



Super Projects

FROM MANAGEMENT TO OPTIMIZATION

CORPUS  OPTIMA



My ideas have undergone a process of emergence by emergency. When they are needed badly enough, they are accepted.

Buckminster Fuller

To advance from the ordinary requires a new game.

Kevin Kelly

CAPITAL PROJECTS IN THE NEW ECONOMY

The effective selection and successful deployment of large-scale capital projects has reached critical importance in the oil & gas industry. Driven by extended market volatility and economic uncertainty, the incentives for project success have never been greater. Cambridge Energy Research Associates (CERA) reports the cost of major oil & gas production projects has risen by more than 53% in the last two years alone. Yet when the cost and critical requirement for successful capital projects is increasing, the failure rate has never been more pronounced. According to a recent study by Booz Allen, more than 40% of major oil & gas capital projects are plagued by problems, with less than 50% of industry executives reporting satisfaction with overall capital project performance. This challenge couldn't have come at a worse time. The worldwide production slowdown is masking a second critical challenge. The talent pool is also drying up, frustrating the ability to successfully staff major projects. According to a recent survey by Ernst & Young and Rice University, 90% of HR executives in oil and gas companies report the talent shortage has become one of the top business issues their companies face. On the surface, this all seems to signal an urgent need for better strategy execution in the oil & gas project world.

But strategy execution is not the problem.

This is a actually paradigm problem. The thinking that is driving most of this lackluster performance is rooted in a mechanistic frame of reference. It is based on a purely mechanical understanding of large-scale capital projects and the factors that drive their success. The approach that is required is one that can account for the dynamic and organic nature of projects and their operating environments.

It is not project management we should be aiming for, it is project optimization. Project optimization weds the left brain of project management to the right brain of project leadership. This pattern of *complementarity* is evident in all Superperforming organizations and it is the sweet spot of Super Projects too. Super Projects are operationally defined by their outcomes, which outperform the norm in every critical area. To bring about these unprecedented levels of success, we must move from a paradigm of project management to a paradigm of project optimization.

WHAT IS THE EVIDENCE FOR THIS ASSERTION?

In a ten-year study of the behavior of the world's greatest companies in industries as diverse as airlines, automobiles, retailing, capital investment, motorcycle, classical jewelry, and others, "Superperformance" was defined as industry-outperforming return on investment sustained over time (at least a dozen consecutive years.)¹ By examining the common patterns of these companies, a remarkable, simple truth was revealed:



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Superperformers have the best processes *and* the most inspired people. Their outperformance emerges from this dual focus. This profound but simple revelation leads to a groundbreaking shift—reframing how we think about management and leadership—and the untapped potential that can be unleashed by their pairing. The discovery of Superperformance actually does advocate for a mechanical view of projects—but it is a *quantum mechanical* view that it calls for. Superperformance requires both a tangible and intangible partner, a particle and a wave. The tangible partner deals with process factors - project scheduling, equipping, monitoring, improving—the management in project management. The intangible partner deals with psychological factors, like inspiration, community, commitment, and integrity—the leadership in project leadership. What’s more, the evidence is that the highest levels of performance are linked to servant leadership, not command and control leadership. For project executives and communities, this knowledge has immensely practical value. It provides a way to go from project management to project optimization. Any project team can make use of this knowledge to transform performance.

SUPER PROJECTS ARE PART REVELATION & PART REVOLUTION

Super Projects are achieved through a revolution in knowledge, productivity and performance. To assure the success of any capital project, measurements are needed to plan, track and report the work underway and to forecast, and ultimately control the variables judged important to project success. These measures include traditional project dimensions like planning, scheduling, risk modeling, and safety factors for modeling and predicting project efficacy. These are fortified with process capability—continual improvement, lean, use of systems and statistical methods, and so on, to produce key project deliverables. This expanded array of process capability methods greatly enhances project outcomes and minimizes risks. This is the province of control, the proper domain of management.

But the evidence is that adopting even the best process methods alone will not get you Superperformance. Super Projects contain a province of liberation too, the natural domain of leadership. The evidence is that when the intrinsic motivation of an entire project community is liberated, ordinary projects become extraordinary. Like Superperforming organizations, Super Projects are fueled by great cultural emergence. Witness these cases from the Oil & Gas industry:

THE TODCO MIRACLE

“The Offshore Drilling Company (TODCO) was a wholly owned subsidiary of Transocean. TODCO was an amalgamation of over ten different competing companies with different corporate cultures cobbled together over several years and finally organized under one umbrella with the stated intention of being spun off as an independent company. The initial public offering commenced in February 2004 with an opening share price of \$13.10 per share.

When TODCO was purchased by Hercules in July of 2007, the last closing stock price was \$48.55, a whopping 370% increase in just over three years. This performance miracle came directly through a cultural transformation at TODCO. By the time of the Hercules acquisition, we had managed to (1)



receive the Mineral Management Service Safety Award for Excellence (SAFE), (2) Reactivated 12 idle rigs, (3) Increase the size of the company from 1,700 employees to over 3,000 in a scarce labor market, (4) Reduce downtime from 3.00% in 2004 to 1.07 % in 2006 (the last full year of operation).

How did this unlikely performance miracle happen? The departure from a top-down, autocratic style to one of involvement, collaboration and empowerment was our most serious challenge. Undoing decades of old ways of working can for a long time be met with resistance and suspicion, even when a genuine desire to improve is established. We also had to recognize that often, in the short term, establishing this new culture could mean that performance might be negatively impacted because supervisors would have to learn how to work in new, unfamiliar ways, which would involve more listening and more motivating, rather than simply issuing orders or instructions. While the concept of Superperformance (process times culture) is simple, the execution is quite difficult. Taking the extra time proved to be a real litmus test of the company's commitment to this change process. Even so, trying to become competent in the use and application of these new learned skills and techniques was sometimes met with frustration and the overriding temptation to simply revert back to the comfort zone, back to what was entrenched. The continued support, encouragement and positive reinforcement received from the Rig Managers and executives proved both invaluable and critical. In fact, the onshore managers were often found to be struggling to apply the very same concepts—which resulted in an informal support system being established which aided the transformation process for all of us.”

Michael L. Kelley
Former Vice President of Operations,
TODCO₂

RECOVERING THE MARS PLATFORM

“In 2002, two hurricanes, Katrina and Rita, covered essentially all of Shell's infrastructure in the Gulf of Mexico and shut us down at all our facilities. Most significantly, we had a large amount of topside damage to the Mars structure, which was the largest producing platform in the Gulf of Mexico with 140,000 barrels a day, in a \$70 dollar barrel a day world. So it was quite urgent for us to get it back in production. There was over \$300 million dollars worth of damage done. The drilling rig at Mars had been blown over and had done most of the damage to the Mars platform. I'm really proud of what Shell and the Shell team was able to achieve because that kind of repair had never been done before. We had three major technical innovations and we worked over 1,100,000 hours without one reportable injury. We were able to finish ahead of schedule and below budget and with a perfect safety record. We ran a 'trust the people, not the process' project and I believe that the personal relationships of leaders and informal leaders were key.”

Charlie Williams
Senior Scientist, Well Engineering and Production Technology
Shell Oil Company₃



THE STATOIL HYDRO KRISTIN PLATFORM

"Kristin is a new installation on the (Norwegian) shelf, set in production in 2005. It is a semi-submersible, producing from the Kristin reservoir over four templates. The reservoir is marked by high temperatures and high pressure (HT/HP) . . . several important developments were made in terms of the organization of work processes on the Kristin asset.

- To promote better day-to-day planning and on-the fly problem-solving operator and technician workstations are set-up in an open office layout, close to central control room, management, and workshops. This is to promote *Self-synchronization*.
- To increase involvement, operators and technicians are given the responsibility to plan, execute and report work orders on day-to-day basis. This is to promote *Empowerment*.
- To increase problem-solving capacity, operators and technicians are to maintain close relationships with their respective system/discipline specialist in technical support. (Less different from other installations,).
- To promote effective decision-making, the offshore and onshore managements are using an on-line collaboration-room as their permanent office. These developments have aimed to increase safe operations uptime and are core elements in the *one directed team* operation model used on Kristin."

In the operations on Kristin there have been no serious personal injuries (red or yellow incidents) to date. Absences due to illness were as low as 2.7 percent in 2006. The asset has had higher regularity (up-time) than other assets and better than planned. In the first year of operation, non-planned shut-downs were 1.27 percent of the total time available. There have been no gas leakages (on level 1 to 4) to date. Corrective maintenance: Outstanding work orders of high and medium level priority is about 500 hours, well below the average of 1800 hours for installations on the NCS."

" . . . Superperformance in integrated collaborative environments will be created if we stop looking at culture as a residual factor that is addressed after the implementation of new real-time technologies. This does not mean that technology is unimportant here. Tools are important resources in action. However, if we address the creation of Superperformance as a socio-technical challenge we approach integrated collaborative environments as development of new practices."

Vidar Hepso
Social Anthropologist, Integrated Operations
Statoil Hydro^{4,5}

What do these O&G industry cases have in common? They each:

1. Demonstrated amplified results associated with employee engagement
2. Represented new ways of working and unconventional thinking
3. Were infused with servant leadership
4. Were permeated with a 'trust the people' attitude
5. Were undergirded with cultures of collaboration, teamwork, and passion.



SERVANT LEADERSHIP IS THE LEADERSHIP OF SUPERPERFORMANCE

Leading for cultural emergence is leading an inside-out process, not an outside-in process. This leadership is a leadership for emergence, for liberating intrinsic motivation. When people are inspired they bring unprecedented motivation, commitment and collaboration to an undertaking. The command and control approach in today's challenging economy only moves further in the opposite direction, away from engagement and self-motivation, away from *chosen* responsibility and commitment, away from maximum fitness. A Servant Leader understands this intuitively. This approach recognizes that interactions of all parties are inescapable drivers of project success.

ORGANIC OWNERSHIP AND INVOLVEMENT

Tied closely with Servant Leadership is the requirement for Organic Ownership & Involvement. This bridges the gap between the need for results and the call for comprehensive employee involvement in a capital project. The fundamental premise for this dimension is that solutions to almost all project issues reside with project process owners, those people who work with the issue on a daily basis. And these people can make change happen if they are freed from the boundaries that typically stifle participation and creativity; and if project executives are willing to lead by listening and respond quickly to the generated improvement proposals. To paraphrase Deming, everyone involved with the project must go to work on the transformation.

Organic Ownership & Involvement is an 'action accelerator.' It bridges the gap between project-related KPIs and improvement targets and actual project-wide, interdependent action to achieve those goals. These kind of results are possible anytime:

- there is real management support to take action,
- there is a culture in place that encourages and celebrates bottom-up involvement,
- there is a common aim that is understood by all, and
- there are involved people who can provide the know-how, creativity and energy to accelerate ideas for turning targets into action.

GREATER AGILITY FOR A MORE DYNAMIC WORLD

Change happens. Agile project methods are a family of project optimization methods that emphasize the need for operating in the 21st century, where dynamic change and uncertainty is the rule, not the exception.

Integrating Agile methods into capital project operations is taking a giant leap forward into the real world. Agile is more flexible than traditional projects methods and stresses frequent face-to-face conversations. Using electronic and Web 2.0 technologies, project leaders can now stay in continuous real-time contact with all members of the team and assure that all stakeholders remain aligned with project objectives. By welcoming



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changes rather than resisting them, a competitive advantage can be created based on continuing project knowledge. Instead of an us-versus-them approach, full partnership with customers (or between producers and operators) is the goal, which translates into a robust, seamless project operation.

Agile methods emphasize:

- individuals and interactions instead of procedures and forms,
- Working ‘project outputs’ over comprehensive documentation,
- collaboration more than contract negotiations,
- responding to change over following a plan.

Superperforming individuals are the key to Superperforming projects. You cannot, however, return an enlightened project manager to an unchanged environment and expect things to improve. The environment must also change. Agile is a sharp contrast to the traditional top-down approach that relies stubbornly on project management software, rigorous processes and detailed upfront planning as the de facto drivers of project success. It is a refutation of the notion that people are fungible resources and that projects can be stamped out using standardized procedures.

Agile is a family of project optimization methods, including Scrum, Feature Driven Development, Lean Method, and others. Scrum concepts focus on management and communications, while others concentrate on processes and practices. Agile is an orientation. It requires a culture of trust, communication and collaboration. It values the ability to respond to change and new learning, and never forgets the goal is to deliver a product that is useful to the customer. Agile-oriented teams follow practices that keep the focus on the changing needs of customers. Inevitably as projects develop, additional needs and better ideas emerge. Short feedback loops are an essential element and a better practice. The customer is an active participant, avoiding the common malady of projects gone astray because the team concentrated only on contractual requirements—to the exclusion of the real purpose of the project. Close contact with customers help shape the project in alignment with the most important goal – a delighted customer.

An Agile-oriented team adapts its environment to fit its needs and the needs of the project. However, if this is not possible, the team is flexible enough to adapt itself to existing norms—as long as they are reasonable.

Agile-oriented teams are customer directed but self-managed. Generally, Agile-oriented teams choose the processes and tools they believe are appropriate for the project. “Just enough” is the guideline. There should be enough use of methods to provide sufficient checks and balances, and structure to keep things disciplined and on target – but no more. Adoption of agile methods is a long-term undertaking. Ideally project communities who are integrating Agile methods will slowly, determinedly and cautiously adopt Agile principles, as they would approach the adoption of any best practices.

Unprecedented levels of communication is the rule. Communication events include daily stand-up meetings and monthly retrospectives. The ever present question is:



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when knowledgeable and invested individuals are available and willing to provide input and direction.

CORE PRINCIPLES OF AGILE PROJECT METHODS

Agile is based on certain principles:

- Operating with an emphasis on satisfied customers
- Minimizing documentation to free the team to do valuable work
- Welcoming changing requirements
- Partnering with business developers to promote customer satisfaction
- Building teams around motivated individuals
- Creating a supportive environment that trusts the people to do the job
- Conveying information through face-to-face conversations
- Seeking simplicity and minimizing the amount of non-value added work
- Using teams that are directed, but self-organized and self-managed
- Using regular retrospectives to reveal how to be more effective
- Continually improving culture and processes

Traditional vs. Agile Approach to Projects

VARIABLE	TRADITIONAL	AGILE
Communication	Scheduled Intervals	Nonstop
Location	Remote	Collocated/Virtual
Leadership Philosophy	Command and Control	Servant/Responsive
Planning	Upfront	Continuous
Customer Involvement	Monthly Meetings	Throughout
Customer Availability	Hard to Reach	Easily Accessible
Processes	Defined	Process Owners/Team Selected
Procedures	Often Too Much	Just Enough
Contract	Fixed	Flexible
Contract Amount	Lump Sum/Liquidated Damages	Time and Material

Corpus Optima's Super Project services include the integration of Agile principles. Implementation can be directed at the entire project portfolio or it can be gradually and opportunistically applied to single projects. If a whole system change is called for, then all stakeholders and upper management must be involved, including of course, capital project customers.



IMPLICATIONS FOR O&G CAPITAL PROJECTS & BEYOND

“To manage, one must lead.” Deming’s famous optimization advice comes to life in the world of Super Projects. The implications are groundbreaking. A Super Projects approach provides a way to transform project outcomes, while at the same time creating a platform to move beyond individual projects to the entire enterprise. Capital project executives, contractors, managers and community members can leverage knowledge of Superperformance to more deeply and widely impact the organization for the better. Organizations can implement iterative phases of Super Projects to turn their entire organizational system into a Superperformer.



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ABOUT CORPUS OPTIMA

Corpus Optima is a consulting, coaching, and education firm specializing in Superperformance. Dave Guerra, co-founder and managing partner, discovered these principles through a ten year study of the behavior of real Superperformers across a variety of industries, including airlines, automobiles, capital investment, healthcare products, retailing, and others. Based on this discovery, Corpus Optima leverages the best of improvement and complexity science to help organizations amplify the merger of process and culture, the nuclear reactor of organizational Superperformance.

Corpus Optima offers a special consulting practice and set of capability development tools designed to help organizations move from management to optimization.

As one of the firm's premier offerings, Corpus Optima has created a flexible process to bring about the transformation of ordinary capital projects into Super Projects. Through structured learning, project work, coaching/mentoring, and on-the-job application, Corpus Optima provides a wide range of implementation services as well as prepares project optimization experts, who advise internal project agencies.

Corpus Optima's Project Optimization Services can enter the project process at any point in the project life cycle to help discover, equip and deploy project optimization strategies that integrate seamlessly into existing goals, initiatives and operating environments.

The Corpus Optima Superperforming Management & Leadership Capabilities Toolset, another core component, includes the Superperformance Habit Strength Instrument, Coaching Model, and Corpus Optima's signature portfolio of Superperformance-based practice fields based, designed for easy replication internally.

