

an excerpt from

*Making the Impossible Possible*

*Leading Extraordinary Performance—The Rocky Flats Story*

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# An Introduction to the Impossible

Once in a great while we find an organization whose performance is so much better than expectations that it is difficult to believe that this level of success is possible—for example, the Revolutionary Army in 1776, the John Wooden-era UCLA basketball teams, or the success of the Grameen Bank movement. Most people hold in their minds standards of what excellence represents, and when we encounter performance that markedly exceeds those standards, we are left to wonder how such an aberration is possible.

This book tells the story of positively deviant performance—the achievement of extraordinary success well beyond the expectations of almost any outside observer. We present the story of an organization that reached a level of performance that was considered impossible, so that adjectives such as “spectacular,” “extraordinary,” “remarkable,” and “astonishing” are apt descriptors. Our account describes how a single organization experienced a devastating loss—the loss of mission and subsequent languishing performance—and then, despite its problematic circumstances, achieved a level of success well beyond expectations.

Simply put, this organization accomplished what most knowledgeable people thought was impossible. The story examines the key enablers that account for this extraordinary level of performance. We explain the leadership principles that can be helpful to individuals in other organizations who are interested in fostering their own spectacular success.

## Rocky Flats

This book examines the cleanup and closure of America's most dangerous nuclear weapons production facility. This facility, located near the eastern slope of the Rocky Mountains in Colorado, produced plutonium and enriched uranium triggers for nuclear weapons from 1952 to 1989. Every nuclear weapon in the current U.S. arsenal contains triggers produced at Rocky Flats. Employees worked with the most dangerous materials known to mankind, and an ABC *Nightline* program in 1994 identified several buildings on the site as the "most dangerous buildings in America" because of the radioactive materials being handled, the threat of a disastrous nuclear accident, and the possibility of radioactive pollution escaping and contaminating the surrounding area.

The Rocky Flats site consisted of approximately 800 buildings, with about 3 million square feet under roof. Located on the 6,000-acre site was an enormous amount of hazardous material—tons of weapons-grade nuclear material including plutonium and enriched uranium, tens of thousands of cubic meters of transuranic acid waste and low-level radioactive liquids, and rooms in some buildings that had radioactive pollution levels reaching beyond infinity on the measuring devices. Contamination existed in walls, floors, ceilings, ductwork, surrounding soil, and, potentially, groundwater. Environmentalists, citizen action groups, state regulatory agencies, federal oversight agencies, and Congress all were understandably distrustful, skeptical, and largely antagonistic toward Rocky Flats. The largest industrial fire in the nation's history had occurred at the site in 1969, and other accidents in the 1950s and 1960s were viewed as evidence that this site was intolerably dangerous. Protests, lawsuits, and an adversarial climate were continuously associated with Rocky Flats. Antagonistic and hostile relationships existed with regulators. A combative stance had been adopted toward the activist community. Noncooperative relationships existed with surrounding states and with other Department of Energy (DOE) sites, resulting in a siege mentality—razor wire fences and guards toting M-16 rifles—that kept outsiders at a distance.

The three unions representing workers—steelworkers, construction workers, and security guards—also had antagonistic relationships with contract company managers, so that formally filed grievances were common among the workforce. Safety was significantly worse than the average at other government facilities and in the construction industry

in general. A climate of secrecy, insularity, self-protection, and resistance to change inhibited any hope of a major transformation.

In 1989, because of suspicion that unreported pollution might be occurring, the FBI raided the facility and suddenly shut the place down. Workers immediately lost a mission to perform and were accused of being criminal polluters. In 1992, the Rocky Flats nuclear weapons program was permanently discontinued by order of President George H. W. Bush, so the possibility of continuing to do the jobs for which they were well trained was completely eliminated for Rocky Flats employees.

More radioactive waste existed at Rocky Flats than at any other facility in the country. Consequently, DOE conducted a careful study of the residual pollution at the site in 1995 and concluded that the cleanup and closure of the facility would require more than 70 years and cost at least \$36 billion. Similar estimates were developed for thirteen additional DOE sites throughout the United States. An RFP (request for proposal) containing these estimates was circulated to potential contracting companies. The company that won the contract in 1995 was Kaiser-Hill.

What makes the story of Rocky Flats worth telling is the extraordinary level of success achieved—success in terms of speed, quality, efficiency, productivity, innovation, and profitability. As the largest and most complex environmental cleanup project in U.S. history, Rocky Flats was the first nuclear weapons facility to be decommissioned and closed anywhere in the world. But the complexity and uniqueness of the task is not the key message. Rather, the story is worth telling because the entire project was completed *60 years early* and at a *cost savings of approximately \$30 billion* in taxpayer funds. In contrast, the other DOE clean-up sites are approximately on-time (or late) and on-budget (or over) in accomplishing the same kinds of tasks.

By October 2005, all 800 buildings had been demolished, all radioactive waste had been removed, and all soil and water had been remediated to a level that exceeded original federal standards for cleanliness by a factor of 13. Simply stated, the impossible was achieved at Rocky Flats. Not only did Kaiser-Hill accomplish what had never been done before, but it was done in a time frame and at a cost that defied any reasonable expectation. To repeat, the other DOE clean-up sites are approximately on-time (or late) and on-budget (or over) in accomplishing the same kinds of tasks. The story

of Rocky Flats represents one of the most dramatic examples of organizational success in history. In a *New York Times* report (2005:A21) on the day of project completion, Senator Wayne Allard of Colorado called the project “the best example of a nuclear cleanup success story ever.”

## **Explaining Extraordinary Success**

The book explains how this success occurred. It highlights the key *enablers*—the levers, techniques, and practices—that explain how this extraordinary performance was realized. Our aim is to help leaders identify which enablers are most effective in producing transformational change and how they can create outstanding success. It is important to point out that these leadership principles are not intended to be restricted to a single organizational type or to a single circumstance. Using Rocky Flats as the backdrop for these leadership principles does not constrain them to a nuclear facility. Rather, the principles that emerged from this investigation may apply in many circumstances and to a wide variety of leaders. We hope that leaders will find them helpful in situations where transformational change is required, major challenge is encountered, or the opportunity to do something great is present.

Success this dramatic and extraordinary cannot be explained by a few simple rules of thumb or a “top 10” list. Rather, the enablers that account for this kind of success are numerous and sometimes complex. We organize them into four basic themes by utilizing a well-developed theoretical framework. Our intent in using this framework is to highlight the general leadership principles that underlie the key enablers. That is, we want to help leaders understand how the enablers work and how they can produce extraordinary performance. This theoretical framework—*the Competing Values Framework*—is explained in chapter 4.

The story of how the impossible became possible at Rocky Flats is told from the standpoint of the individuals who were involved in the change. Adopting this approach provides a glimpse of how people experienced this dramatic change, what strategies were being contemplated, and what factors the participants themselves believed were the keys to success. It also highlights the fact that no successful change in organizations—at least no significant transformational change—is due to a lone heroic leader or to a single vision developed

by an individual at the top. It is commonplace to identify single leaders as the chief architects of spectacular successes, and we often attribute remarkable organizational achievements to a sole person's talents or genius. Icons such as Jack Welch at General Electric, Steven Jobs at Apple, Bill Gates at Microsoft, Fred Smith at Federal Express, Sam Walton at Wal-Mart, Warren Buffet at Berkshire Hathaway, and a host of others are credited with being the chief explanations for the remarkable achievements of their respective companies.

On the other hand, the story of Rocky Flats is a story of many leaders, many interwoven activities, many constituencies, and many heroic endeavors that all combined to produce a remarkable story of success. In our account of the Rocky Flats transformation, we rely largely on the words of the participants in the project—the leaders who accounted for its success. We do not tell the story in a linear fashion or as a novel might unfold. Rather, we reproduce quotations and observations from a variety of individuals. These people represent a broad spectrum of participants, including federal government oversight personnel from DOE and the EPA, local elected officials, state officeholders, members of the U.S. Congress and their staffs, representatives of environmental and citizen watchdog groups, managers and supervisors working in the Rocky Flats facilities, union leaders, and union members doing the daily work of cleanup and closure. We use direct quotations and some paraphrased observations from these individuals, all of whom provide unique perspectives, insightful descriptions, and helpful explanations for the success of this remarkable endeavor.

## **Positive Deviance**

From our analysis of these interviews as well as from a variety of additional sources of data, we were able to draw some conclusions about how Kaiser-Hill was able to achieve such spectacular success at Rocky Flats (see appendix 2 for a description of the data sources and data analysis procedures). Of course, we risk grossly oversimplifying the key reasons for success by attempting to identify one summary statement that characterizes what was learned from our in-depth investigation. Nevertheless, it is clear to us that the overarching leadership lesson learned from Rocky Flats can be summarized in a single statement, although it belies the complexity that undergirds this straightforward observation:

*The impossible was made possible by adopting an abundance approach to change rather than a deficit approach.*

An abundance approach to change is deceptively simple. It refers to the striving for positive deviance, pursuing the best of the human condition, and working to fulfill the highest potential of organizations and individuals. An abundance approach focuses on resilience, flourishing, and vitality, rather than mere goal achievement. It pursues extraordinarily positive individual and organizational outcomes. An abundance approach stands in contrast to a problem-solving or a deficit-based approach to change. Rather than being consumed by difficulties and obstacles, an abundance approach is consumed by strengths and human flourishing. Rather than an exclusive focus on problem-solving, an abundance approach pursues possibility-finding. Rather than addressing change that is motivated by challenges, crises, or threats—in which the role of the leader is to effectively address problems or deficiencies—the abundance approach addresses affirmative possibilities, potentialities, and elevating processes and outcomes.

One way to illustrate the abundance approach is to consider figure I.1, which represents a continuum of deviance (see Cameron, 2003). Usually the word “deviance” connotes a negative condition, so labeling someone a deviant usually represents a negative evaluation. However, the basic definition of deviance is merely an aberration from the norm or a violation of expectations. Therefore, deviance can occur as a positive aberration from normal conditions as well as a negative aberration, as represented in Figure I.1.

Look first at the top line in the figure. This continuum contains three points—one anchoring the left end (negative deviance), one the middle point (an absence of deviance or a normal or expected condition), and one anchoring the right end (positive deviance). Consider the top line of the figure body first. It refers to *physiological functioning*. When it comes to physical health, the large majority of medical research, and almost all of a physician’s time, is spent helping people move from the left point on the continuum (illness) to the middle point (health). The middle point represents an absence of illness or injury, or the normal condition. Pharmaceutical companies allocate billions of dollars a year to develop compounds that assist individuals in moving from the left point to the middle point—to an

**Figure I.1 A CONTINUUM ILLUSTRATING POSITIVE DEVIANCE**

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	Negative Deviance	Normal	Positive Deviance
<i>Individual:</i>			
Physiological	Illness	Health	Vitality
Psychological	Illness	Health	Flow
<i>Organizational:</i>			
Revenues	Losses	Profits	Generosity
Effectiveness	Ineffective	Effective	Excellence
Efficiency	Inefficient	Efficient	Extraordinary
Quality	Error-prone	Reliable	Flawless
Ethics	Unethical	Ethical	Benevolence
Relationships	Harmful	Helpful	Honoring
Adaptation	Threat rigidity	Coping	Flourishing
		↑	↑
<i>Approach:</i>		<i>Problem solving</i>	<i>Abundance</i>
		<i>gaps</i>	<i>gaps</i>

(SOURCE: Cameron, 2003)

absence of illness or a reduction in symptoms of illness. Almost all physiological research, in other words, focuses on the gap between the left point and the middle point. Unfortunately, much less is known about how to get people from the middle point on the continuum to a state of wellness, vitality, or Olympic fitness on the right end. Once people feel well, they usually don't see a doctor, and almost no medical scientists study them. Moreover, almost no (legal) pharmaceutical compounds exist to foster a physiological condition that might be described as positively deviant vitality. We know more about solving physiological problems than about creating vitality and flourishing health.

*Psychologically* the same thing is typical. More than 95 percent of psychological research published in the last 50 years has focused on

closing the gap between the left point on the continuum and the middle point—that is, focusing on how to overcome depression, anxiety, stress, or emotional difficulties (Seligman, 2002b). Once psychological and emotional health is at the middle point—no illness or psychological difficulties—it is very seldom the subject of serious scientific investigation. Little is known about how to get people from a condition of mental and emotional health to a state of flourishing, positive energy, or what is sometimes referred to in psychology as “flow” (Csikszentmihalyi, 1990). Most of what we know about human physiology and psychology is how to overcome weakness or illness so that we can reach a state of normality, or an *absence* of deviance.

Now consider *organizations* and the common motivations and approaches used to change them. Organizations, by definition, exist in order to *organize*. They are fundamentally mechanisms to control human activity, or to reduce deviance from expectations. By definition, they reinforce the middle point on the continuum—organizing reduces variation. Usually organizational change is motivated by ineffective, inefficient, or unprofitable performance, mistakes or unethical decisions, conflict-ridden or rigid relationships, or problems being encountered. Leaders in organizations are usually astute in diagnosing key challenges, major obstacles, and important difficulties. The leader’s job is often defined as defining, diagnosing, and overcoming major obstacles and closing deficit gaps. Effective leaders are typically defined as effective problem-solvers.

The gap between the middle of figure I.1 and the right-hand side, however, is an *abundance gap*—the difference between successful performance and spectacular performance. The organization is motivated to change from being profitable, effective, efficient, or reliable in performance, for example, to being extraordinary, flawless, generous, or benevolent. Outcomes produce positive benefit for more than the organization itself, and a condition of abundance makes possible the flourishing and success of others outside the organization as well.

The abundance approach motivates change in organizations based on the pursuit of a greater good and an opportunity to achieve positively deviant results. Benefits extend beyond the immediate time frame and beyond the advantage of those directly involved. The results possess profound purpose because they are connected to important personal values and to the core meaning of the organization. The abundance approach assumes that human flourishing, vir-

tuousness, and the best of the human condition are the outcomes being pursued (see Cameron, Dutton, & Quinn, 2003; Cameron, Bright, & Caza, 2004).

The Rocky Flats story is a story of abundance and positive deviance. The extraordinary success achieved extends well beyond even the most optimistic estimates of what would constitute a successful outcome. At the heart of the Rocky Flats success story lies an approach to change that led to positive deviance—extraordinary success well beyond expectations for effective change. Rocky Flats succeeded because it was, fundamentally, a transformation driven by the closing of abundance gaps rather than the closing of deficit gaps. Simply put, an abundance approach made the impossible possible.

### **Leadership Enablers and Principles**

Although there are a large number of interesting aspects of this story of success, we concentrated our study on the enablers that leaders used to spark positively deviant performance. Our research uncovered 16 such enablers, and they are discussed in detail in chapters 5 through 8. These enablers are the levers that leaders used to accomplish their objectives. Most important, these enablers can be summarized as four general themes that appear to contradict each other.

One theme focuses on innovation, risk-taking, visionary thinking, and symbolic leadership, whereas another theme focuses on the opposite—maintaining stability, carefully controlling processes, precise objectives, and financial discipline. Pursuing these two themes simultaneously—that is, fostering chaos and control at the same time—helped foster positive deviance. A third theme focuses on supportive interpersonal relationships, developing human capital, openness, and nurturing a collaborative culture, whereas a fourth theme focuses on the opposite—power and politics, pressure to perform, striving for wealth, and external stakeholders. Pursuing these two themes simultaneously—that is, fostering collaboration and competition—helped explain positive deviance at Rocky Flats.

These *enablers* are translated into a set of key leadership *principles* that emerged from the analysis of Rocky Flats. Twenty-one such principles are identified and are summarized in the last chapter. Leadership principles are basically prescriptions for achieving extraordinary performance. They offer a perspective on how leaders can behave if

they are to implement an abundance approach to change. These principles are contrasted with conventional leadership principles in order to highlight the uniqueness of the abundance approach. Our intent is to provide general guidelines that leaders who desire to create extraordinary success can adopt in almost any setting.

It should be pointed out that whereas abundance-oriented leadership principles are contrasted with more conventional principles, this is not to say that abundance should be pursued exclusively or as a substitute for conventional leadership. Rather, abundance practices focus on creating a condition of virtuousness and achieving positively deviant performance, but the extraordinary success at Rocky Flats often required both conventional and abundance practices. At Rocky Flats, these contrasting leadership practices were frequently pursued concurrently. We summarize the general leadership principles associated with the abundance approach in figure I.2, and contrast them with conventional leadership principles.

To repeat, making the impossible possible often required both types of practices, but it is the abundance practices that are the most unusual and that distinguish Rocky Flats from most organizational change efforts. Leaders who produce positive deviance and achieve extraordinary performance will be required to adopt an abundance approach to change, and this book highlights the leadership principles that form the foundation of that approach. In the chapters that follow, we explain why the abundance approach leads to extraordinary performance, and we highlight the key enablers that leaders can use to realize this level of success.

## **Structure of the Book**

Figure I.3 identifies the structure of the book. We begin by addressing the question *How did extraordinary performance occur at Rocky Flats?* The answer, as mentioned above, is the implementation of the abundance approach. The next question is *Why does the abundance approach work? What explains its remarkable success?* After answering this query, a third question is addressed: *What levers can leaders use to achieve similar results?* This leads us to an explanation of enablers of success. Finally, we address a fourth question: *What are the prescriptions for extraordinary performance? What is different from conventional leadership?*

**Figure I.2 CONVENTIONAL LEADERSHIP PRINCIPLES COMPARED WITH ABUNDANCE LEADERSHIP PRINCIPLES**

Conventional Principles	Abundance Principles
<i>General Leadership Principles</i>	
Problem-solving and deficit gaps	Virtuousness and abundance gaps
A single heroic leader	Multiple leaders playing multiple roles
One leader from beginning to end	A continuity of leaders
Congruence and consistency	Paradox and contradiction
<i>Principles Related to Visionary and Symbolic Leadership</i>	
Left-brain visions—logical, rational, and sensible—with SMART goals	Right-brain visions—symbolic, emotional, and meaningful—with profound purpose
Consistency, stability, and predictability	Revolution and positive deviance
Personal benefits and advantages	Meaningfulness beyond personal benefits
Organizations absorb the risks of failure and benefits of success	Employees share the risks of failure and rewards from success
<i>Principles Related to Careful, Clear, and Controlled Leadership</i>	
Downsizing at the expense of people	Downsizing for the benefit of people
Commitments and priorities based on environmental demands	Unalterable commitments and integrity at all costs
Managing the contractor, attaching resources to performance	Managing the contract and ensuring stable funding
Ultimate responsibility and accountability for measurable success at the top	Responsibility and accountability for measurable success for everyone, including workers, managers, regulators, community organizations, and funders
Adaptability and addressing work challenges as they arise	Engaging only in value-added activities

*continued*

**Figure 1.2 Continued**

Conventional Principles	Abundance Principles
<i>Principles Related to Collaborative, Engaging, and Participative Leadership</i>	
Building on and reinforcing the current culture	Introducing challenges that the culture cannot address
Decision-making and leadership at the top	Employee and union partnerships in planning, decision-making, training, evaluation, and discipline
Need-to-know information sharing and physical separation	Early, frequent, and abundant information-sharing with co-location
Long-term employment, personal relations, and the use of specialists	Long-term employability, professional relations, and retraining
<i>Principles Related to Rigorous, Uncompromising, and Results-Oriented Leadership</i>	
Managing the media	Openness with the media early and often
Keeping adversaries at a distance and using protective political strategies	Making adversaries stakeholders, building relationships, and using positive political strategies
Clear, stable performance targets that meet standards coming from the top	Escalating performance, virtuosity, and positive deviance targets from multiple sources
Organizational financial benefit from outstanding success	Financial generosity and benevolence with employees

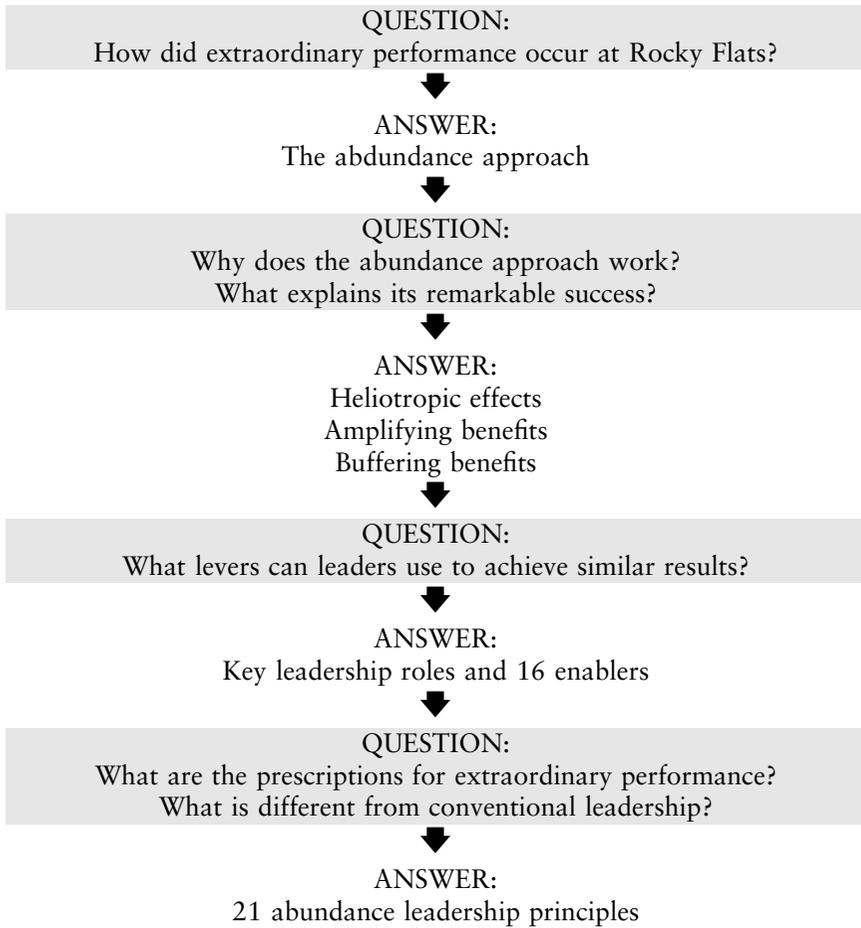
## Chapter Overviews

In chapter 1, we describe in more detail the conditions that were encountered by Kaiser-Hill managers when they arrived at Rocky Flats in July of 1995. Had Rocky Flats been operating normally—for example, normal levels of productivity, normal employee morale, normal safety records, normal relationships with external constituencies—the closure and cleanup of the facility still would

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**Figure I.3 THE STRUCTURE OF THE BOOK**

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have been given a low probability of success. No similar job had ever been achieved before, and no one knew for sure how to accomplish this task. But the facility was not operating normally. It was in a disastrous condition, so just getting performance to an acceptable level would have represented a remarkable accomplishment. Chapter 1 outlines why this case represents an instance of making the impossible possible—achieving levels of performance well beyond normal. In addition, this chapter explains in some detail what an

abundance approach to change is and why it leads to remarkable performance.

The contract signing between Kaiser-Hill and the Department of Energy marked the beginning of the saga at Rocky Flats. In 1995, few, if any, predicted a successful outcome, given the multiplicity of obstacles and difficulties facing the organization. Chapter 2 provides a more detailed description of the conditions under which the facility was operating prior to the intervention of Kaiser-Hill. A brief history of the Rocky Flats facility is provided, beginning with its creation in 1951, and we discuss in some detail the difficulties presented to the new Kaiser-Hill management team when they arrived on the scene. In this chapter we also discuss some possible rival hypotheses that some individuals might claim negate or dismiss the remarkable success achieved at Rocky Flats.

In conducting our investigation of Rocky Flats, it was difficult to ignore the impact of certain leaders and leadership practices on the success of the change effort. Quite frequently in our interviews, employees cited the *roles* played by certain leaders as being particularly important. Chapter 3 explains and elaborates some of these leadership roles that differentiate abundance-oriented leaders from more traditional leaders. These leaders had special impact on the success of the project, and although only a sample of the leaders are identified by name, they represent successive CEOs at Rocky Flats, congressional and Senate leaders, DOE and EPA leaders, and leaders within Kaiser-Hill's parent company, CH2MHill. Key leadership principles are illustrated in the comments made by and about these leaders.

It is easy to become overwhelmed with the litany of leadership enablers and principles recounted in this book. Hence, we have organized them into clusters with similar themes. For example, in figure I.2, the first four leadership principles refer to a general leadership orientation. The next four principles cluster into one group relating to *visionary and symbolic leadership*. The next five principles relate to *careful, clear, and controlled leadership*. The next four principles relate to *collaborative, engaging, and participative leadership*. The final four principles relate to *rigorous, uncompromising, and results-oriented leadership*. The enablers of extraordinary success are embedded within these themes.

Identifying these clusters is based on the *Competing Values Framework*—a powerful tool to help interpret complex arrays of

information. This framework has been the subject of research for a quarter-century and has proven to be of great value in understanding leadership and organizational performance (see Cameron & Quinn, 2006; Cameron, Quinn, DeGraff, & Thakor, 2006; Quinn, 1988). In chapter 4 we provide a more detailed explanation of the Competing Values Framework.

Chapters 5 through 8 identify and illustrate the four general categories of enablers of positive deviance. Chapter 5 illustrates the four enablers associated with visionary and symbolic leadership: *facilitating innovation*, *risk-taking*, *visionary thinking*, and *symbolic leadership*—a clear, shared vision; symbolic leadership activities; innovation and creativity; and meaningful work. Chapter 6 illustrates the four enablers associated with careful, clear, and controlled leadership: *maintaining stability*, *carefully controlling processes*, *precise objectives*, and *financial discipline*—goal clarity; new contracts and an interagency agreement; detailed planning, “projectizing,” measurement, milestones, and accountability; and stable funding. Chapter 7 illustrates four enablers associated with collaborative, engaging, and participative leadership: *supportive interpersonal relationships*, *developing human capital*, *openness*, and *nurturing a collaborative culture*—organizational culture change; collaboration; trust and credibility; and human capital and social relationships. Chapter 8 illustrates the four enablers associated with rigorous, uncompromising, and results-oriented leadership: *power and politics*, *pressure to perform*, *striving for wealth*, and *external stakeholders*—external stakeholder engagement, external political strategies, bold action and pressure to succeed, and incentives to perform.

Chapter 9 summarizes and elaborates the key leadership principles learned. Principles that may be generalizable to other settings and implemented by leaders in other kinds of organizations are underscored, based on the enablers that were illustrated in the previous chapters.

Appendix 1 presents some of the contrary perspectives regarding Rocky Flats’ performance. Some constituencies remain skeptical that enough has been done, that anything of value can be learned from a nuclear arsenal, or that the truth has been told. We try to represent their perspectives in this appendix.

Appendix 2 provides more detail about the data sources used in this investigation as well as the data analysis procedures used to generate our conclusions.

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