend levels, and thereby reduce the cost of atypical categories with uncertain forecasts.*



cheaper for the contractor than a deferred payment to that supplier. To avoid these issues, procurement and finance should work closely together to determine the right funding approach for materials and subcontracts, both in terms of reducing costs and to establish consistent, predictable cash flows.

### ***Technology usage***

Finally, technology can significantly improve procurement, particularly an ERP system that companies can leverage to manage more efficiently their supply chain and procurement. The right ERP system offers a range of benefits. First, it enforces standardization and control over procurement processes across the company. Second, it increases speed and efficiency, accelerating the overall procurement cycle and reducing man-hours spent on paperwork. Third, ERP systems provide automated, live analysis and reporting on spend by project and by category. This creates visibility for all stakeholders on the status of spending and delivery and gives buyers all the information needed to negotiate a future contract.

# *A more flexible organizational model*

To enable the manpower and procurement savings and benefits, construction companies need to develop the right organizational model. This model must be flexible across various dimensions. Specifically, companies should focus on four priorities.

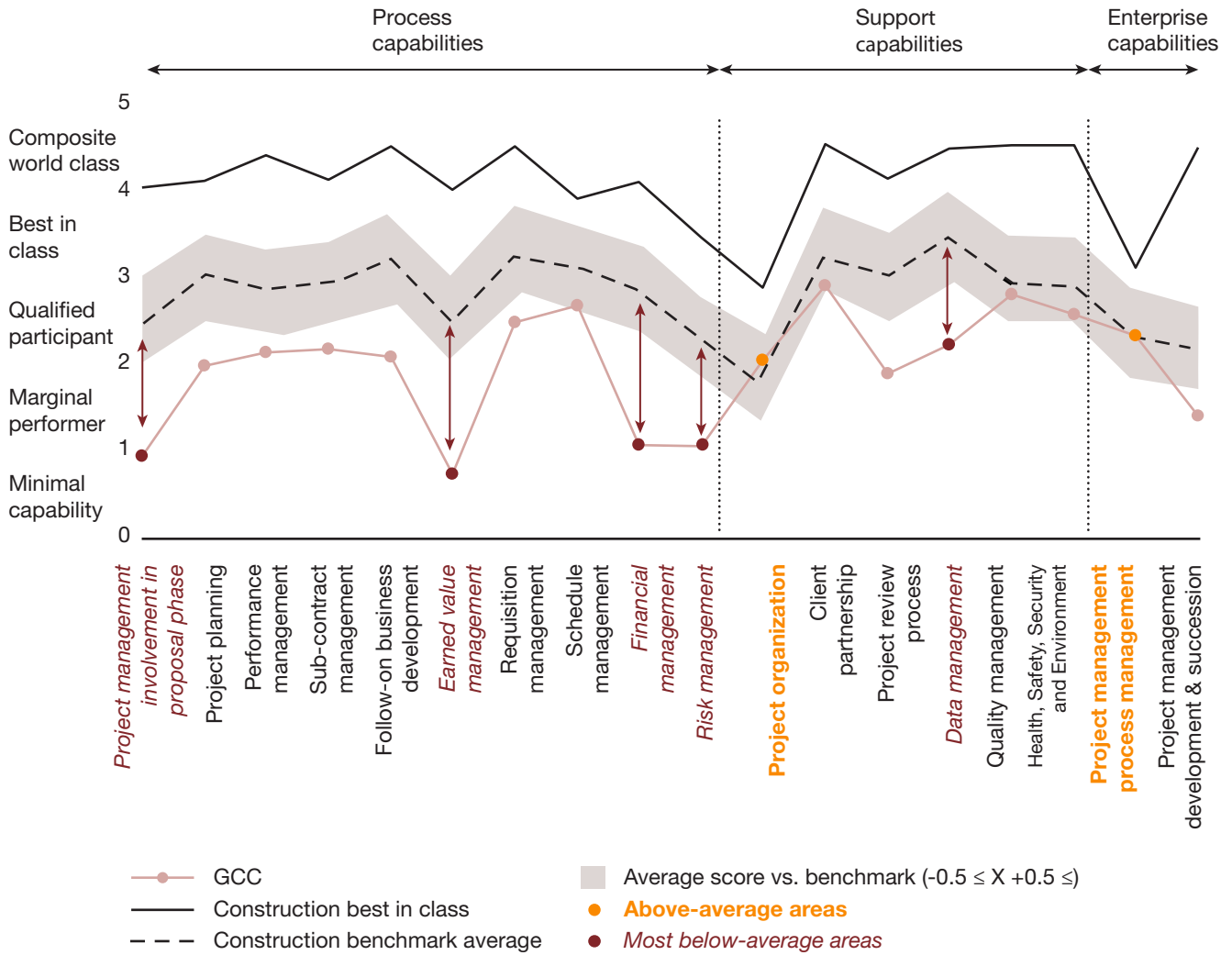
1. Contractors should centralize their manpower and procurement functions, creating a more comprehensive view of the organization's labor demand and supply, and allowing it to take advantage of scale effects when purchasing materials. These cross-project functions help break down silos and allocate resources more effectively.
2. Contracting companies need to invest in core construction capabilities, including project management; cost control; planning; contract administration; quality; and health, safety, security, and environment (HSSE). For example, we have found that the project management capabilities of GCC contractors are consistently below the average of worldwide capabilities (*see Exhibit 4, page 17*).

We also captured the importance and impact of each capability on project success, as measured by on-time completion, adherence to budgets, and quality. The capabilities that showed the highest correlation to project success were schedule management, earned value management, and financial management.

3. Incentives are a valuable tool in shaping organizations and aligning interests between shareholders and employees. Construction companies should tailor the right incentive structure for both white- and blue-collar employees, and reward both based on their ability to deliver high-quality work in a productive manner.
4. Contractors need to introduce a performance-based culture, which includes meeting timelines and quality standards, while also generating reasonable profits. The new culture needs to foster accountability and sense of ownership, cascading across all levels of the organization — from the CEO down to tradesmen on project sites.

*Contracting companies need to invest in core construction capabilities.*

*Exhibit 4*  
**GCC construction capabilities are below best in class**



Note: Benchmarks include 20 construction companies.  
 Source: Strategy& analysis

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# *Conclusion*

In the past, construction companies in the GCC have been able to thrive with limited emphasis on operations and management, due to a relatively stable local economy and limited competition. This no longer applies. With a far more dynamic geopolitical and economic environment, and global competitors increasingly doing business in the region, local players must take action if they are to compete. We believe that success requires addressing their two biggest cost elements — manpower and procurement — along with establishing the right organizational structure and project management capabilities. By taking these steps, GCC construction companies can reduce their costs, operate in a far more flexible and lean fashion, and position themselves to win regardless of what the future holds.

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# *Endnotes*

<sup>1</sup> The GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

<sup>2</sup> “Direct employees” refers to blue-collar employees on the construction site. These include foremen, tradesmen, labor, and equipment operators. “Indirect employees” refers to all staff working in offices, workshops, or stores. They may include white-collar and blue-collar employees, such as office staff, lab technicians, or storekeepers.

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