2.2. Unleashing long-term value through operations excellence

Unleashing long-term value through operations excellence

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For many companies, operations—the very core of their business models—can become an Achilles heel as legacy attitudes and entrenched habits block performance improvements. Building operations capabilities can unleash tremendous efficiencies and performance improvements that link directly to a company's profitability. Scale and inertia often combine to make it difficult to change how these ongoing activities are carried out and to reap the potential benefits.

But change is possible. A capability building program at a large Asian energy company triggered cumulative operations savings of about US$500 million within the first 2 years. The success was based on early wins that helped build momentum, a balanced view of which capabilities to address, and a line-led approach, in which line managers with responsibilities for profitability took ownership of the effort.

Shaking off legacy habits

With annual revenues of more than US$50 billion and more than 10,000 employees, the energy company found itself at a crossroads. Demand for its products was increasing, but low operating efficiencies prevented it from taking full advantage of the favorable market environment. As a state-owned enterprise, it was held back by an entrenched bureaucratic culture, and these legacy attitudes were difficult to shake off. In addition, government stakeholders eyeing an eventual privatization were demanding better results from the company.

Recently, the company launched a transformation program that centered on its oil units, including exploration and production, refining, marketing, and trading. Through a combination of operational excellence and strategic investments, the company's goal was to create a modern, world-class oil portfolio. With refineries spread across remote locations on different continents, reaching their aspiration would not be easy.

In putting the capability building program together, top management directed their efforts around three central principles:

- **Double-pilot rollout.** The program was designed in two stages. The first concentrated on gaining quick wins to demonstrate the program's bottom-line impact and build critical momentum. The second emphasized piloting internal institutions to embed changes into the fabric of the company and promote sustainability
- **Holistic focus.** To achieve maximum impact, leaders took a balanced view of the range of capabilities that would be built. Technical systems, management infrastructure, attitudes, and leadership would all be addressed to push performance improvements and sustainability
- **Line-led approach.** Line managers would take ownership of the program at all stages, guided by change leaders who acted as coaches on decisive topics. A standardized set of capability building modules would accelerate the training and rollout.

Quick wins to establish momentum

Following a 10-week diagnose and design process, the company began the first stage of its capability building program, which focused on demonstrable impact through quick wins and on building the momentum for change. This stage of the operations performance improvement effort would be delivered in three successive waves to the company's far-flung refineries over 2 years. The sequenced approach was designed to use scarce training resources effectively, and in addition successive waves would build on the successes of the previous wave.

As the program came to each refinery, initiatives were launched that reached across its operations and deep within each unit to attain maximum impact. This approach allowed the company to implement operations changes quickly throughout the plant while ensuring that specific efforts within each unit delivered the greatest improvements.

Each element of the capability building program addressed four essential aspects of operations:

- **Technical system.** Within the technical system, two types of improvement opportunities were identified and tackled—value creation opportunities, such as optimization, fuel reduction, and loss reduction; and value protection opportunities, such as safety and reliability improvements
- **Management infrastructure.** The emphasis here was on performance management, and measures included building clarity around key performance indicators by ensuring that these metrics cascaded throughout the plant's hierarchy, and by ensuring visual management or creating transparency around operational standards
- **Attitudes.** Individual attitudes also had to be adjusted to achieve the program's full potential. Initiatives here focused on improving the overall performance culture at the plant and aligning leaders to top management's vision for the future
- **Leadership.** Initiatives also focused on improving leadership culture and behavior, particularly among the plant managers. In addition, capabilities in coaching and developing subordinates were enhanced.

The programs were delivered in standard formats at all locations and featured a variety of adult learning techniques, including boot camps, to encourage understanding and retention. Typically, boot camps were held every 3 to 4 months to assure rapid dissemination of the new approach to operations.

In addition, internal members of the team were offered programs that emphasized building their own capabilities and developing their leadership skills. To supplement the boot camps, their sessions included tools-down days every 2 weeks that targeted near-term skills development. During tools-down days, team members would step away from their routine work to share their initial progress and receive feedback from colleagues. Although more informal than boot camps, these sessions gave participants personal coaching and individualized guidance on some of the more practical skills they were learning, such as how to influence senior managers or handle conflict.

The first stage of the company's capability building program was an unquestionable success. Within 2 years, the quick wins brought about US$500 million in cumulative savings through, for example, production increases, better plant reliability, and greater energy efficiency.

Such a holistic approach to delivering impact while building line capabilities has been applied in many companies across a variety of sectors. Over the past 5 years, for example, chemicals manufacturers, cement producers, and power generation plants (among others) have delivered bottom-line impact and developed a cadre of operational and change leaders using this approach.

Embedding the changes

The next stage of the company's capability building program shifted focus. After proving the value of the program through quick wins in the first stage and building momentum for change, the company sought to scale up the effort and institutionalize operational excellence while continuing to deliver performance improvements.

These efforts would help sustain the operations improvements already achieved, develop additional capabilities, and renew the commitment surrounding the transformation. In particular, the second stage worked across three dimensions:

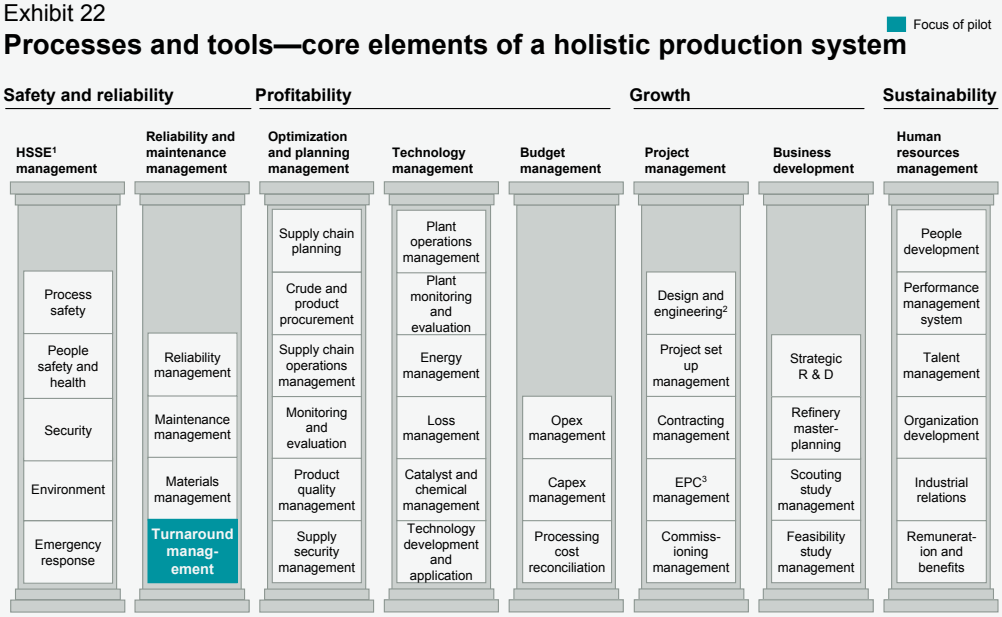
- **Performance.** Maintaining and improving further refinery performance through additional value creation initiatives and performance management
- **Process.** Creating a production system to capture, codify, and institutionalize standards for operations excellence across all the refineries
- **People.** Establishing an Operations Academy, a centralized system for building capabilities, supporting the production system's development, and helping develop and disseminate operations standards.

The production system was central to embedding operations excellence in the company's fabric. As part of their work in developing the system, top managers and change leaders visited Toyota City in Japan, where they learned the basic principles of building a world-class production system and were able to imagine such a system as part of their own operations. Top managers deliberately chose a company outside the oil industry to explore universal, fundamental principles of best-practice production systems. The crucial learning from the visit and other studies was that the best production systems go well beyond technical manuals to embrace a holistic perspective that links guiding principles and specific tools.

The company created its production system around three core elements. "Vision" articulated the company's overall philosophy and goals. "Principles" were the fundamental concepts that would help achieve the vision. "Processes and Tools" were the practical measures, aspects, and frameworks that would govern all operations activities (Exhibit 22).

As with other parts of the capability building program, a pilot program was used to test and demonstrate the value of the production system before it was rolled out further. The pilot focused

Exhibit 22
Processes and tools—core elements of a holistic production system



1 Health, Safety, Security, Environment
2 Includes Basic Engineering Design (BED) and Front End Engineering and Design (FEED)
3 Engineering, Procurement and Construction

SOURCE: McKinsey & Company disguised client example

on plant turnaround maintenance. The process was divided into 10 steps, and each step was implemented in sequence. After each successful implementation, the process was carefully codified (Exhibit 23).

Special focus: Operations Academy

The Operations Academy was a critical element in sustaining the improvements achieved during the company's capability building program and deserves special attention. By creating the Academy, the company built a central repository for its best thinking on operations excellence. In addition, the Operations Academy was an integral component of the production system.

Four pillars—the school, the book, the system, and the people—were essential to the design of the Operations Academy (Exhibit 24).

The school

The school, or structure of the Academy, was built around a model refinery that showed how specific operations initiatives could be put into practice. The model refinery was established on the site of the first pilot and new participants could go there to witness the processes, tools, and attitudes that led to operations excellence.

In addition, the Academy supported the Center of Excellence—the evolved status of the operations performance improvement initiative, which was now the custodian of the production system. The Center of Excellence was part of a three-tier system that included a knowledge management system and communities of practitioners.

The book

The book represented the curriculum of the Academy. Its purpose was to identify training modules required to support the capability building program as well as employees whose participation in these modules would bring further performance improvements. Modules were evaluated based on their impact on performance and sustainability and on their potential to improve the execution of routine tasks, problem solving skills, and coaching.

Exhibit 23

Best practice standards, processes and tools were developed

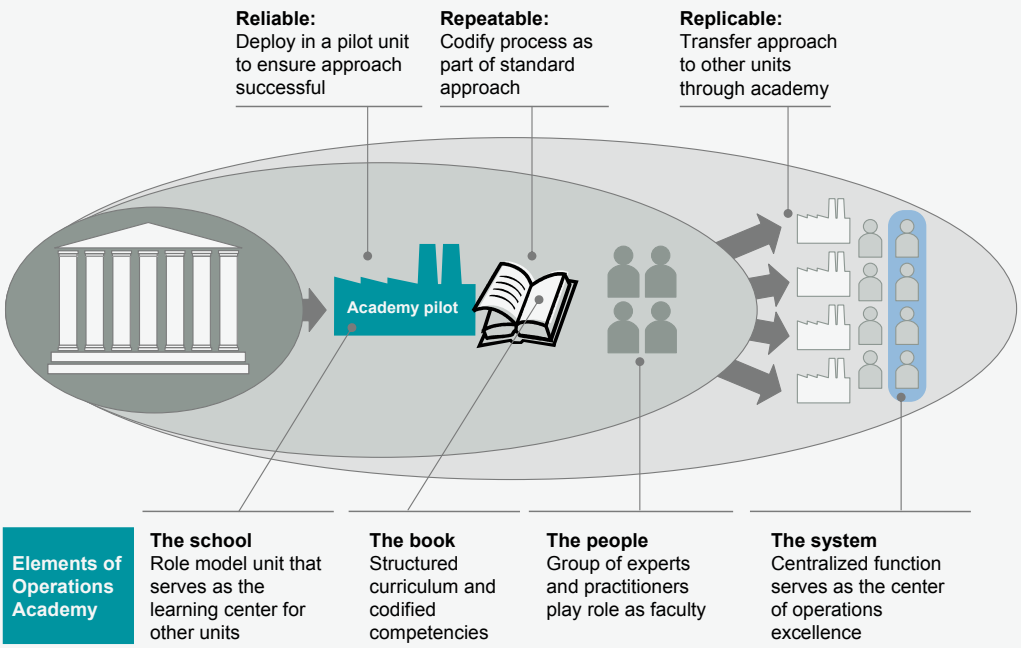
PILOT TURNAROUND

Typical timing	T-18	T-15	T-14	T-9	T-7	T-6	T-1	T	T+3
	Preparation phase						Execution phase		Post TA
Turnaround process (TA)	1 TA Goal & Strategy	2 Setup TA organization and KPIs	3 Scope Development	4 Detailed Planning	5 Detailed scheduling	6 Contractor management	7 Pre-execution	8 TA execution	9 Start up process	10 Post implementation review
Critical tasks (examples)	▪ Set Interval ▪ External management ▪ Planning tool selection ▪ Budgeting ▪ Master schedule	▪ Optimal organization structure ▪ Roles & responsibilities ▪ Staffing schedule and link to rest of organization ▪ KPIs ▪ Critical success indicators	▪ Identify Risk Process ▪ Collection of internal tasks e.g. – Risk based inspection – Equipment optimization – Management of change ▪ Scope challenge & freeze process ▪ Prepare job list ▪ Prepare bill of materials	▪ Work scope analysis ▪ Prepare job plan ▪ Cost estimation ▪ Turnaround "work grouping" preparation & out sourcing schedule ▪ Procurement strategy ▪ Budget allocation ▪ Materials arrival scheduling	▪ Develop network & detail schedule ▪ Optimization tools, equipment & heavy equipment ▪ Critical path management ▪ Develop detailed schedule ▪ Develop pre-startup safety review	▪ Contractor scoping analysis ▪ Selection criteria ▪ Contract type ▪ Tender process ▪ Develop contractor performance criteria & indicators ▪ Contractor Safety Management System	▪ Prework activity ▪ Critical equipment execution scenario ▪ Facility layout ▪ Permitting process ▪ Decontamination preparation ▪ Shut-down preparation ▪ Kick off meeting with contractor	▪ Shutdown execution ▪ Decontamination process & release equation ▪ Supervision mechanism ▪ Schedule adherence & progress control ▪ Change order management ▪ Health, Safety, Security, Environment (HSSE) management ▪ Quality control ▪ Handover to line process	▪ Pre-startup safety review ▪ Commisioning ▪ Start up and feed in	▪ Preliminary report ▪ Codifying learning ▪ Close out report (Inspection report & post turnaround process report, next turnaround process planning) ▪ Master schedule for next turnaround process ▪ Management of change

SOURCE: McKinsey & Company disguised client example

Exhibit 24

Operations Academy



SOURCE: McKinsey & Company disguised client example

In addition, the book would develop appropriate approaches to deliver these training modules. For many, a mix of classroom teaching and on-the-job coaching was the most effective method.

The system

The system was a performance management approach that focused on plant performance and personnel development. In a state-owned enterprise, performance management is particularly challenging because of legacy attitudes and external pressure to focus more on social factors, such as retaining jobs, rather than profit.

To make the performance management system effective, the company developed creative ways to build informal sources of motivation, such as peer pressure. Among these measures were individual capability tracking of change leaders and line managers; peer benchmarking within refineries; plant performance transparency at headquarters; and regular monthly performance dialogues among the plant managers and the COO.

During the maintenance turnaround pilot, these informal forms of pressure were helpful in keeping to schedule and building capabilities in more than 1,000 contractors and 500 frontline staff in less than 6 weeks. Previously, without such pressure, similar projects were often delayed and delivered uneven capability levels among contractors and frontline staff. In these cases, performance remained low and accidents occurred.

The people

The people dimension represented the need to create a critical mass of trained staff in each role to implement and sustain the capability building program. A train-the-trainer approach was used to scale up the program rapidly throughout the organization. First, managers were trained in new processes, tools, and attitudes, as well as in how to pass this knowledge onward. The initial cadre of managers then assumed the roles of teachers and coaches. The company estimated that each trainer it trained was able to pass on the learnings to more than 250 others.

Success continues

While the first stage focused on quick wins, the second stage focused on developing institutions to sustain the transformation. The operations improvements delivered early in the program continued to deliver impact to the bottom line, with cumulative savings to date reaching more than US$680 million. In addition, the optimization process is expected to deliver another US$300 million in savings during the next stage of its rollout.

Beyond the balance sheet, however, production system improvements and the Operations Academy built capabilities throughout the company's large workforce and contractor network. More than 1,500 people were touched by a program that quickly brought performance improvements by using a highly structured approach emphasizing practical experiences.