TRANSFORMING ORGANIZATIONS

Strategies and Methods

Timothy G. Kotnour

CRC Press
Taylor & Francis Group

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CRC Press
Taylor & Francis Group
Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

CRC Press
Taylor & Francis Group
6000 Broken Sound Parkway NW, Suite 300
Boca Raton, FL 33487-2742

Printed in the United States of America on acid-free paper
10 9 8 7 6 5 4 3 2 1

International Standard Book Number-13: 978-1-4398-0574-9 (Hardcover)

Library of Congress Cataloging-in-Publication Data

Kotnour, Timothy George.
Transforming organizations : strategies and methods / Timothy George Kotnour.
p. cm.
Includes bibliographical references and index.
ISBN 978-1-4398-0574-9
1. Organizational change. 2. Strategic planning. I. Title.

HD58.8.K668 2009
658.4'06--dc22 2009001604

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http://www.taylorandfrancis.com

and the CRC Press Web site at
http://www.crcpress.com

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Acknowledgment

This book grew out of an ongoing, multiyear partnership between the National Aeronautics and Space Administration's (NASA) Kennedy Space Center (KSC) and the author. The author served as a strategy and transformation consultant to the senior management team. Many individuals have given their time, efforts, energy, and honest opinions throughout the partnership. Without their openness and willingness to learn with each other and the author, the strides in strategic management and this book would not have been possible.

Many senior managers throughout KSC have provided their thoughts and knowledge about strategic management and NASA/KSC. Without their openness, the strategic management process would not have been successful. A few people deserve special recognition. Jay Honeycutt, KSC center director, provided the initial support to begin the effort. Roy Bridges, KSC center director, provided the freedom and never-ending support for us to truly engage in implementing the strategic management process. His leadership provided us with an ongoing challenge — trying to keep the process at the same pace he was setting and following the vision he was building within KSC. James Jennings, KSC deputy director, provided the initial and continuing support for the strategic management efforts. Jim provided the reality to our process and efforts, and continued to be the glue that held the organization and strategic management process together. He understands the political actions necessary to successfully implement the strategic management process. Two other people deserve special mention — the KSC strategic planning managers I worked with on a daily basis: Saul Barton and Jenny Lyons. Saul provided the mentorship on how to get things done in the KSC environment. He knows how to "plant the seeds" and nurture them for others to see the results as their own. Jenny Lyons understands the process work to ensure alignment of goals and people. I thank all five of them for providing the environment to learn, grow, and achieve.

Throughout this process, a group of KSC employees provided insight into the issues facing KSC. This group began the strategic management process and transformation for KSC. I will not list all of these people for fear that I may forget someone. Many individuals helped every day in the transformation and helped me learn about and develop theories about transformations. If you read this and think I am talking about you, you are right.

I thank NASA/KSC for providing a forum for sharing and developing knowledge about strategic management. This work began through a NASA Faculty Fellowship led at KSC by Gregg Buckingham. I thank them for providing a real-world laboratory to better understand organizational performance improvement. Should misunderstandings or faulty statements occur somewhere in this book, it is my responsibility alone.

I thank Lisa Fisher for her help in transforming this material into a readable product. And I thank the Taylor & Francis team, including Cindy Carelli, senior acquisitions editor, Jay Margolis, project editor, Sophie Kirkwood, typesetter, and James Miller, cover designer.

Finally, I thank my family for their unending love and support.

Why Should You Read This Book?

You should read this book if you are a leader who is accountable for making decisions and allocating resources to transform an organization to a higher level of performance. As you already know, you have limited resources (time, dollars, people, and energy) to make the transformation work. You need a framework to filter information and make decisions about the transformation. My intent in this book is to provide you this framework, and to address common questions related to an organizational transformation.

Seven common transformation questions are:

1. Why does an organization need to transform?
2. What is a transformation?
3. What challenges does a transformation create?
4. How can you respond to the transformation and its challenges?
5. What are your leadership roles in a transformation?
6. What principles can help guide your strategic thinking?
7. What is a systematic process to manage your transformation strategy?

To answer these questions, I provide a summary of the lessons learned from the Kennedy Space Center (KSC). The lessons about organizational transformation and strategy are gleaned from KSC's experience in transforming itself in the period 1995–2002. These lessons learned are offered as gleaned learnings, not the "silver bullet" answer to organizational transformations. These lessons learned were developed by understanding what did and did not work well. A leader can use this book to bring meaning to the many events and efforts associated with a transformation and to develop an organization's unique approach to its transformation.

In the remainder of this book, we will explore in more detail how to deal with a transformation. I conclude by connecting the dots into an overall model. I also provide a set of questions to think about as you move forward with your organization's transformation. Each chapter provides a set of questions for you and your management team to use to hold meaningful conversations about your organization's transformation. Meaningful conversations are developed from the right people asking the right questions. This book intends to give you a set of questions to begin these conversations.

Lesson Learned	Answers to the Seven Transformation Questions
1	• The need for a transformation is caused by our current business model being irrelevant, unresponsive, and unready — we are not producing the right product the right way
2	• A transformation is the purposeful, intentional, consistent change of an organization's business model over time
3	• The organization will face five challenges when transforming
4	• A strategic response focuses on implementing a strategic transformation path while navigating four phases of a transformation
5	• Leaders play six roles in the transformation
6	• Six strategic thinking principles can help guide your thinking — the leader must connect the dots
7	• We manage the transformation challenges, implement the strategic response, and implement the leadership roles through the strategic management process

About the Author

Tim Kotnour, Ph.D., is an associate professor in the Department of Industrial Engineering and Management Systems at the University of Central Florida. He completed his doctorate in Industrial and Systems Engineering with an emphasis in Management Systems Engineering from Virginia Tech.

Dr. Kotnour partners with senior management teams to develop solutions for sustained performance excellence for their organization.

He has delivered performance solutions through technical assistance, training, and research with industry, government, and universities. He focuses on strategic management, change management, organizational transformations, performance measurement, and strategic project management. He provides strategic conversation process development and facilitation to leadership teams. Past and current partners include National Aeronautics and Space Administration (NASA), Kennedy Space Center (KSC), Launch Services Program, Electronic Arts, DOD/Tardec, The Boeing Company, Lockheed Martin, Siemens Power Generation, Harris, SAIC, Dynacs Engineering Inc., U.S. Air Force, Department of Energy, Orlando Healthcare System, and Carilion Healthcare System. He teaches project engineering and engineering management both on and off campus for industrial partners. He has provided project management education to organizations such as KSC, Lockheed Martin, and FedEx.

In 2001 and 2005, he was awarded a NASA Public Service Medal for the partnership work with the KSC. He is a fellow in NASA's Center for Program/Project Management Research, and a fellow of the American Society for Engineering Management.

He was the editor of the *Engineering Management Journal* from 2002 through 2009.

Section I

Introduction to Section I — The Story We Are Learning from

This section provides the context for the remainder of the book. You will be introduced to the Kennedy Space Center (KSC) story that we will learn from. The data and information shared in this section will be discussed again in the next two sections of the book, where we abstract the lessons learned from the KSC story.

1 Introduction to the KSC Story

We are using the Kennedy Space Center's (KSC) evolution from 1995 to 2002 as a case study to reflect and learn from.

WHY SHARE THE KSC STORY?

We are telling this story for two reasons:

- To document KSC's experience in evolving itself through strategic management
- To reflect on this experience to develop a deeper understanding of how to use strategic management as a tool for evolving and transforming an organization

KSC's Experience

First, we tell the story to document KSC's experience in evolving itself. KSC provides a unique opportunity to document how technical organizations evolve. A key component of National Aeronautics and Space Administration (NASA) and KSC is to generate and communicate knowledge. The knowledge is not only about the technical aspects of space, but also about the very heart of the challenges facing the space agency — leadership and management of a technical organization. By reflecting on this story, we hope to improve the strategic management of technical organizations and the process by which we learn from our organizational experiences.

The story comes from the many individuals striving to improve KSC. It comes from the focus group of employees who asked the KSC center director important leadership questions. In 1996, employees were asking senior management to provide leadership and strategy. Figure 1.1 shows a slide of the message an employee focus group brought to the center director in the summer of 1996. In asking these questions, they wanted a future that was meaningful — a future focused on doing exciting, creative, and value-added work. They wanted their shot at Apollo-type work. This story attempts to share KSC's experience in providing leadership and strategy.

This is a story about a group of individuals who stood up and answered the call to have a stake in defining their future. They chose a path of long-term evolution. During KSC center director Roy Bridges' first strategic offsite meeting with the senior management team, he asked the group two significant questions (see Figure 1.2). On March 25, 1997, the senior management team made the choice to evolve itself strategically.

Employee Concerns

- What is the desired future state/vision for KSC?
- What actions--change approach--will KSC take to go after the future state/vision?

- Employees want leadership action from senior management.
- Employees want to know there is a plan and direction

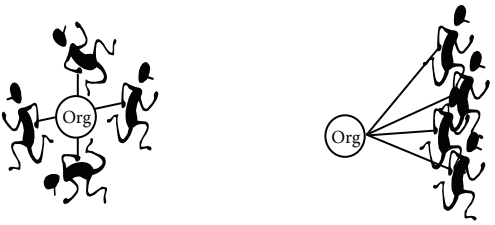

FIGURE 1.1 KSC employee focus group pushed for a strategic approach to evolve KSC.

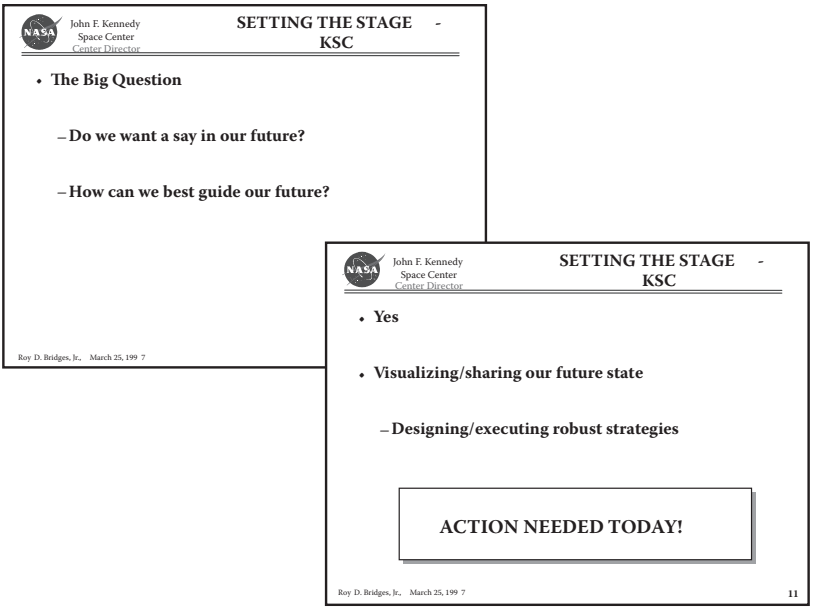

FIGURE 1.2 KSC center director Bridges asked the management team to take a strategic approach to evolve KSC.

This story is about making strategic thinking a daily activity. At the beginning of the second day of a senior management strategic offsite, a senior manager stood up and apologized to the group. He apologized for not thinking strategically. During that first day, he was focused on what needed to be done back at the office at the end of the day. He was not thinking about KSC's long-term interests. His self-reflection and sharing was reinforced by others agreeing with him. The group recognized they needed to change they way they thought about the Center and their leadership roles. This reflection led to the realization that KSC needed to make strategic thinking a daily activity, not a once-a-year strategic offsite activity.

Reflecting on KSC's Experience: A Tool for Organizational Evolution

The second reason why I wrote this book is to reflect on this experience. The intent is not to offer a blueprint or silver bullet for change. The intent of this reflection is to develop a deeper understanding of the use of strategic management to transform an organization. The intent is *not* to develop the single best answer, but rather to integrate different models and approaches. The unique advantage we have with this story is that we have a 7-year window to look at the organization, to provide in-depth knowledge and experience, and to try to make the strategic management process successful. It is from this unique perspective that we will learn.

We tell this story to help us and others reflect on the challenges, strategies, methods (processes and tools), and lessons learned in transforming an organization. We use the term "story" to denote the collection, organizing, and reflection of KSC's life since 1995. When I met with Roy Bridges near the end of his term as KSC center director to discuss this work, he made a very important point: "This story is not about you or me. It is about KSC and NASA. The story is about bringing value to NASA so it can write the next chapter in the NASA book." This story is about a group of individuals using strategic analysis, thinking, and conversations within the management process to continuously focus on bringing value to NASA and the space industry. This reflection is about how the organization responded to four questions: two from the employees (Figure 1.1) and two from the center director (Figure 1.2). This story and reflection are not an evaluation or justification of the transformation from a success-or-failure perspective.

Table 1.1 summarizes the structure of the history from which we will learn. In the remainder of the book, we will fill in the major events for each line of this history map. By understanding how the individual events are related to each other, we can better understand the lessons learned from the KSC transformation.

Before we begin the journey, Roy Bridges, who was KSC's center director during most of the period we are reviewing, offers his views and perspectives to the KSC story.

TABLE 1.1
Major Philosophical Drivers and Events within NASA

Element	Subelement	1995–1997	1998–2000	2001–2002
External environment	• World events • National political environment • U.S. space industry			
NASA strategic context	• Leadership • NASA direction • NASA Guidance • Leadership			
KSC challenges	• Mission execution • Set strategy • Make the strategy real • Enable the transformation			
Execute the mission	• Shuttle • International Space Station (ISS) • Expendable Launch Vehicle			
Continuously set strategy	• Strategic offsites • Strategic management products			
Make the strategy real: operational and development mission initiatives	• NASA • Shuttle initiative • LSP initiative • ISS initiative • Exploration initiative • New vehicle context • New vehicle initiative			
Make the strategy real: organizational and management systems	• Customer analysis • Human resources • Process management • Leadership • Business and financial systems			
Make the strategy real: partnerships	• Air Force • Cape Canaveral Spaceport • State legislature • Education			
Enable the transformation	• Guiding behavior • Manage portfolio of management efforts • Learning: self-assessment • Learning: external views • Learning: building leadership and change management skills • Providing a change infrastructure			

THE ESSENCE OF THE STORY IN THE WORDS OF THE CENTER DIRECTOR

During this period, KSC faced a significant challenge of safely completing the mission while undergoing a major change.* KSC was asked to change the how it operated and to reduce its civil service workforce of 2,498 in FY93 to 1,490 by FY03. During FY94 and FY95, the center used buyouts that accounted for the easy reductions. However, everything else was difficult to accomplish. KSC was facing this challenge when I was asked to take over as KSC center director in March of 1997.

Before taking the job at KSC, I called my senior shuttle director and asked him if we could make the transition to the new system of conducting shuttle operations successfully. He was convinced that it could be done. This assessment was corroborated by other individuals that I respected. The real issue was how to give hope to the best of the KSC team that there would be exciting work at KSC during their careers. We could not afford to lose our best and brightest young people. Moreover, it was clear that reducing the overall workforce at KSC by 40% would require several additional dramatic changes in the manner in which we conducted business beyond transitioning Shuttle Processing to an insight rather than an oversight mode. In addition, we did not want to have a civil service reduction in force (RIF) because that would also have targeted the youngest members of our team. It was a daunting challenge that gripped us every day of the week for the next 6 years. Some individuals have described the challenge as like one faced by a race car pit crew trying to change the tires on the car while traveling at 200 mph around the track. Clearly, we faced a monumental team challenge.

We decided to take this challenge on through a strategic management approach consisting of many strategic conversations. As I stood before the senior staff at the first strategic retreat, I felt invigorated at having such a talented team to make the transition. They were individually superb. The problem was that each was focused on the day-to-day business of getting the next mission off. I needed to help them visualize the future and understand that we could make the future better if we could see a future that we liked as a team and were willing to work hard to achieve. We did achieve that goal, but numerous conversations were required over the next 6 years to complete the task. Many are summarized in the chapters of this book. Remember that we did not have a cookbook or recipe to guide us, but we did have talented consultants, such as Tim Kotnour, who was with us every step of the way, to help us to see the next steps to take.

During this entire period, the drama was intense and real. It was how to retain our best and brightest, and accomplish our mission safely while making the dramatic changes required to reduce our civil servant workforce. The money was not in the budget to keep the workforce that we had, so we were forced to move forward aggressively. To achieve the dramatic reductions, we lived with successive buyouts and hiring freezes. No one could chance a major mission failure, so we had to keep our eye on the "knitting" at every step of the way. There were always people on the sidelines who predicted our failure and tried to halt or interrupt our strategic journey.

---

* This section was provided by Roy Bridges, former KSC center director.

Although these individuals were well meaning, it took an amazing amount of time keeping all of the stakeholders apprised and comfortable with our plans and progress. I gave more than 400 presentations to groups to keep us on track during this 6-year period.

As mentioned earlier, the desired strategic outcome was to give people hope that there would be exciting work on the other side of this chasm so that our best would decide to stay with us. We needed to create some magnets for individuals to attract them to new work. Among the successes was the creation of the Multi-Element Integrated Test (MEIT) instead of ship and shoot for the space station modules. This test concept was created and primarily staffed by individuals who had formerly been involved in Shuttle Processing. It was very difficult to attract some of our best to this new effort. Moreover, we formed teams to help develop shuttle upgrades, which would use new technologies that would make the shuttle safer and more reliable. We also created numerous technology development efforts under a new banner for the Center — the Spaceport Technology Center. One example was the Cryogenic Testbed Facility, which was developed in partnership with the State of Florida. This project was immediately successful in validating the utility of a cryogenic freeze plug technique that allowed crews to change out a shuttle component rather than requiring an expensive, and time-consuming, shuttle rollback from the launch pad. We were also successful in convincing the agency to move NASA's Expendable Launch Vehicle (ELV) Program from Goddard Space Flight Center (GSFC) and Glenn Research Center (GRC) to KSC. This required intense negotiations between the director of GSFC and me. Eventually, he was convinced because it was the right thing to do from a strategic point of view for KSC and the agency. Another great partnership with the State of Florida was the grant of more than $30 million over 2 years to design and build a new life sciences laboratory at KSC. All of these made a significant difference in the hope equation.

Also, we created a game-changing partnership — a joint-base operations support contract (JBOSC) with the Air Force. Through this contract, we were able to reduce the number of civil servants that we needed to supervise our infrastructure contractor by not only doing it jointly with the Air Force, but also by moving to a "city manager" concept instead of continuing to have functional organizations with their own captured support contractors to do their work. This would allow us to decrease the number of civil servants in these functions by 67%. These functions were less critical compared to some of the other KSC work, and this reduction demonstrates how we changed the fundamental nature of the way we conducted business. In addition, JBOSC was very significant in giving us a "bank account" to help with the transition. Dan Goldin, the NASA Administrator, did not believe that we would be successful in establishing the JBOSC and to encourage us, he said that he would allow us to keep any savings for reinvestment in KSC. That was a huge incentive for our team to actually achieve the savings. In the 5-year period from 1998 through 2003, we saved more than $70 million, which was reinvested in magnet and safety strategic projects. The center also won the Vice President's Hammer Award for this innovative partnership.

At the end of the period, we had achieved a 29% reduction from 1993 to 2003, but the bigger drama was that the headquarters expected us to make a reduction to 1,490

by FY03, which would have been a 40% reduction. We were not relieved of this lower target until we had such critical skill shortages that I had to essentially force the headquarters to let me do some hiring for critical skills in FY00 — the first year that gains exceeded losses since FY93. The cultural change challenge can also be seen in the Shuttle organization headcount data: We accomplished a 67% reduction in the Shuttle organization headcount from FY92 to FY02. The workforce dropped from 1,075 to 354. The contractor organization (USA) was reduced by 10%, decreasing from 7,299 to 6,557, over this period. These were the people on the front lines of Shuttle Processing. As mentioned earlier, we also achieved a 67% reduction in the number of employees needed to provide oversight of our center operations contractor using the JBOSC concept.

Because of our strategic focus, these reductions were achieved in the context of a center that became more robust and vibrant each year. The leadership team led and managed well. The types of tools that we created to keep a focus on the matters that were strategically and tactically important are illustrated in this book. For example, we achieved amazing safety records by the focus on our Guiding Principles, one of which was Safety and Health First. We were awarded the Occupational Safety and Health Administration (OSHA) Voluntary Protection Program Star Flag for our achievements in safety. Both NASA civil servants and the major contractors achieved this rating. We created a number of projects and metrics to guide our development in this area. Each supervisor was held personally responsible for improving work conditions and eliminating safety hazards. I included myself in that quest by personally leading projects to remove substandard and temporary housing from the center. We were able to build a large number of new facilities for our processing personnel at work sites to improve safety in Florida's hazardous weather environment, as well as a new high-rise office building to eliminate trailer parks that were well beyond their useful life. We remodeled and expanded fitness centers and added a free rehabilitation service for those who were injured on or off duty to save dollars and improve the fitness and long-term health of our workforce. Our progress was measured in all categories by the use of metrics that we reviewed monthly as a leadership team, and individually twice a year at performance reviews with key personnel.

In terms of mission safety, the establishment of a world class surveillance concept for Shuttle allowed us to achieve the desired launch rates and maintain safety with only one Shuttle anomaly, attributed to KSC processing, during the period. The loss of *Columbia* was well investigated and, as a result, many issues were addressed and improvements ensued; however, KSC Shuttle Processing was not implicated in the cause chain for the mishap. The new Launch Services Program (LSP) for ELVs maintained a perfect mission success record. The MEIT team performed a marvelous job of testing the modules of the International Space Station. Elements built in the United States, Russia, Japan, Canada, and Europe were joined together in space for the first time without major difficulties.

Most importantly, we created a management team that learned together how to manage strategically. As mentioned in this book, many of the young people on this team at the beginning now occupy high-level leadership positions across NASA. Those that are still at KSC are doing a great job of tackling the new challenges of the day. One thing that is certain beyond death and taxes is change. I was pleased to have

an opportunity to lead this great team during a very difficult time. Truly, the position of being the KSC center director is the best. As I was fond of saying, "living on the beach and launching rockets for a living is a great way to live."

THE ESSENCE OF THE MESSAGE

The essence of this story is that transformations do not happen in a day. That is, a leader or an organization cannot expect to go to one strategic offsite and make an organizational transformation succeed. Successful transformations and strategy take time — time to think, hold conversations, make decisions, build commitment, and take actions. Furthermore, one set of action items from a strategic offsite is not enough to change the organization's performance. Achieving strategy will take many conversations, decisions, and actions over time. As we will learn from KSC's story, some of the conversations held during one strategic offsite led to very profound actions over the next 7 years. The basis for this understanding comes from reflecting upon and learning about KSC's evolution from 1995 to 2002.

This book contributes strategic thinking models for designing, developing, implementing, and evaluating strategic management to lead a large-scale organizational transformation. A transformation is the purposeful, intentional, consistent change of an organization's business model. The primary organizational outcome of strategic management is a successful transformation of the organization that positions the organization within its external environment and aligns its internal capabilities. A set of models, strategies, and methods (processes and tools) for strategic management are given based on the KSC experience. Managers and change agents can use the results to help implement a strategic management process unique to their organization. Senior managers and change leaders given the task of designing and implementing a strategic management process can use these models to help them in their efforts.

We will review the KSC transformation from a transformational and strategic management perspective. Other perspectives can and should be taken (e.g., political, space policy). We take this strategic management perspective to extract lessons learned from the KSC experience.

CAUTIONARY NOTE

I would be remiss if I did not share a few cautionary thoughts with you at the outset of this book. As an academic-based consultant, I tend to decompose a system to help explain it. In this decomposition, the message can at times seem both overly complex and overly simple. As you implement a strategy, keep the strategy and its process simple. Working with a technical, engineering organization, at times we had the tendency to overengineer the process. The process needs to be simple. Moreover, the strategic management process will be described in a cyclic, sequential fashion. However, the process is not always sequential. The process can and should be carried out in parallel and at multiple times throughout the year. We also need to distinguish this book's description of the strategy topic from a process perspective. Other perspectives, such as decision making, are just as important (e.g., see Mintzberg's *Strategy Safari: A Guided Tour Through the Wilds of Strategic Management*).

CHAPTER CLOSURE

The intention of this chapter was to provide the overarching intent of this book — to document and learn from the KSC experience. We will next share the story we are learning from.

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Mintzberg, H., Lampel, J., and Ahlstrand, B., *Strategy Safari: A Guided Tour Through the Wilds of Strategic Management*, Free Press, New York, 2005.

2 What Is the KSC Story?

To help us learn about transformations and strategy, we use the Kennedy Space Center (KSC) transformation from 1995 to 2002 as an experience base. We look at this case by answering the following questions:

- What is KSC?
- Where was KSC in 1995? What were the trigger events that drove KSC to change?
- What was the strategic context facing KSC from 1995 to 2002?
- What challenges did this strategic context create for KSC from 1995 to 2002?
- What was the KSC strategy that drove the change?
- Where was KSC in 2002?
- What changed in KSC from 1995 to 2002?

Using these questions as a foundation, we will understand in detail the answer to the important question: How did KSC make this transformation? Answering this question is the basis for the seven transformation lessons learned.

WHAT IS KSC?

To fully understand the strategic management story, we must first understand KSC and how it fits within the National Aeronautics and Space Administration (NASA) management structure. KSC is one of 10 field centers for NASA. The other centers are: Ames Research Center, Dryden Flight Research Center, Glenn Research Center, Goddard Space Flight Center, Jet Propulsion Laboratory, Johnson Space Center, Langley Research Center, Marshall Space Flight Center, and Stennis Space Center. NASA is administered from NASA headquarters, based in Washington, D.C. Each of the 10 centers has unique capabilities and roles. KSC has been the NASA launch operations center since 1962:

> NASA's John F. Kennedy Space Center has helped set the stage for America's adventure in space for more than four decades.
>
> Since its establishment in July 1962 as the agency's Launch Operations Center, the spaceport has served as the departure gate for every American manned mission and hundreds of advanced scientific spacecraft. The center was renamed the John F. Kennedy Space Center in late 1963 to honor the president who put America on the path to the moon (Kennedy Space Center website).

A more detailed history of KSC can be found on the Kennedy Space Center website.

WHERE WAS KSC IN 1995? WHAT WERE THE TRIGGER EVENTS THAT DROVE KSC TO CHANGE?

To understand the nature of KSC's transformation, we first provide a baseline of where KSC was in 1995 — its external environment, its credibility within NASA, the KSC direction as defined by NASA, the programs KSC was affiliated with, and its management philosophy.

In the early and middle 1990s, the U.S. government was pushing to "reinvent" and downsize. The push in the government was happening within NASA as well. With Dan Goldin as the administrator, the agency was making a push toward a faster, better, cheaper philosophy. The events that caused the transformation for KSC included five elements:

- The change in NASA leadership to Dan Goldin
- The Report of Space Shuttle Management Independent Review Team, which called for the privatization of Shuttle Operations (NASA, 1995a)
- A zero-based review (ZBR) that called for the reduction in the number of civil service employees (NASA, 1995b)
- The creation of the Space Flight Operations Contract (SFOC) and the consolidation of contract control to the Johnson Space Center (NASA, 1995a)
- Decline or phase-down of some of the programs being conducted at KSC

Let us look at each of these changes in more detail.

Change in Leadership

With the change in NASA leadership to Dan Goldin, NASA began to implement a "better, faster, cheaper'' philosophy (McCurdy, 2003). Past change efforts at KSC had focused on improving the hands-on processing operations of the Space Shuttle. However, NASA was returning to its original mission and was reestablishing itself as a research-focused organization. This would require both NASA and KSC to transition out of their operational roles. Because KSC had traditionally been an operational center, this transition was a significant change for its civil service workforce. The impact of this philosophy on KSC was that the traditional KSC civil service operational role within the agency was being reduced. It was expected that fewer civil service employees would be required, and those that remained would oversee the work of the contractor that would now manage ground operations of the Shuttle. This philosophy was being further supported by external parties.

Privatization

NASA groups were supporting this move out of operations for KSC. A NASA report called for the privatization of Shuttle operations and a reduced civil service role in the daily operations of the Shuttle processing activities. In February 1995, NASA released the Report of the Space Shuttle Management Independent Review Team

(NASA, 1995a). The intent of the team was "to review the present Shuttle operation management and to propose innovative approaches to significantly decrease total operating costs while maintaining systems safety" (NASA 1995a, iii). The team made three conclusions:

1. NASA should establish a clear set of program goals, with greater emphasis on cost-efficient operations and user-friendly payload integration.
2. NASA should redefine the management structure, separating development and operations and disengaging NASA from the daily operation of the Space Shuttle.
3. NASA should provide the necessary environment and conditions within the program to pursue these goals (NASA 1995a, vii).

The team also recommended changing the overall contract for Shuttle operations:

> The team concluded that consolidating operations under a single-business entity was the most advantageous. This single-business approach is a change from the present one of government control with industry response to that of government direction with industry operation (NASA 1995a, ix).

This privatization push would lead to a push to reduce the number of KSC civil service employees.

Reduction in Civil Service Workforce

NASA conducted a ZBR, which called for a significant reduction in the number of civil service employees at KSC. The intent of the NASA ZBR was to "streamlin[e] functions at the NASA centers, so each installation becomes a 'center of excellence,' concentrating on specific aspects of NASA's mission." (NASA, 1995b). In May 1995, NASA released the results of the ZBR. Consistent with the Report of the Space Shuttle Management Independent Review Team, the ZBR team recommended adopting operating guidelines. One of them was that "Aerospace operations, including the Space Shuttle, will be performed by NASA contractors." The results of this ZBR included:

- KSC was given the mission/center of excellence of "space launch."
- The civil service workforce was projected to be reduced by about 1,150 employees.
- The contractor workforce was projected to be reduced by about 2,000 employees.

Finally, the ZBR documented the consideration of "restructuring the Space Shuttle program and preparing it for contractor consolidation and privatization." The impact on KSC was a lessening of the perceived value of the KSC civil servant in operations. This led to the need for KSC to reduce its civil service workforce. Figure 2.1 highlights the projected shift in civil service workforce at KSC from 1995 to 2002.

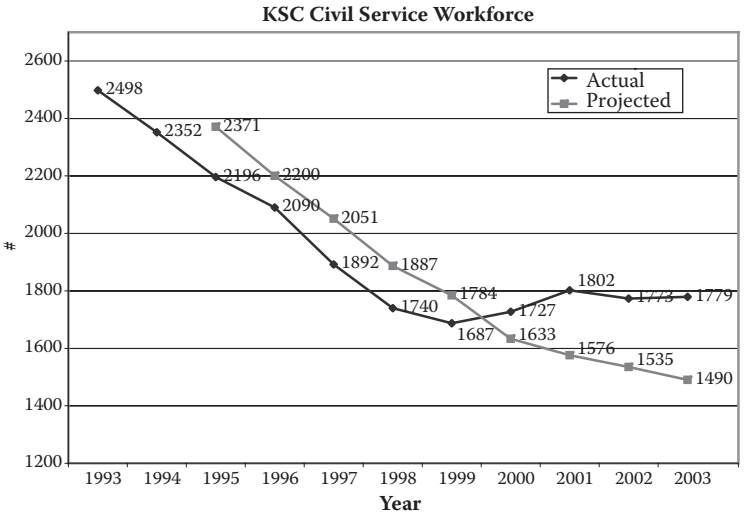

FIGURE 2.1 KSC was projected to have significantly less civil service employees.

The Space Flight Operations Contract (SFOC)

Consistent with the above three drivers, NASA created the SFOC. SFOC was a response to the drivers on NASA:

> In order to reduce costs through efficiencies believed to be inherent in the private sector and reorient NASA's focus from operations to research, development, and technology, NASA has implemented a plan for privatizing space flight operations for the Space Shuttle. The first phase of that plan is a consolidation of a majority of Space Shuttle processing support contractors and some NASA operational activities into a single Space Flight Operations Contract negotiated with United Space Alliance (NASA, 1996).

The impact on KSC was that the Shuttle operations processing contractor no longer reported to KSC but rather to the Johnson Space Center. The number of government-mandated inspections points was also significantly reduced.

Program Decline

The programs being conducted at KSC declined or phased down. The civil service contribution to the Shuttle program was declining due to the changes associated with the move to SFOC. Spacelab work was declining. KSC support to other programs was not expected to grow.

Challenges Facing KSC in 1995

Taken together, these trigger events created a context in which the inherent value of the civil service workforce within KSC was questioned. NASA was defined as a

research organization, which does not perform operations. KSC was defined as an operational center, which does not do research. KSC faced an identity crisis as well as a funding and workforce challenge. These five trigger events led to four big challenges for KSC in 1995. KSC had to:

1. Communicate the relevancy of their operational knowledge to the success of current and future programs.
2. Transition from phasing down programs and roles into emerging programs.
3. Become responsive and be ready to meet the requirements of the diminishing role and budget by realigning people, processes, and tools.
4. Address low morale in the workforce.

In summary, KSC was faced with the push to convert itself to a government-owned, contractor-operated center.

The need for a KSC vision was driven by NASA's move out of operations (e.g., SFOC for Shuttle) and the decline in programs being implemented at KSC. These forces led to low workforce morale at KSC (Right Management Associates, 1996). The management philosophy at that time focused on doing the assigned job well and being responsive to guidance from NASA headquarters and programs. KSC needed a vision for the future. KSC focused on making the safe transition to SFOC and reducing the workforce. There was no shared articulation of KSC's contribution in the future. In response to this, a group of employees was formed to serve as a focus group to help define the problem facing KSC. Figure 1.1 shows the result of forming this employee group. They pointed to the need for a shared vision.

Before we discuss the journey KSC made, we need to understand the "control context" in which KSC existed. We need to understand how much control KSC had within its role as a NASA field center. KSC was valued for getting the job done. KSC executed what it was asked to do and responded to major program decisions. As shown in Figure 2.2, KSC as a government entity had limited influence on the environment in which it operated. Each one of these layers offers further influence on KSC. The president and Congress set the overall direction for NASA and assign appropriate resources for it. The NASA administrator and his management team translate the direction into NASA programs. The NASA program managers define program requirements for the projects that the centers are to meet. KSC had very little influence in setting the overall NASA and program direction. For example, KSC could not raise capital to invest in a new line of business or to fund its evolution.

KSC was extremely responsive to agency requests. Roy Bridges, KSC director, noted this in his remarks in the March 1997 KSC Implementation Plan:

> This plan is the initial step in defining KSC's role in current and future NASA endeavors. It will help us lead our Agency responsibilities and see how we fit into enterprise plans. In working the next iteration of this plan, we will develop a clearer focus by prioritizing and concentrating our efforts on critical strategies to assure we achieve our objectives (KSC Implementation Plan, 1997).

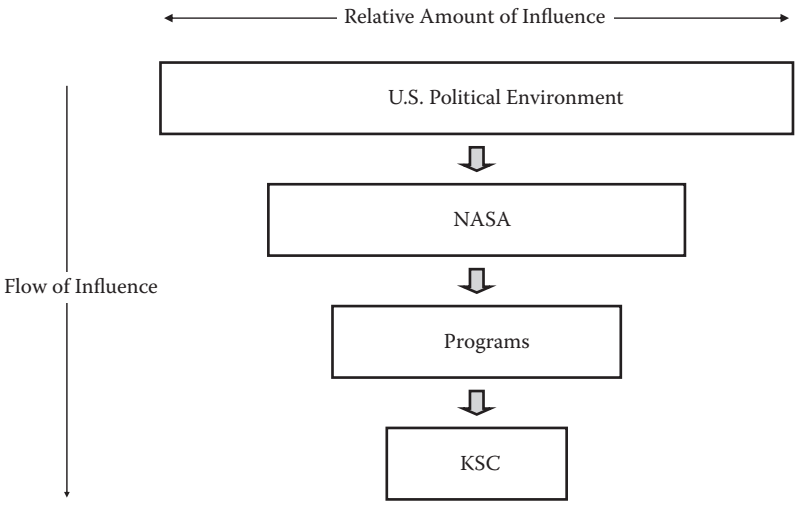

FIGURE 2.2 Hierarchy of influence on KSC.

Furthermore, Goldin asked Bridges to develop a strategic plan for KSC. Table 2.1 highlights where KSC was in 1995. This context provides the baseline from which KSC evolved.

WHAT WAS THE STRATEGIC CONTEXT FACING KSC FROM 1995 TO 2002?

To understand and learn from the KSC evolution, one needs to understand the nature of its environment. The strategic environment comprises the U.S. space industry, the presidential and congressional political environment, and the NASA environment. These environments defined the challenges and opportunities that KSC faced.

TABLE 2.1
Summary of KSC's Context in 1995

Category	KSC in 1995
External environment	• Reinvent/downsize government • NASA: Goldin, "faster, better, cheaper," zero-based review
KSC's credibility within NASA	• Gets the operational job done
KSC direction	• NASA does research, KSC is an operational center • Reduce civil service role in operations
KSC program affiliation	• Shuttle role declining • Spacelab role declining
KSC workforce	• 2,196 civil servants from a reduction of 2,498 in 1993 • 1,075 civil servants supporting Shuttle operations • 7,299 contractors supporting Shuttle operations

World Events

In the last few decades, immense world events have influenced NASA and KSC. For example, the fall of the Soviet Union led to the need for forging more strategic relationships between the United States and Russia. With the end of the Cold War, the United States and Russia wanted to keep Russian scientists and engineers employed in meaningful work. The International Space Station (ISS) provided an opportunity for Russian engineers and scientists to be employed in peaceful activities. The partnership on the ISS provided an opportunity for KSC to be involved in a development activity more aligned with the nonoperations role for KSC. A large amount of KSC's workforce provided direct support to the ISS effort. The delays in the Russian module created both opportunities and constraints for KSC. The delays provided an opportunity for KSC to complete additional testing on the ISS elements. This testing helped ensure the on-orbit integrity of the elements. The delays, in addition to other problems, led to a financial crisis for the ISS program. Congress and NASA decided to fix the problem within the Human Space Flight enterprise — that is, no additional funds were given to NASA to support the effort, nor were funds moved from other enterprises within NASA.

The terrorist events of September 11, 2001, had a huge impact, not only on the nation but also on NASA. First, the nation's resources were now focused on homeland defense and on executing wars in Afghanistan and Iraq. Second, the heightened security requirements placed further budgetary constraints on NASA and KSC to ensure that the nation's vital space assets were protected. Third, there was a heightened need for a responsive space lift capability — the ability to quickly respond militarily any place in the world anytime. There was a reinvigorated need for a military space presence. A military space plane again moved to the forefront. This created an opportunity for NASA to form a partnership with the Air Force. KSC partnered with the Air Force for developing advanced technologies for processing launch vehicles/space craft and ranges (NASA and U.S. Air Force, 2003, 2004).

The U.S. Space Industry

The U.S. space industry can be viewed from three markets or perspectives: civil/scientific, military, and commercial. As the U.S. space industry evolved and changed within each of these markets, KSC's opportunities and constraints changed. The overall U.S. leadership in worldwide launches diminished.

In the early 1990s, the space industry was pushing heavily for the government to play less of a role in the operations of the civil space business. There was a belief that the civil or science space efforts could be a government-supported role, but the government should not play a major role in the operations of the civil space business (NASA, 1995a). This desire helped create the initial push for removing KSC from the daily operations of the Shuttle program. The industry believed it could do a better job if the government was not involved. There was a continuous change in the overall philosophy for the government's role in the Shuttle program, from government oversight to privatization to commercialization (Aerospace Safety Advisory Panel, 1996; NASA, 2001). Both NASA and the military began the process of removing themselves from daily space operations.

In the military space business, the Air Force was under pressure, similar to NASA, to remove itself from the space operations business. However, failures and concerns for program terminations led the Air Force to reconsider its approach to the space business (Space Launch Vehicles Broad Area Review Report, 1999). There was a push to maintain greater engineering discipline and understanding of the space launch business.

The commercial space industry went from a projected boom to an actual bust. In reports in the early 1990s, the commercial space industry was projected to be significant. The market never appeared. The commercial space market had collapsed (Air Force Space Launch Vehicles Broad Area Review Report, 1999). For example, Boeing announced in 2002 that it was removing itself from the commercial space launch business and concentrating on government launches (Boeing, 2003).

This ever-changing nature of the space industry provided both constraints and opportunities for KSC. As fewer launches occurred, there was less of a need for the services KSC provided, and its resources became constrained. However, opportunities also emerged. There was the realization that in order for the United States to improve its access to space, more than just the launch vehicle and spacecraft had to be addressed (Office of Science and Technology Policy and National Security Council, 2000). The spaceport and range operations are an important part of an integrated space transportation system: to support a civil program (e.g., space station), a commercial market (e.g., commercial satellites), or a military market (e.g., military space plane) (NASA and U.S. Air Force, 2004).

Within the U.S. political scene, the focus was not on space. In the mid-1990s, the focus was on reinventing government, budget responsibility, and governmental infighting. The United States had a balanced budget with surpluses. With the transition from the Clinton Administration to the Bush Administration, the focus transitioned to the new president's agenda (e.g., President's Management Agenda). The government was continuing to move to greater competitive sourcing and use of private sector resources (e.g., FAIR act). Then, beginning with 9/11, the focus shifted toward homeland security and the war on terrorism.

As shown in Table 2.2, the world provided very little that was positive for the space industry, NASA, and KSC. World events did provide the backdrop (e.g., results of the end of the Cold War) for Russia's involvement in the ISS. Beyond this political drive, there was very little excitement about space. As the 1990s were ending and the new century began, the world became immersed in terrorism and wars.

The NASA Environment

Given this external context, NASA faced a challenging environment:

- NASA operated without a strong, national mandate, other than partnering with Russia and international partners for political reasons.
- NASA was realigning and downsizing.
- NASA was continuously shifting its policy/philosophy for the Shuttle program.
- NASA was continuously shifting its exploration and new vehicle development efforts.

TABLE 2.2
Summary of the External Environment Facing NASA and KSC

Element	1995–1997	1998–2000	2001–2002
World events	• Russian relations	• Emerging wars/ terrorism	• 9/11 and global terrorism • Afghanistan and Iraq wars • War on terrorism • Business scandals
National political environment	• Reinventing the government • Governmental infighting • Budget responsibility • Domestic-focused • Downsizing of government • Keeping scientists and engineers engaged in meaningful work	• Political turmoil — Clinton and election • Transition to new president • Emerging foreign policy • President's management agenda • Balanced budget and budget surpluses	• Terrorism and war • New president/ President's Management Agenda • International relations • Focus on security • Budget deficit • President's blueprint for new beginnings
U.S. space industry	• Involving Russia in ISS • Strong push to get government out of the space business • Projections of exploding commercial space business	• Collapse of commercial space business • Push to get government back into launch business as a result of launch failures	

These challenges were met with a series of management philosophy mandates.

Throughout this period, the programmatic direction was continuously changing within NASA. As stated earlier, the Shuttle philosophy oscillated from government oversight to government insight. The philosophy also oscillated among government involvement in the Shuttle program, privatization, and commercialization. This shift was based on the different views of the state of the Shuttle, which ranged from operational vehicle to research/development vehicle. The ISS philosophy was also being discussed (United States Congress, 1998). Various discussions focused on what "ISS complete" meant. The ISS discussion also started with the ship-and-shoot philosophy, and eventually evolved to a multi-element integrated test approach. The launch vehicle and spacecraft development efforts continuously shifted as well (e.g., X-vehicles, Next Generation Launch Technologies, Space Launch Initiative, Orbital Space Plan). Each one of these efforts focused on developing a new launch vehicle system that would be more efficient, reliable, and safe than the current Shuttle Transportation System. The space exploration direction also shifted. In 1997, NASA was highlighting the successes of the Mars Pathfinder and Mars Sojourner rover. "Mars or Bust" became the mantra.

Within a short time, Mars and exploration were deemphasized. This changing program direction did not provide a stable environment for KSC.

WHAT CHALLENGES DID THIS STRATEGIC CONTEXT CREATE FOR KSC FROM 1995 TO 2002?

As shown in Table 2.3, this NASA environment created challenges for KSC. In the mid-1990s, KSC had to justify its existence and determine how it fit within a changing NASA — a research-oriented, faster, better, cheaper agency. In the late 1990s, the challenge became developing a vision for the future. Throughout these years, KSC had to continue to balance safely meeting the operational mission with creating the future — transitioning out of operations and into new roles. Once the KSC vision was created, the challenge shifted to its implementation.

The U.S. space industry and NASA environments and trends created for KSC an ever-changing environment, decreasing resources, and little to no control over its

TABLE 2.3
Challenges KSC Faced During Its Evolution

Element	1995–1997	1998–2000	2001–2002
Mission execution	• Completing the mission • Bringing value in a resource-constrained environment	• Completing the mission • Maintaining critical skills • Gaining resources to complete the mission	• Completing the mission • Gaining resources to complete the mission
Set strategy	• Understanding the need for change • Determining the future • Defining a vision for the future	• Refining a vision for the future	• Maintaining focus and implementing the vision
Make the strategy real	• Downsizing • Defining meaningful work	• Developing roles to participate in Shuttle upgrades, new vehicle development, exploration • Gaining support for the KSC vision • Demonstrating customer-driven development efforts • Responding to unfunded mandates	• Aligning the organization to the future
Enable the transformation	• Creating the need for change	• Aligning the leadership team to the vision	• Aligning the leadership team to the vision

own resources or destiny. When we look at what KSC was and the level of control it had as a field center, KSC was operating within a NASA environment during this period that was lacking:

- A vision or mandate to connect to and build a sense of purpose for the future
- New programs to which to connect and transfer core competency
- An ability to control its destiny
- A shared understanding of how KSC's operational knowledge could be used to aid in the development of new vehicles

This NASA environment created an environment in which KSC had to:

- Justify its operational role and the civil service value in the operations
- Continually face the challenges of inserting its operational knowledge into ever-changing new vehicle development and space exploration efforts

WHAT WAS THE KSC STRATEGY THAT DROVE THE CHANGE?

To respond to this environment and associated challenges, KSC responded strategically. The KSC senior management team responded to KSC director Roy Bridges' strategic questions about how KSC wanted to change. Starting in 1997, the KSC senior management team held a series of strategic conversations, from which the basic philosophy or direction was born. This direction focused on eight key elements:

1. Changing KSC from Shuttle-centric to multiprogram-centric
2. Recognizing the knowledge contribution of KSC's civil servants
3. Systematically transitioning the workforce from one program to the next
4. Defining KSC's core business
5. Defining KSC's guiding principles (i.e., values)
6. Defining a proactive approach to its destiny
7. Defining KSC's products and services
8. Defining a roadmap to the future

First, KSC defined the desire to change from being Shuttle-centric. Figure 2.3 highlights the nature of this change from KSC's past to its future. Following the first offsite with Bridges, a new center director, this chart was developed by teams of KSC senior managers to signify the need to change KSC. Following this first management offsite, four senior management teams defined the past and future states of KSC. The senior management teams integrated their findings into an overall philosophy of being a multiprogram-centric center.

Second, KSC defined and recognized the knowledge contribution of KSC's civil servants. KSC focused on "bearing fruit" for NASA now and in the future. KSC understood its roots and heritage. It focused on using its operations knowledge and expertise to continue to support current operations and to enhance the development of future vehicles, payloads, spaceports, and ranges. Figure 2.4 shows the chart that senior managers developed to define the value of KSC operational knowledge. The

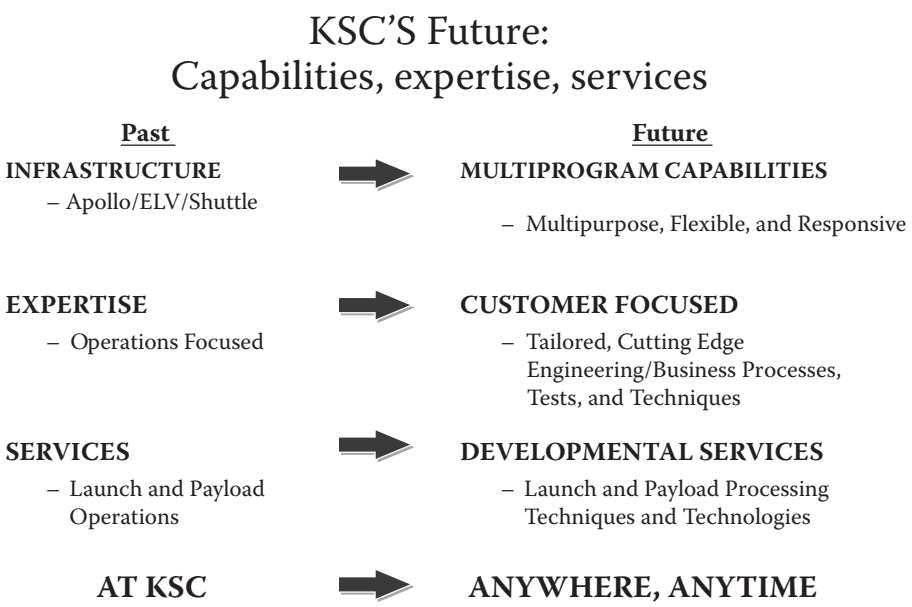

FIGURE 2.3 Shifting KSC from its past to its future.

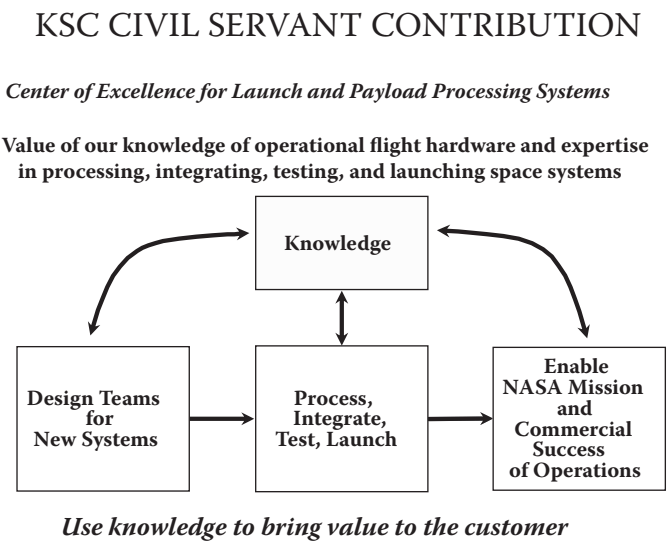

FIGURE 2.4 The value of KSC's operational knowledge to NASA.

operational knowledge value, in addition to its application in the processing, integration, testing, and launching of the Shuttle, could be applied to: (1) help designers design new launch vehicle and spacecraft systems, and (2) enable mission and commercial success of operations (e.g., support the expendable launch vehicle commercial business with NASA).

Third, KSC defined an approach for systematically transitioning the workforce from one program to the next. Shown in Figure 2.5 is the original concept of transitioning and evolving the KSC workforce. In this original concept, KSC would help transition Shuttle operations into a new contract management approach and then eventually privatize the Shuttle fleet. This was the nature of the conversation in the early and middle 1990s. Consistent with the role of operational knowledge (Figure 2.4), the workforce would then use their operational knowledge on other NASA development efforts. KSC participated in these programs until they were canceled. They would continue to choose other paths to use their operational knowledge to support NASA.

Fourth, KSC defined its core business. This core business statement (see Figure 2.6) emphasized the operational role of the space center. The business statement also recognized KSC's history and competence at designing and building the infrastructure needed for the spaceport operations (i.e., processing, integrating, launching, and landing launch vehicles and spacecraft). Again, this core business statement was developed by a team of senior managers during a strategic management offsite. This highlighted the push for KSC to further build its development capability. This new emphasis on the development capability was a key addition to KSC and part of the KSC vision — a vision to move beyond just operations.

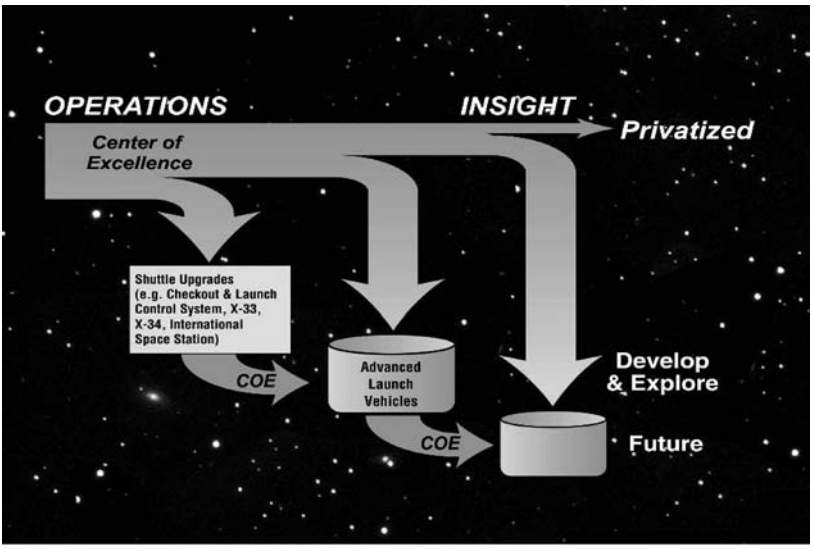

FIGURE 2.5 KSC's systematic workforce transition process.

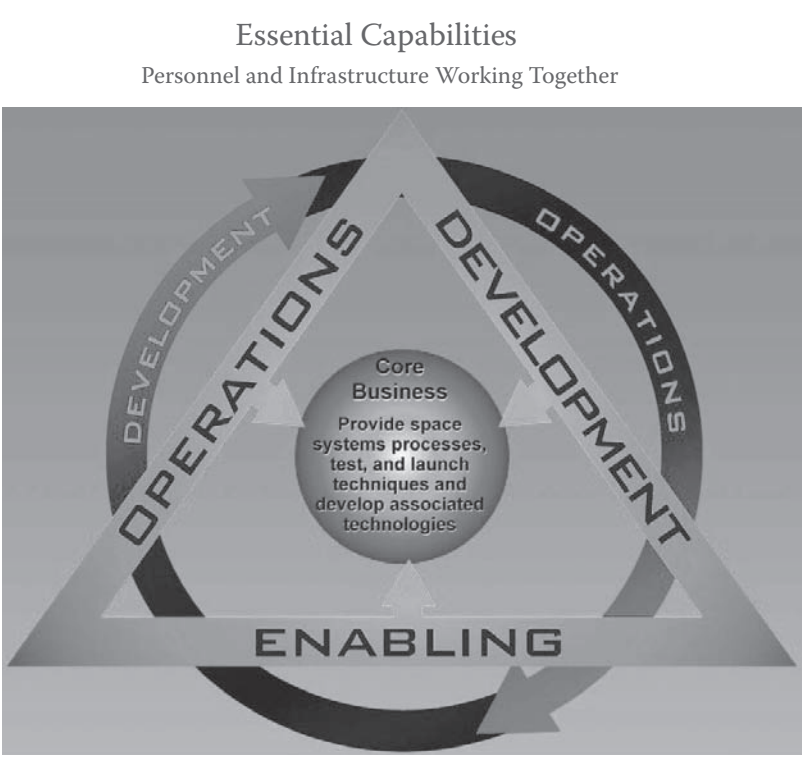

FIGURE 2.6 KSC core business statement.

Fifth, KSC defined its guiding principles. These guiding principles are shown in Figure 2.7. As we will see later, these guiding principles led to a series of specific actions to reinforce them.

Sixth, KSC defined a proactive approach to its destiny. As shown in Figure 2.8, KSC wanted to be both responsive and proactive in its work with NASA. As a field center, KSC clearly understood the need to be responsive to NASA's direction. NASA and its programs provided KSC the work to be completed. KSC provided implementation plans on how it would meet programmatic requirements. KSC also wanted to become proactive and provide more input into the agency's strategic direction. KSC was becoming more proactive in helping influence NASA's strategic direction.

Seventh, KSC defined its products and services, which are shown in Figure 2.9. KSC defined this view to connect the development products with the products and services it delivered to the operational customers. Again, a key part of KSC's vision was to increase KSC's involvement and capability in technology development and science. They wanted to ensure that these efforts were aligned to ground operations of its customers.

Eighth, KSC defined a roadmap to the future. As shown in Figure 2.10, this roadmap defined the goals, objectives, and key strategies for KSC to accomplish. This roadmap was a strategic product that defined the specific accomplishments that

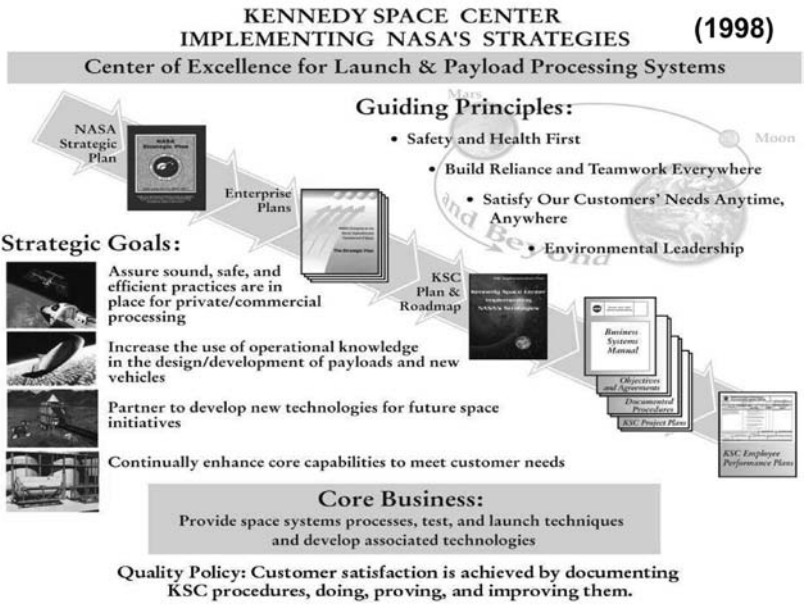

FIGURE 2.7 KSC guiding principles.

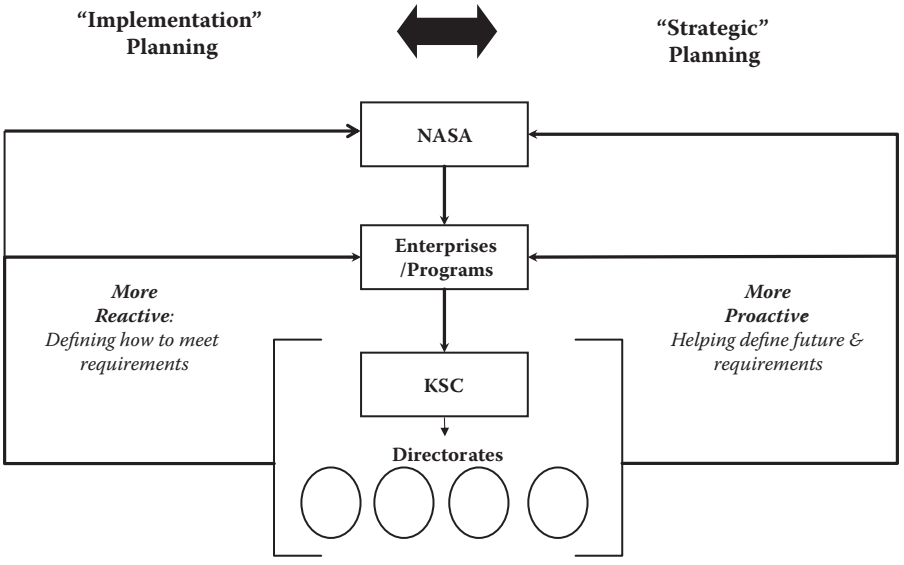

FIGURE 2.8 KSC's responsive and proactive approach.

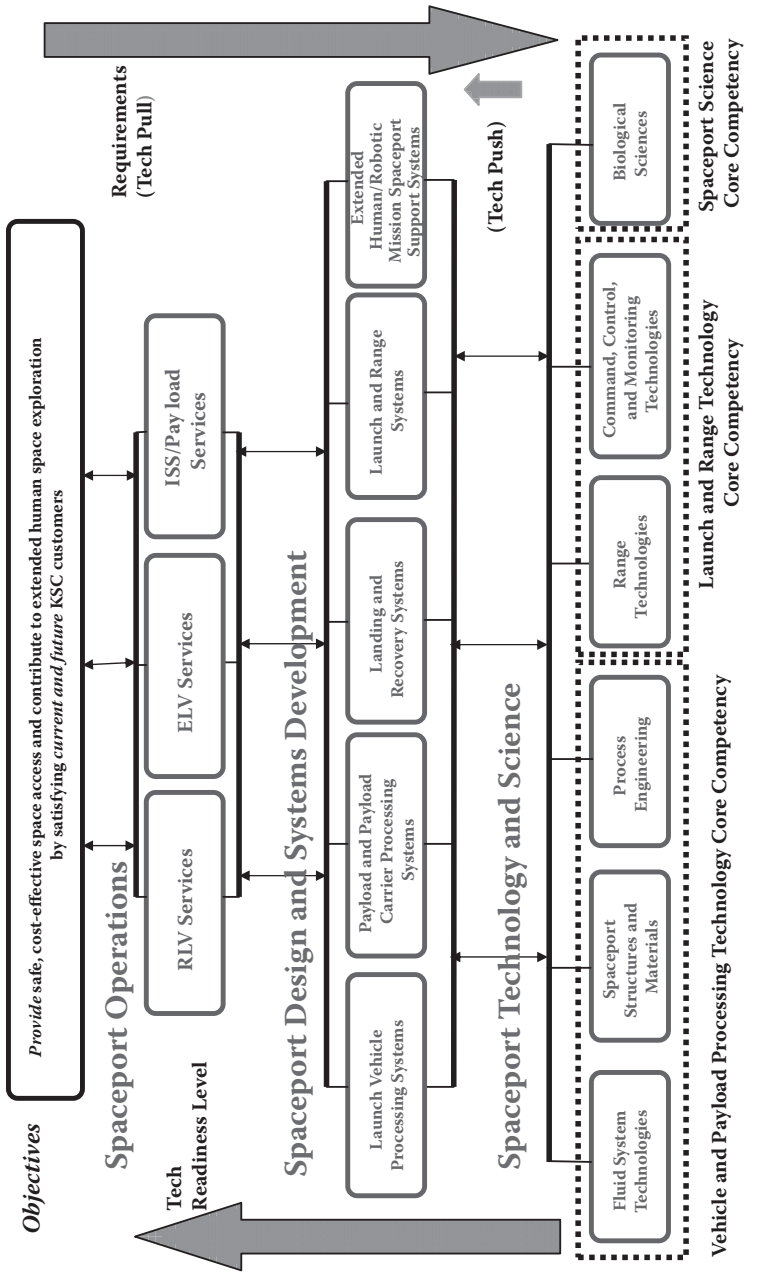

FIGURE 2.9 KSC product and service map.

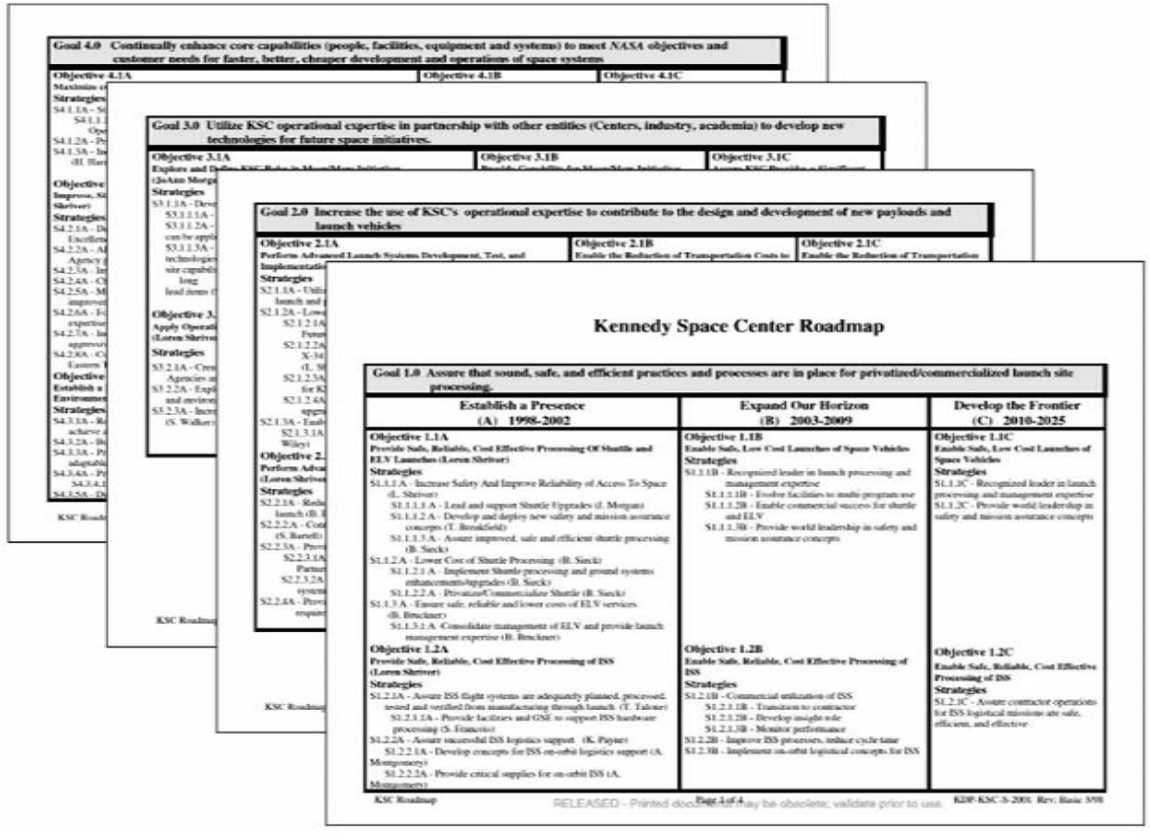

FIGURE 2.10 KSC strategic roadmap (March 1998 version).

would have to take place for the implementation of the strategic intent defined by the preceding seven strategic products.

As shown in Figure 2.11, taken together these eight elements guided KSC's evolution. Further strategic direction products were developed from the foundation provided by these eight core products. As will be discussed in the next chapter, these products led to specific actions. Over time, KSC refined this concept of its strategic direction to be an accepted center that focused on three elements: operations, development, and enabling functions. The push to increase the development function became a major focus for KSC.

WHERE WAS KSC IN 2002?

To understand and learn from the KSC transformation, one needs to understand where KSC was in 2002. I choose the end point for this case as 2002 because with the *Columbia* accident in 2003, a new era within NASA was beginning. As shown in Table 2.4, in 2002 KSC was operating in an external environment focused on the war on terrorism.

KSC's credibility and presence within NASA was significant. KSC alumni held significant management positions within the NASA structure (e.g., Roy Bridges eventually became center director at Langley Research Center, Lesa Roe was deputy director and then became center director at Langley Research Center, Jim Jennings became deputy associate administrator for Institutions and Asset Management within NASA HQ, Dave King became the center director at Marshall Space Flight Center.) Furthermore, the role of operational knowledge in new vehicle development was supported. KSC's strategic direction was supported by NASA HQ in principle. There was significant program affiliation with vibrant roles in Shuttle, ISS, and the Launch Service Program (LSP). KSC continued to have limited funded roles in research and development activities. KSC's state at the beginning of 2002 is summarized in Table 2.4.

WHAT CHANGED IN KSC FROM 1995 TO 2002?

Table 2.5 compares KSC in 1995 to KSC in 2002. KSC changed significantly during this time. From a short-term perspective, KSC could be viewed as being successful:

- Shuttle, Expendable Launch Vehicle, and ISS missions successfully met
- Transition of Shuttle processing to SFOC
- Transition of the Expendable Launch Vehicle program to KSC

All of these were accomplished while responding to national political (presidential and congressional) and NASA initiatives, and at the same time downsizing the workforce. Some would say KSC had not been successful because it did not succeed in becoming a development center. KSC has not received a development program to directly support a large portion of civil service employees for technology development efforts. In the remainder of this book, we will explore and understand how KSC made these changes.

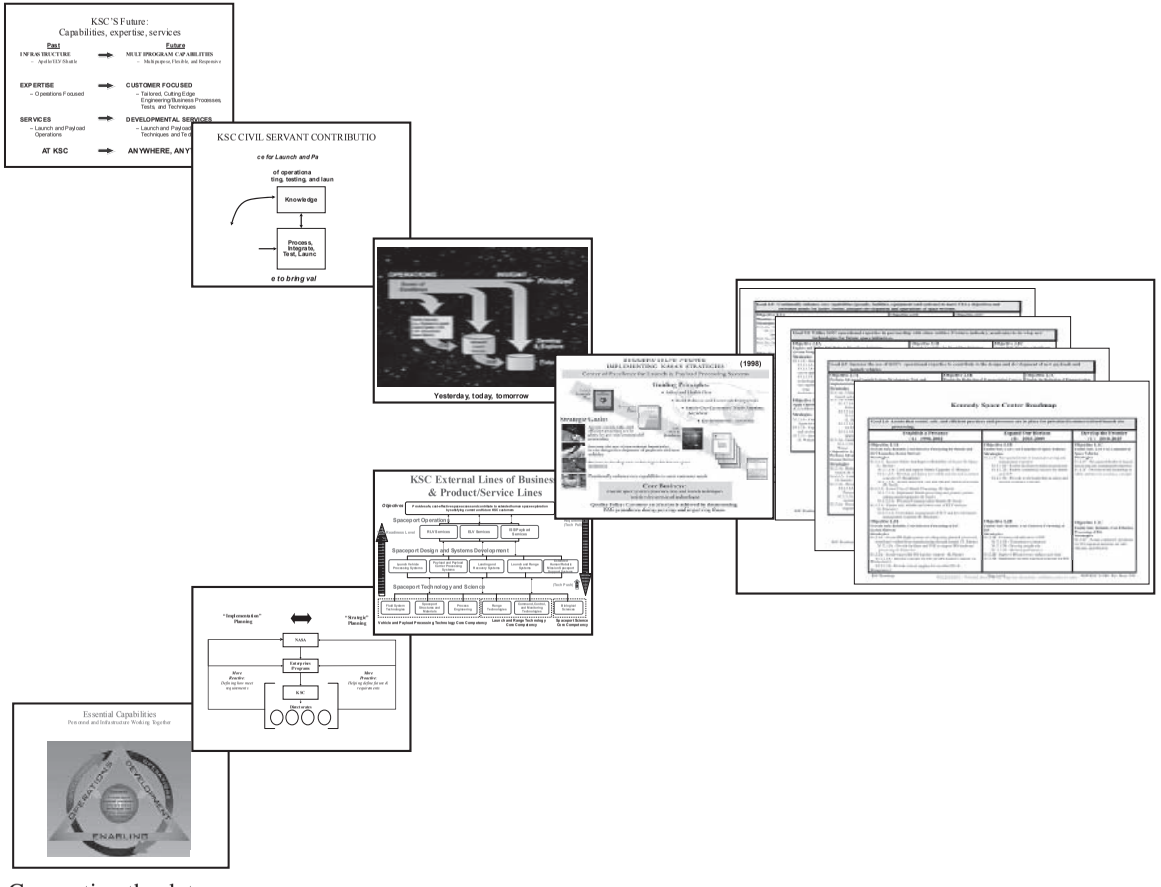

FIGURE 2.11 Connecting the dots.

TABLE 2.4
Summary of KSC's Situation at the Beginning of 2002

Category	KSC in 2002
External environment	• Terrorism and war
KSC's credibility within NASA	• Significant number of KSC alumni in leadership positions within NASA • Value of operational knowledge is appreciated and sought
KSC direction	• Space launch operations • Launch Service Program (LSP) lead • Spaceport and range technologies designation
KSC program affiliation	• Shuttle • ISS • LSP • Biology/Life science • Spaceport and range technologies
KSC workforce	• 1,773 civil servants • 354 civil servants supporting Shuttle operations • 6,557 contractors supporting Shuttle operations

KSC's true long-term success may be in moving to a culture to develop and implement a disciplined strategic management and business process. KSC's strategic management initiative accomplishments include:

- Moved to a strategic management approach
- Developed and continued to refine a strategic context and intent to reflect the ever-changing environment
- Published numerous strategic implementation plans
- Successfully gained ISO and VPP (OSHA Voluntary Protection Program for Flag) certification
- Developed and implemented a process to connect both expectations and performance requirements from the NASA strategic plan to the individual level (e.g., KSC roadmap, Directorate objectives, and employee performance alignment)
- Developed a systematic process for identifying priorities for technology efforts
- Revitalized the infrastructure in an environment where resources were scarce
- Formed partnerships with universities to enhance research and development capability
- Focused KSC's workforce on core competencies
- Formed partnerships with the Air Force and the State of Florida

KSC's success can also be measured by its agility or ability to continuously understand the environment and position itself to continue to bring value to NASA and the space industry. Consider the changes in direction that both NASA and KSC experienced:

- Downsize to reduction in force to no reduction in force to hire more civil service employees to transfer of civil service employees to contractor or private sector positions.

TABLE 2.5
Comparison of KSC in 1995 to 2002

Category	KSC in 1995	KSC in 2002
External environment	• Reinvent/downsize government • NASA: Goldin, "faster, better, cheaper," zero-based review	• Terrorism and war
KSC's credibility within NASA	• Gets the operational job done	• Significant number of KSC alumni in leadership positions within NASA • Value of operational knowledge is appreciated and sought
KSC direction	• NASA does research, KSC is an operational center • Reduce civil service role in operations	• Space launch operations LSP lead • Spaceport and range technologies designation
KSC program affiliation	• Shuttle role declining • Spacelab role declining	• Shuttle • ISS • LSP • Biology/Life science • Spaceport and range technologies
KSC workforce	• 2,196 civil servants from a reduction of 2,498 in 1993 • 1,075 civil servants supporting Shuttle operations • 7,299 contractors supporting Shuttle operations	• 1,773 civil servants (29% reduction from 1993 to 2002) • 354 civil servants supporting Shuttle operations (63% reduction from 1993 to 2002) • 6,557 contractors supporting Shuttle operations (10% reduction from 1993 to 2002)

- Commercialize Shuttle processing (transition to SFOC and surveillance) to move for more government involvement in ground processing (in response to Air Force launch failures) to privatize/commercialize Shuttle to a return to greater government involvement in Shuttle processing.
- Various scenarios for ISS emerged from ship-and-shoot (where very limited testing is performed at KSC) to multiple element integrated testing (where various elements are tested in an integrated fashion), all the while dealing with various definitions of what "station complete" meant — what would the final configuration of ISS be in space.

Looking back at the transformation from the perspective of NASA's Vision for Space Exploration, KSC successfully maintained the critical operational knowledge needed for the new effort [e.g., (1) the ground processing of launch vehicles and spacecraft, and (2) developing and operating ground support equipment and facilities]. NASA is now in need of this knowledge as it helps prepare for the next generation of spacecraft and launch vehicles beyond the Shuttle Transportation System

— the crew exploration vehicle and crew launch vehicle. During the mid-1990s, the ZBR pushed for downsizing the KSC civil service workforce to about 1,400 civil servants. If this had occurred, KSC might not now have the right level of competency (both numbers and knowledge) necessary to perform its goal of completing existing missions (e.g., Shuttle and ISS), executing ongoing missions (e.g., LSP) while building the infrastructure for the future, and providing operational knowledge to vehicle development. KSC is executing the core contribution it defined in the mid-1990s: providing operational knowledge for new designs, current operations, and commercial success.

Finally, the success of KSC can be measured by how well the management team accomplished what it set out to do. As a result of the first series of strategic conversations, the management team defined an overall strategic agenda to transition from its current state. As shown earlier in Table 1.1, we shall understand and connect the dots of the actions that KSC took from 1995 to 2002. We shall further use this map of activities to understand how KSC evolved through strategy. We will explore the details of this map in the rest of the book.

CHAPTER CLOSURE

The intent of this chapter was to provide a brief historical perspective to the situation KSC faced and a high-level view of what changed within KSC. We shall use this perspective to understand the lessons learned for such a transformation.

EYE ON THE LITERATURE

These sources can be useful to help the reader further understand the space industry and evolution of NASA and KSC during this period:

- NASA history website (http://history.nasa.gov/)
- KSC history website (http://www.nasa.gov/centers/kennedy/about/history/index.html)
- *Reinventing NASA: Human Spaceflight, Bureaucracy, and Politics* by Roger Handberg
- *A History of the Kennedy Space Center* by Kenneth Lipartito, Orville R. Butler, and Gregg A. Buckingham

ORGANIZATIONAL SELF-APPLICATION TASKS

Here is a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for transformation.

Understand Your Organization's Past Evolution

Pick a major time of change in your environment or organization's life.

- How did the environment change?
- What were the forces acting on our organization?
- What challenges did the environment and forces create for our organization?
- How did our organization respond?
- What worked well in this response?
- What did not work so well in this response?

Understand Your Organization's Current Evolution

- How is the environment changing?
- What forces are acting on our organization?
- What challenges are the environment and forces creating for our organization?
- How is our organization responding?
- What is working well in this response?
- What is not working so well in this response?

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Section II

Introduction to Section II — The Seven Transformation Lessons Learned

The purpose of this section is to answer the seven transformation questions identified in "Why Should You Read This Book." In this section, we shall provide the lessons learned from the Kennedy Space Center experience described in the previous section.

3 Why Does an Organization Need to Transform?

Lesson learned 1: The need to transform is caused by our current business model being irrelevant, unresponsive, and unready — we are not producing the right product the right way.

You need to transform because something in the current or future environment made your organization's performance no longer acceptable. Your organization was running fine, producing the right product or service the right way. The customer was happy, the internal processes were working well, and the financial performance was going well. Something changed or is in the process of changing in the environment. A trigger event occurred. A trigger event is the event(s) that fundamentally shifted your relevancy or responsiveness in the industry. Your organization is no longer producing the right product the right way, or will no longer be doing so in the future.

Performance excellence is based on (1) how well the organization is positioned in the external market — how well the market values the organization's products and services, and (2) how well the organization delivers the products and services. The inherent challenge is that the organization must continue to adapt. Just because the organization delivers well today does not mean it will be able to deliver well in the future. As shown in Figure 3.1, to sustain performance excellence, the organization faces four possible scenarios:

- The organization delivers the right products the right way.
- The organization delivers the right products the wrong way
- The organization delivers the wrong products the right way
- The organization delivers the wrong products the wrong way.

The organization must continue to deliver the right products the right way. By doing this, the organization will have sustained performance excellence. However, the market changes its expectations over time. The market may desire a different product or expect the organization to deliver the same product a different way.

The organization is facing an ever-changing environment. Your organization should transform in order to sustain performance excellence by becoming more:

- Relevant to the industry and customers, by providing the right products and services

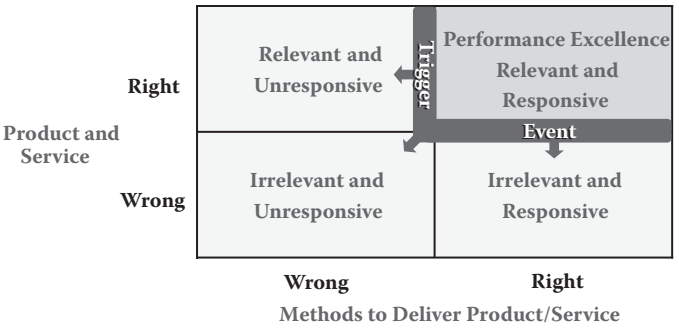

FIGURE 3.1 Trigger events cause our business model to become irrelevant, unresponsive, and unready.

- Responsive in meeting your customer's needs, by providing the products and services the right way (e.g., cost, quality, delivery speed)
- Ready with your organization's capabilities to be relevant and responsive to the customer now and in the future

Your current business model is irrelevant, unresponsive, and unready. Given the momentum an organization has, this challenge of sustaining performance excellence is not easy and requires a response different from the current, entrenched thinking.

From our review of Kennedy Space Center's (KSC's) transformation, we see that any organization's environment will always be changing, creating new challenges and reasons to transform. The organization's management team must continuously assess and understand the external environment. The environment in which KSC operated kept changing. For example, the new vehicle development efforts changed numerous times. The shift in the role of the civil service at KSC changed from involving the civil service to removing the civil service, then back to involving the civil service. The state of the Shuttle program shifted from government involvement to commercialization/privatization of the Shuttle, to the Shuttle as an experimental vehicle. These shifts created challenges for KSC.

For example, KSC was faced with varying challenges to sustained performance excellence:

- KSC was delivering Spacelab services the right way. However, NASA was moving away from this product overall. If KSC continued to deliver this product, it would have been the wrong product, and thus sustained performance would not have been achieved.
- KSC was delivering the right product in the Shuttle processing operations. However, during the early 1990s, NASA was moving the civil servants out of day-to-day Shuttle operations. NASA needed the product to assure safe processing but believed there was a different way to deliver the product. There was a push to move to a different role — the new Space Flight Operations

Contract. This contract shifted contract management responsibility from KSC to Johnson Space Center.

To maintain relevancy and responsiveness, KSC had to change the way it delivered its products and services. Maintaining sustained performance excellence requires the organization to continuously position and align itself.

PERFORMANCE EXCELLENCE THROUGH POSITIONING THE ORGANIZATION

Sustained performance excellence is partially achieved by positioning the organization in the market. The organization must be able to deliver the right products and services, as defined by the market and customer. As shown in Figure 3.2, as the environment changes, the organization needs to change its position within the environment. The position is a function of the market, business model, customer, and products and services. Over time, the organization can change its position in the environment by starting new business lines, stopping old ones, or continuing successful ones.

As the NASA philosophy and programs changed KSC had to determine the best way to provide services. KSC was being asked to pull out of operations — its primary role. The NASA environment was shifting to be research-focused. KSC needed to evolve or it would become irrelevant to NASA. KSC believed its core operational knowledge (Figure 2.4) provided the relevant knowledge to help designers of new vehicles and operators of current vehicles achieve success. KSC chose to position itself in emerging roles for developing new systems for ground processing of the Shuttle and International Space Station, supporting NASA mission success using commercial expendable launch vehicles (ELVs), supporting development teams of new vehicles, and developing new spaceport and range technologies.

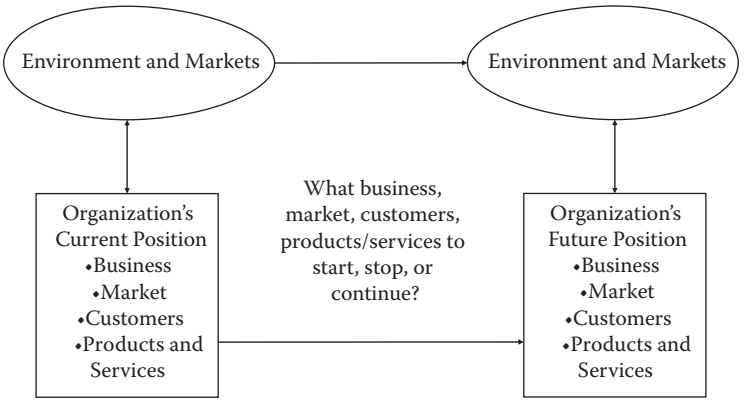

FIGURE 3.2 Positioning the organization.

PERFORMANCE EXCELLENCE THROUGH ALIGNING THE ORGANIZATION

Sustained performance excellence is partially achieved by aligning the organization's internal workings to deliver the value of a desired position. The organization must be able to deliver the right products and services in the right way. The model shown in Figure 3.3 describes the fundamental problem that an organization experiences during a large-scale transformation — determining what "the right work completed the right way with the right people at the right time" means for the organization to bring value to its customers. For KSC, addressing the problem of the right work was a process of flowing requirements down from the mission and vision set forth by NASA and senior management of KSC. The requirements were based on KSC's current, transitional, and future states. The right work included items such as missions, NASA requirements, meaningful work, and products and services the customer desired — both currently and in the future.

The right way includes the processes, structures, and tools by which the work is completed and managed. The "right people" is derived from understanding how people are organized to complete the work and the tools they use. The right people encompasses issues such as skill needs, number aligned with budget, and training. The "right time" is the proper timing of doing the work to meet near-term work requirements, near-term transition actions to ensure long-term success, and long-term work requirements.

KSC needed to align itself to the new "missions" it was facing, and had to take proactive steps to align its products, services, processes, structure, tools, and workforce. KSC's ever-changing environment and the need to position and align itself created the need for KSC to transform itself.

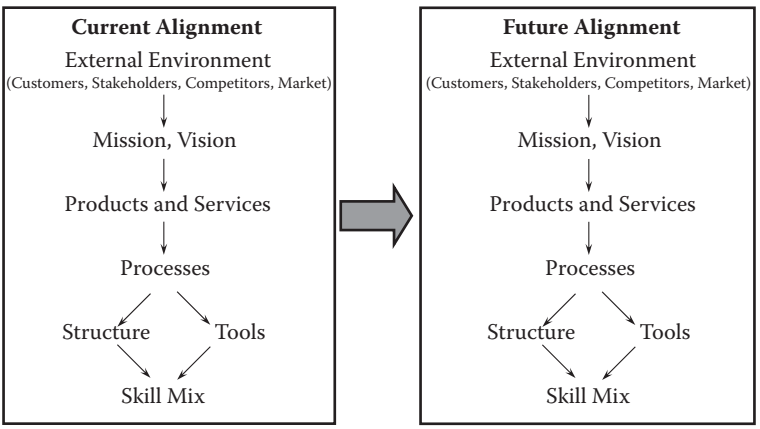

FIGURE 3.3 Aligning the organization.

CHAPTER CLOSURE

This chapter answered the first question, "Why do we need to transform?" Based on this understanding, we need to define what a transformation is so we can develop the approach to make the transformation successful. The next chapter defines what a transformation is.

EYE ON THE LITERATURE

These sources can be useful to help you further understand the need to transform your business:

- *Leading the Revolution* by Gary Hamel
- *Managing Corporate Lifecycles* by Ichak Adizes
- *Good to Great* by Jim Collins
- *Organizational Change and Redesign* by George Huber and William Glick

ORGANIZATIONAL SELF-APPLICATION TASKS

Here is a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for transformation.

- How relevant is our organization to our industry and customers?
- How responsive is our organization to our customers?
- How ready is our organization to be relevant and responsive to our customers?
- What is changing in our environment?
- What is the trigger event that is driving us to transform?
- Does our organization need to transform?
- What about our business model needs to change?

4 What Is a Transformation?

Lesson learned 2: A transformation is the purposeful, intentional, consistent change of an organization's business model over time.

A transformation requires many decisions and actions that must be consistent, purposeful, and intentional. Purposeful means having a specific outcome in mind. Intentional means by design. Consistent is having the purpose and intent drive all transformation actions. The purpose is to have performance excellence. Performance excellence is based on how well the organization's business model is positioned and aligned with the external market.

A business model describes an organization's business and how it provides value (Hamel, 2002). As shown in Figure 4.1, a transformation is a change in the business model to ensure that the organization is positioned and aligned (i.e., producing the right products the right way). The transformation changes the organization's misposition or misalignment to being correctly positioned and aligned to the market. The inherent challenge is that the organization must continue to adapt. Just because the organization delivers well today does not mean it will be able to deliver well in the future.

The organization must be able to deliver the right products and services the right way. During a transformation, the organization determines what is the right work completed the right way with the right capabilities (e.g., people, processes, tools) in order for the organization to bring value to its customers. As shown in Figure 4.2, the transformation is intended to make the organization relevant and responsive.

Kennedy Space Center (KSC) needed to transform from its 1995 business model of being an operational center primarily focused on Shuttle processing. As discussed in

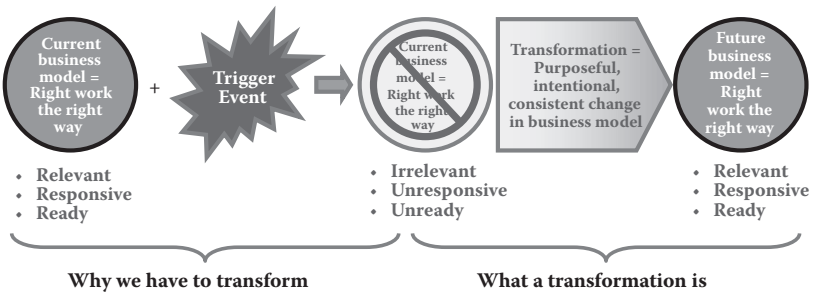

FIGURE 4.1 A transformation is the purposeful, intentional, consistent change of an organization's business model over time.

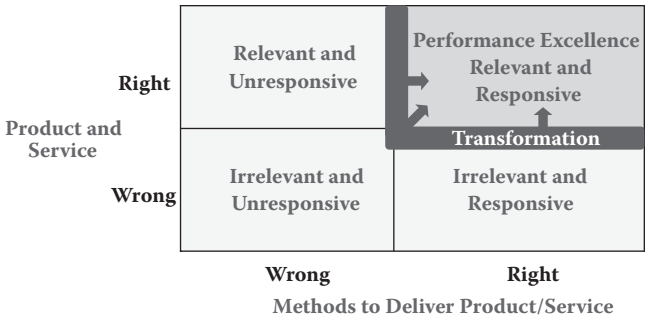

FIGURE 4.2 Transformations create new business models that create a more relevant, responsive, and ready organization.

Chapter 2, the trigger events that caused KSC's business model to become irrelevant and unresponsive included:

- With the change in NASA leadership to Dan Goldin, NASA began to implement a "better, faster, cheaper" philosophy.
- A NASA report called for the privatization of Shuttle operations and a reduced civil service role in the daily operations of the Shuttle processing activities.
- NASA conducted a zero-based review, which called for the significant reduction in the number of civil service employees at KSC.
- NASA created the Space Flight Operations Contract.
- The programs being conducted at KSC declined or phased down.

To respond to these trigger events, KSC choose to transform through purposeful, intentional, and consistent actions. KSC changed the product and services being offered by the civil service employees (e.g., transitioned out of Spacelab operations, changed the Shuttle operations, increased its role in the International Space Station and expendable launch vehicles) and the methods of delivering these products and services (e.g., new methods for management of Shuttle operations). To help change the business model further, KSC emphasized and focused on the development of new technologies. This was an attempt at both creating a new business model and aligning internal resources. In the next chapter, we shall explore these business model changes in more detail.

CHAPTER CLOSURE

This chapter answered the second question — "What is a transformation?" — in a very simple and explicit manner. This definition serves as the basis for moving forward. The next chapter describes the challenges an organization will face while transforming.

EYE ON THE LITERATURE

These sources can be useful to help you further understand the need to transform your business:

- *Leading the Revolution* by Gary Hamel
- *Managing Corporate Lifecycles* by Ichak Adizes
- *Good to Great* by Jim Collins
- *Organizational Change and Redesign* by George Huber and William Glick

ORGANIZATIONAL SELF-APPLICATION TASKS

Here is a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for transformation.

- How purposefully are we transforming?
- How intentionally are we transforming?
- How consistently are we transforming?

REFERENCE

Hamel, G., *Leading the Revolution*, Harvard Business School Press, Boston, MA, 2002.

5 What Challenges Does a Transformation Create?

Lesson learned 3: The organization will face five challenges when transforming.

A transformation is the re-creation of the organization. This transformation or re-creation creates five challenges for the organization and leadership team. Figure 5.1 highlights these five challenges. The "bottom-line" challenge is to hold the management team and employees accountable for the change.

In this chapter, we shall explore each of these five challenges. Responding to these five challenges requires a strategic response.

TRANSFORMATION CHALLENGE 1: DEVELOPING A NEW BUSINESS MODEL CONCEPT

The first challenge is to develop a new business model that will position and align the organization. The organization needs to define what the new right work/right way is. The new business model must position the organization's role (e.g., mission) and contributions (e.g., products and services) in the environment and industry. The new business model must also align the organization's internal elements (e.g., people, processes, tools, and culture) to deliver the needed products and services in a manner the customer desires (e.g., cost, quality, delivery speed). The work of Hamel (2002) provides a method and a set of questions to help define what a business model is.

As discussed in the previous chapter, Kennedy Space Center (KSC) had to change its business model from being Shuttle operations-centric. KSC focused on balancing its business model by providing additional operational knowledge to the International Space Station (ISS), the Launch Service Program (LSP), and new vehicle development. It further wanted to grow a business line for developing new spaceport and range technologies. KSC also changed its business model for managing the institutional "base operations." KSC wanted to emphasize the move to a more balanced business model with balanced roles in operations, development, and enabling/institutional functions. Table 5.1 summarizes KSC's major change in business model elements for three areas: operations, development, and enabling/institutional.

Once these business model changes are identified, a strategy to implement the change needs to be developed and implemented.

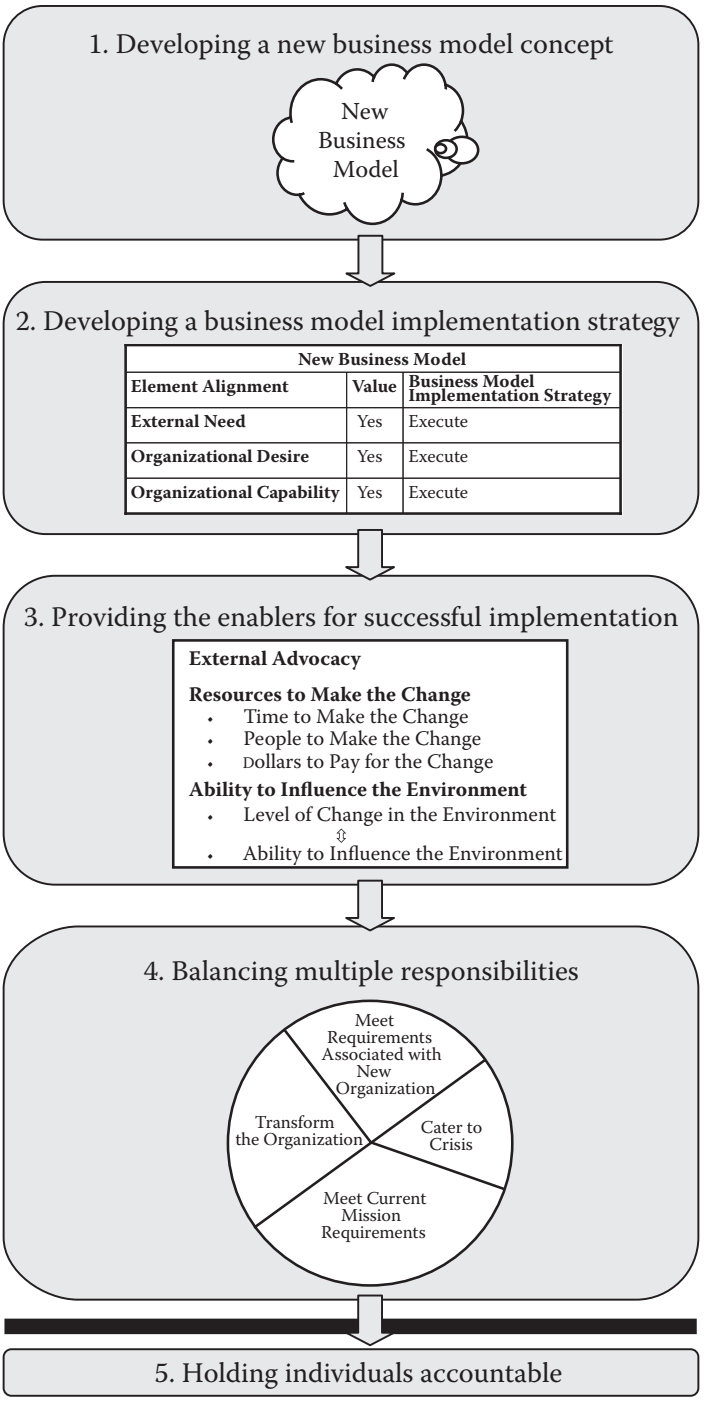

FIGURE 5.1 Transformation challenges.

TABLE 5.1
Summary of KSC Business Model Changes

Area	Item	Business Model Change
Ops	• Shuttle	• Create new methods
	• LSP	• Create new products, services, and methods
	• ISS MEIT	• Create new products, services, and methods
Development	• Shuttle upgrade	• Create new products, services, and methods
	• CLCS	• Create new products, services, and methods
	• Life science	• Create new products, services, and methods
	• ASTWG/ARTWG	• Create new products, services, and methods
Enabling institution	• JBOSC	• Create new methods
	• CCS master plan	• Create new products, services, and methods
	• Business system	• Create new methods

Notes: MEIT, Multi-Element Integrated Test; JBOSC, Joint Base Operations and Support Contract; CLCS, Checkout and Launch Control System; ASTWG/ARTWG, Advanced Spaceport Technologies Working Group/Advanced Range Technologies Working Group; CCS, Cape Canaveral Spaceport.

TRANSFORMATION CHALLENGE 2: DEVELOPING A BUSINESS MODEL IMPLEMENTATION STRATEGY

The second challenge is to develop the business model implementation strategy to make the new business model a reality. This implementation strategy needs to consider the soundness of the business model concept. The organization needs to define an implementation strategy based on how well the following three elements are aligned: (1) the external environment's desires, (2) the organization's desires, and (3) the organization's capability to operate the new business model. The implementation strategy needs to account for the external environment's desire for the proposed new business model. For example, if the external environment does not yet desire the new business model, the organization needs to create the need through marketing or advocacy building. The implementation strategy must also address how well the organization or senior management team desires the new business model. This is important, because lack of organizational desire will commit the new business model to failure. The management team will not support it. Finally, the implementation strategy must also account for the organization's capabilities (e.g., processes, tools, workforce) to deliver the new business model. If the organization does not have the capability, then it will not be able to deliver. The organization must create the capability. The organization needs to create a strategy that is aligned to the type of change that is being created. The business model implementation strategy must address any gaps in these three elements.

Table 5.2 summarizes the different scenarios that can emerge from the varying levels of external acceptance, internal acceptance, and internal capability. For each scenario, specific strategies need to be used based on the decision the management team makes to address the situation. The decision will have an impact on the organization's performance.

TABLE 5.2
Business Model Implementation: Situation, Decision, and Potential Impacts

Case	External Need	Internal Want	Internal Capability	Potential Decisions	Potential Impacts from the Decision
I	Yes	Yes	Yes	• Execute and sustain capability	• Sustained performance
II	Yes	Yes	No	• Build capability • Move on	• Keep market • Lose market
III	Yes	No	Yes	• Move on • Make intent	• Lost opportunity • New market
IV	Yes	No	No	• Ignore • Build intent and capability • Make intent	• Lost opportunity • Seize the market • New market
V	No	Yes	Yes	• Move on • Create the market	• Resources available for other efforts • Potential for new market • Potential for wasted investment
VI	No	Yes	No	• Change intent • Invest in the market	• Focus management's energy and resource on another business • Potential for new market • Potential for wasted investment
VII	No	No	Yes	• Change intent and market need • Abandon capability	• Potential for new market • Potential for wasted investment • Potential to miss an opportunity
VIII	No	No	No	• Focus on today's business • Explore for possibilities	• Performance in the short run • Potential for missing a market • Potential for new market • Potential for wasted investment

Each of KSC's business model changes had varying levels of change required. Each also had varying levels of external support, internal support, and internal capabilities. To make these changes, KSC designed and implemented strategies. In addition to these strategies, KSC had to ensure success of the business model changes. We shall further explore these different business model changes next, when we discuss the need to create the conditions for successful implementation.

TRANSFORMATION CHALLENGE 3: PROVIDING THE ENABLERS FOR SUCCESSFUL IMPLEMENTATION

The third challenge is to provide the enablers for successfully implementing the business model. This challenge focuses on ensuring that the organization's strategy can succeed. The organization needs to provide enablers such as external advocacy, resources (time, people, dollars), and influence on the environment. External advocacy is the external support of the organization's transformation. This support comes from important entities such as the board of directors, major customers, government stakeholders, etc. For example, KSC needed to gain external advocacy from NASA HQ, NASA program managers, other NASA centers, and the State of Florida. This external advocacy would help create the sense of urgency to provide the resources necessary to drive the transformation. Resources are the next enabler for successfully implementing the new business model. These resources are needed to invest in aligning the external desire, internal desire, and internal capabilities. Ability to influence the environment is needed to help create the external advocacy needed for the transformation and to create the market desire.

KSC worked on each of the enablers a bit differently, and with varying degrees of success. We review the major transformation efforts within three groups:

- Efforts to transform and enhance KSC's operational focus
- Efforts to transform and enhance KSC's development focus
- Efforts to transform and enhance KSC's base operations and organizational focus

These enablers were identified by understanding why KSC's strategies had different degrees of success. Table 5.3 summarizes how well KSC's operational efforts to change the business model had the enablers for successful implementation. For the most part, the operational strategies were successful and they had the enablers. Table 5.4 provides a summary of how well KSC, to change the business model to emphasize technology development, had the enablers for successful implementation. For the most part, the development strategies were not fully successful. In reviewing these instances, we can see that they lacked the necessary enablers for successful implementation. Table 5.5 provides a summary of how well KSC's institutional and management efforts to change the business model had the enablers for successful implementation. For the most part, the institutional and management strategies were successful and they had the enablers for successful implementation.

TRANSFORMATION CHALLENGE 4: BALANCING MULTIPLE RESPONSIBILITIES

The fourth challenge is to balance multiple responsibilities. An organization undergoing a transformation has increased its responsibilities from executing the current business model to creating and operating the future business model while still executing the current business model.

TABLE 5.3
Summary of KSC's Operational Business Model Changes

		SFOC Transformation	LSP Transformation	ISS MEIT
Required Business Model Changes	• Situation	• Move civil service from the day-to-day hands-on work and move contract management to JSC	• Consolidate NASA's ELV efforts to KSC	• Conduct a new role for integrated testing of ISS flight hardware
	• Business model concept changes	• Create new methods	• Create new products, services and methods	• Create new products, services and methods
Business model concept alignment	• External need	• Yes • Agency wanted to move in this direction	• Yes • Agency wanted to move in this direction	• Partial • Agency did not originally see the need for MEIT
	• Internal desire	• Partial • Willing to support NASA	• Yes • KSC wanted to make this happen	• Yes • KSC wanted to make this happen
	• Internal capability	• Partial • KSC needed to adapt processes and tools	• Partial • KSC had to augment capability from other centers	• Partial • KSC needed to build processes and tools
Enablers for Successful Implementation	• External advocacy	• Yes • Agency wanted to move in this direction	• Yes • NASA wanted to make this happen	• Partial • NASA eventually supported
	• Resources: dollars	• Yes • NASA provided resources to make it happen	• Yes • NASA provided resources to make it happen	• Yes • NASA provided resources to make it happen
	• Resources: human capital	• Yes • KSC had capabilities to make the change	• Yes • KSC, with support from other centers, had capabilities to make the change	• Yes • KSC had capabilities to make the change
	• Resources: time	• Yes • NASA provided the time to do	• Yes • NASA provided the time to do	• Yes • NASA provided the time to do
	• Control: changing environment	• Yes • NASA held firm on the need to change	• Yes • NASA held firm on the need to change	• Yes • NASA held firm on the need for MEIT to occur
	• Control: ability to control the environment	• Partial • KSC had ability to work with NASA to make it work	• Partial • KSC had ability to work with NASA to make it work	• Partial • KSC had ability to work with NASA to make it work
Summary of critical success factors	• Alignment	• Partial	• Partial	• Partial
	• Advocacy	• Yes	• Yes	• Partial
	• Resources	• Yes	• Yes	• Yes
	• Control	• Partial	• Partial	• Partial
Outcome		• SFOC transition successfully made	• LSP transition successfully made	• MEIT successfully completed

Note: SFOC, Space Flight Operations Contract; LSP, Launch Service Program; ELV, Expendable Launch Vehicle.

To evolve, the organization must make an investment in the future. The aim of this investment is to either start a new activity or change the way the business operates. To make this investment, the organization will need to gain new resources — sometimes by reallocating work or by stopping something. This investment in the future leads the organization to struggle with meeting its responsibilities for the current business while trying to invest in new activities for the future. We use the "ABC" model developed by Kurstedt (1993) to explain this challenge. Kurstedt's model states that an organization spends its resources (time, energy, dollars) doing three types of activities: administering the business, building the business, and catering to crises. For an organization undergoing a transformation, the challenge is to find the resources to "build the business" or invest in its future. These multiple responsibilities can overextend the organization's capabilities.

For KSC, this problem was further exacerbated because the amount of resources was diminishing. In essence, the resource pie was getting smaller while the work pie (to invest in the future) needed to remain the same. As a result of this transformation effort, KSC personnel had to meet diverse needs. The model shown in Figure 5.2 describes the activities KSC's resources were focused on. First, KSC had to continue to meet its mission to ensure the safe, reliable, and cost-effective launching of the Space Shuttle (administer the current business). As this occurred, KSC also had to transition the operational work to a contractor (build the business). Second, KSC had to transform the organization into a different KSC. KSC developed and communicated a strategic direction. KSC defined its future state as focusing on providing its capabilities and expertise anytime, anywhere to advance space exploration and commerce. KSC's core business was to focus on providing space systems processes, and testing and launch techniques, and developing associated technologies. KSC also successfully achieved ISO 9001 certification. These efforts consumed resources to lead, manage projects, and complete the work associated with the transformation. Third, KSC had to deliver on the "new mission" of being a development center (administer the new business while building the new business). KSC was completing new development work. KSC was using its unique operational knowledge to help space systems developers successfully design and implement new space systems. For example, KSC was playing a major role in developing a new checkout and launch control system for the Space Shuttle and a new generation of vehicles such as the X-34. Fourth, KSC had to respond to the normal crises associated with any organization. For example, an unplanned report or submission to an external agency is a crisis that requires time and resources. These four responsibilities can drive an organization to overload. Given the declining number of total KSC civil service employees, KSC had to focus these resources in the most effective manner.

TRANSFORMATION CHALLENGE 5: HOLDING INDIVIDUALS ACCOUNTABLE FOR THE CHANGE

The fifth challenge is to hold individuals accountable for the transformation. This challenge focuses on the organization's understanding, acceptance, commitment, and execution of the transformation.

TABLE 5.4
Summary of KSC's Development Business Model Changes

		ASTWG/ARTWG	Life Sciences	CLCS	Shuttle Upgrades
Required business model changes	• Situation	• Create a national partnership focused on defining advanced technologies for spaceports and ranges	• Conduct life sciences research aligned to NASA and ISS needs	• Develop new technologies and systems associated with the checkout and launch control used during testing, countdown, and launch	• Support design and development of technology to enhance the Shuttle's capabilities
	• Business model concept changes	• Create new products, services, and methods	• Create new products, services, and methods	• Create new products, services, and methods	• Create new products, services, and methods
Business model concept alignment	• External need	• No • NASA did not see the need for this work	• Yes • Agency wanted to move in this direction	• Partial • NASA supported the need when they approved the project but later pushed for cancellation	• Partial • NASA supported the need when they approved the project but later pushed for cancellation
	• Internal desire	• Partial • Willing to explore ideas to ensure KSC was relevant to NASA	• Partial • Willing to support NASA	• Partial • Willing to explore ideas to ensure KSC was relevant to NASA	• Partial • Willing to explore ideas to ensure KSC was relevant to NASA
	• Internal capability	• Partial • KSC needed to enhance its development capabilities	• Yes • KSC had the capability to execute	• Partial • KSC needed to enhance its development capabilities	• Partial • KSC needed to enhance its development capabilities
Enablers for successful implementation	• External advocacy	• No • KSC was building the external spaceport and DOD community	• Yes • Agency wanted KSC to do this work	• Partial • NASA supported the need when they approved the project but later pushed for cancellation	• Partial • NASA supported the need when they approved the project but later pushed for cancellation
	• Resources: dollars	• Partial • Limited investment funds to make happen, very few program dollars to support	• Yes • NASA provided resources to make it happen	• Partial • In the beginning funds to make happen	• Partial • In the beginning funds to make happen
	• Resources: human capital	• Partial • Few folks who believed in the concept	• Yes • KSC had the capabilities to make the change	• Partial • Management team to build organization	• Partial • Management team to build organization

	• Resources: time	• No • Time ran out when RB left, CAIB, and Mr. Griffin	• Yes • NASA provided the time to do	• No • Time ran out, the project was cancelled	• No • Time ran out, the project was cancelled
	• Control: changing environment	• No • Very little interest for spaceport and range technology	• Yes • NASA held firm on the need to have KSC do this work until the VSE and need for 10 healthy centers	• Partial • The need and support for the project changed over time	• Partial • The need and support for the project changed over time
	• Control: ability to influence the environment	• No • Very little ability to get NASA to provide dollar support to the efforts	• Partial • KSC had ability to work with NASA to make it work	• Partial • Very little ability to get NASA to support the project in the long term	• Partial • Very little ability to get NASA to support the project in the long term
Summary of critical success factors	• Alignment	• No	• Yes	• Partial	• Partial
	• Advocacy	• No	• Yes	• Partial	• Partial
	• Resources	• Partial	• Yes	• Partial	• Partial
	• Control	• No	• Yes	• Partial	• Partial
Outcome		• The importance of ground operations infrastructure being recognized in VSE	• Successful in the short term in that KSC received funding and made contributions	• The project was assigned to KSC • The project was later cancelled	• The project was assigned to KSC • The project was later cancelled

Note: RB, Roy Bridges; CAIB, Columbia Accident Investigation Team; VSE, Vision for Space Exploration.

TABLE 5.5
Summary of KSC's Enabling Business Model Changes

		JBOSC	CCS Master Plan	ISO/Business
Required business model changes	• Situation	• Establish a joint contract with the Air Force for the institutional or base operation services of KSC and the Cape Canaveral Air Force Station	• Develop a long-term master plan for the integrated Cape Canaveral Spaceport (KSC and Cape Canaveral Air Force Station) with industry and government involvement	• Enhance the KSC strategic and business management systems aligned to ISO 9001 and Baldrige criteria
	• Business model concept changes	• Create new methods	• Create new products, services, and methods	• Create new methods
Business model concept alignment	• External need	• Yes • Agency wanted to move in this direction	• Yes • The Cape Canaveral community wanted to move in this direction	• Yes • Agency wanted to move in this direction
	• Internal desire	• Partial • Willing to support the drive by the CD	• Partial • Willing to support the drive by the CD	• Partial • Willing to support the drive by the CD
	• Internal capability	• Partial • KSC needed to adapt processes and tools	• Partial • KSC needed to adapt processes and tools	• Partial • KSC needed to adapt processes and tools
Enablers for Successful Implementation	• External advocacy	• Yes • AF and the Agency wanted to move in this direction to save money	• Yes • AF and the Agency wanted to move in this direction to save money	• Yes • Agency wanted to move in this direction to save money
	• Resources: dollars	• Yes • NASA provided resources to make it happen	• Yes • NASA and the Cape Canaveral community provided resources to make it happen	• Yes • NASA provided resources to make it happen
	• Resources: human capital	• Yes • KSC had capabilities to make the change	• Yes • KSC had capabilities to make the change	• Yes • KSC had capabilities to make the change
	• Resources: time	• Yes • NASA provided the time to do	• Yes • NASA provided the time to do	• Yes • NASA provided the time to do
	• Control: changing environment	• Yes • NASA held firm on the need to change	• Yes • NASA held firm on the need to change	• Yes • NASA held firm on the need to change
	• Control: ability to influence the environment	• Partial • KSC had the ability to work with NASA to make it work	• Partial • KSC had the ability to work with NASA to make it work	• Partial • KSC had the ability to work with NASA to make it work
Summary of critical success factors	• Alignment	• Partial	• Partial	• Yes
	• Advocacy	• Yes	• Yes	• Yes
	• Resources	• Yes	• Yes	• Yes
	• Control	• Partial	• Partial	• Yes
Outcome		• JBOSC was implemented • JBOSC received recognition from external entities	• Master plan was established	• KSC received ISO 9001 certification

Note: CD, Center Director.

FIGURE 5.2 Balancing multiple responsibilities (adapted from Kurstedt, 1993).

Many discussions can be conducted and many decisions can be made, but the required actions and results must occur. It is typically easier to hold individuals accountable for the current mission or "day job" than for improvement efforts. Individuals also need to be held accountable for the improvement efforts. Holding individuals accountable can occur when the individuals understand, accept, and commit to execute the transformation efforts.

KSC struggled with gaining commitment to its strategy. During the period 1997–1999, there appeared to be agreement on the need for the change. However, at times this agreement fluctuated on how to reach the vision. Part of this was attributable to the management structure of directors having dual reporting responsibilities — one to the program and one to the center director. The other part was the lack of a shared understanding and commitment to the "concept of operations" — how the organization would operate under the new vision. To drive accountability, KSC implemented strategic management system processes and tools. Chapter 9 provides further discussion on how KSC attempted to drive this concept of accountability.

CHAPTER CLOSURE

This chapter answered the third question —"What challenges does a transformation create?" The next chapter defines how an organization can respond to these challenges.

EYE ON THE LITERATURE

These sources can be useful to help the reader further understand the challenges of organizational transformation:

- *Leading Change* by John Kotter
- *The Heart of Change* by John Kotter and Dan Cohen

- *Organizational Change and Redesign* by George Huber and William Glick
- *Navigating Change* by Donald Hambrick, David Nadler, and Michael Tushman
- *The Human Side of Change* by Timothy Galpin
- *The Change Masters* by Rosabeth Moss Kanter
- *The Dance of Change* by Peter Senge, Art Kleiner, Charlotte Roberts, Richard Ross, George Roth, and Bryan Smith
- *Breaking the Code of Change* by Michael Beer and Nitin Nohria
- *By What Method* by D. Scott Sink and William Morris with Cindy Johnston

ORGANIZATIONAL SELF-APPLICATION TASKS

Here is a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for transformation.

- How well are we defining a new business model concept?
- How well are we evaluating the new business model concept?
- How well are we defining our business model implementation strategy?
- How well does the business model implementation strategy account for external desires, organizational desires, and organizational capability?
- How well are we providing the enablers for successful implementation?
- How well are we balancing our multiple responsibilities?
- How well are we holding individuals accountable for the transformation?

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Kurstedt, H. A., *Management Systems Theory, Application, and Design*, Author, Blacksburg, VA, 1993.

6 How Can You Respond to the Transformation and Associated Challenges?

Lesson learned 4: A strategic response focuses on implementing a strategic transformation path while navigating four phases of a transformation.

A strategic response is needed to respond to the trigger event and to purposefully, intentionally, and consistently transform the organization's business model. Figure 6.1 is a graphical representation of the strategic response. The strategic response helps the management team navigate the four phases of transformation.

NAVIGATE FOUR PHASES OF THE TRANSFORMATION

From our earlier review of the Kennedy Space Center (KSC) transformation, we can define a life-cycle perspective to a transformation. This transformation life cycle has phases much like an engineering project. The management implication from the transformation life cycle is that the organization must understand which phase it is in, and manage the transformation activities accordingly. These phases are (see the four phases at the top of Figure 6.1):

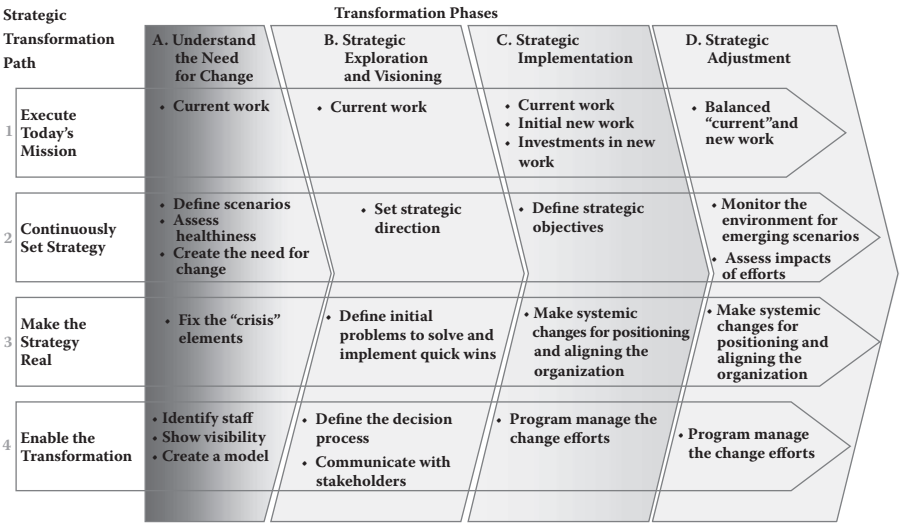


FIGURE 6.1 Strategic response.

- *Phase 1: Understand the need for change.* During this phase, the organization needs to understand the state of the environment and where it stands within that environment. The management team defines the environment, the trigger event, and the unacceptable state of the current business model. In this phase, the case for change is made. During this phase, the organization needs to make the explicit choice to take a strategic approach and set strategy for the transformation.
- *Phase 2: Strategic exploration and visioning.* During this phase, the organization goes through a series of strategic analyses and conversations to better understand where the organization is, where the organization wants to be (i.e., vision), and how to achieve the vision or move from the current to desired state of the organization. This phase is where the initial strategic planning of the transformation takes place. The management team holds conversations to explore its environment and business. In this phase, the organization develops and refines alternative future business models and strategies to move forward. This strategic plan becomes the baseline strategic plan, which is continuously readjusted. "Triage actions" are also taken in this phase to "stop the bleeding" in the organization, to respond to the initial trigger events, and lay the foundation for more systematic and fundamental change.
- *Phase 3: Strategic implementation*. During this phase, the organization makes the vision a reality. The organization takes actions here to position and align itself with the strategic plan. To implement the strategic plan, the organization takes on strategic initiatives at the organizational level, common actions across the organization, or efforts within a specific business unit. In this phase, the strategy includes the operation of the current business model and the new business model implementation strategy.
- *Phase 4: Strategic adjustment*. During this phase, the organization continues to implement the strategy while monitoring the external environment and internal performance. The strategy is also adjusted.

Within these phases, specific actions need to be taken. Based on these responses, specific conversations and activities are needed to help you navigate the transformation. These conversations are unique to each phase and focus area of the transformation. The activities to implement the four areas of emphasis across the four phases of the transformation help you provide a strategic response to the challenges of an organizational transformation.

Throughout these phases, the organization must enable the transformation (i.e., change management occurs throughout each phase) and make strategic decisions and carry out initiatives to respond to real-time challenges. The organization must take action to ensure that they are successful. Obviously, there is overlap in the phases.

IMPLEMENT A STRATEGIC TRANSFORMATION PATH

A strategic response involves implementing a strategic transformation path containing four focus areas (see the four arrows starting on the left-hand side of Figure 6.1).

- *Execute Today's Mission* focuses on delivering the mission and meeting customer requirements. Current operations cannot be dropped during the transformation. This current business provides the foundation for moving forward.
- *Continuously Set Strategy* focuses on developing and evaluating the organization's overall strategy (e.g., vision, business model, change path to the future). Setting strategy cannot be viewed as a once-a-year activity.
- *Make the Strategy Real* focuses on implementing specific efforts to make the strategy a reality. The current business model and the new business model implementation strategies must be implemented.
- *Enable the Transformation* focuses on supporting the organization in understanding, accepting, committing to, and executing the transformation. The leader needs to focus on guiding behavior, managing the portfolio of improvement initiatives, learning, and providing a change infrastructure.

In looking at the KSC transformation, we will see that KSC implemented a strategic transformation path.

STRATEGIC TRANSFORMATION PATH FOCUS AREA 1: EXECUTE TODAY'S MISSION

The first focus area of the strategic transformation path is to execute the current mission. The organization needs to continue fulfilling its commitments to its customers. The basis for moving forward is the credibility and trust the organization has with its existing customers. If the organization fails to meet its current commitment, there is no basis for new customers to trust its capability. Current customers are the source of the revenue to invest in the future. KSC continued to meet its responsibilities as it evolved to new roles. "Today's mission" changes over time. The varying nature of a transformation may change the core mission of the organization.

Throughout its transformation, KSC focused on accomplishing its mission. The core mission did not change over time, but what the mission was applied to and how the mission was executed did change. KSC executed its longstanding mission of processing the Shuttle, International Space Station (ISS), and NASA payloads. Through the strategic management process within NASA and KSC, KSC further expanded the application of its mission to include the Launch Services Program (LSP), spaceport and range technology development, and exploration support. Table 6.1 summarizes the major efforts that KSC implemented to meet the core mission.

STRATEGIC TRANSFORMATION PATH FOCUS AREA 2: CONTINUOUSLY SET STRATEGY

The second focus area of the transformation path is to continuously set strategy. Throughout the transformation, the organization must continue to evaluate the environment and internal performance to set the strategy. One of the first steps in achieving successful change and transformation is to create a vision of the future (Kotter, 1996; Kanter et al., 1992). Strategic planning has been offered as a method to drive

TABLE 6.1
Summary of Key KSC Mission Accomplishments

Element	1995–1997	1998–2000	2001–2002
Shuttle	• 1995: 7 launches • 1996: 7 launches • 1997: 8 launche • Transition to SFOC	• 1998: 5 launches including the John Glenn Flight • 1999: 3 launches • 2000: 5 launches	• 2001: 6 launches • 2002: 5 launches
ISS	• 1st of incremental design reviews • Shuttle-Mir phase I • Shuttle docked with Mir • Fabrication of Node 1 and 2 and U.S. lab module • Shuttle-Mir phase • Shuttle-Mir phase I • Node items to KSC • Elements delivered to KSC • Z1 Truss • Pressurized Mating Adaptor 3 • Control Moment Gyros • Node 1 (Unity)	• Shuttle-Mir phase I completed • Node I checkout • Major assembly Flights • Unity • Z1 Truss • P6 Truss • S1 Truss • Logistics support • Elements delivered to KSC • Leonardo Multi-Purpose Logistics Module • Raffaello Multi-Purpose Logistic Module • Quest Joint Airlock • US Laboratory Destiny • Space Station Remote Manipulator System (SSRMS) • Truss/Photovoltaic Module Solar Arrays • Integrated testing • Multi-Element Integrated Test (MEIT) I completed • Began MEIT-2	• Major assembly Flights • Destiny Lab • Robotic Arm • Joint AirLock • S0 Truss • Mobile Transporter • Mobile Base System • P1 Truss • P6 Solar Arrays • Logistics support Elements delivered to KSC • Donatello Multi-Purpose Logistics Module • Integrated testing • Multi-Element Integrated • Test (MEIT) 2 completed
ELV	• 1995: 4 launches • 1996: 7 launches • 1997: 5 launches	• 1998: 7 launches • 1999: 6 launches • 2000: 6 launches	• 2001: 6 launches • 2002: 6 launches
Development (spaceport and range technologies)	• USMP-4 (The last of the U.S. micro-gravity with Science and samples that will help direct investigators for the era of the ISS) • Neurolab (Designed to develop innovative approaches in neuroscience using the space environment) • Alpha Magnetic Spectrometer (AMS-1) An experiment to search in space for dark matter, missing matter, and antimatter)	• Construction of Life Sciences Research Facility • Cryogenic testbed established • ASTWG established • ARWTG established • The Florida legislature passed a budget that included $10 million for a space research laboratory at KSC • Latest new addition, the Vapor Containment Facility which is located next to the Space Station Processing Facility • The Checkout and Launch Control System at the Hypergolic Maintenance Facility was declared operational in a ribbon cutting ceremony • Chandra X ray telescope (Designed to review X-rays from high-energy regions of the Universe)	• Presidential Directed Commission of the "Future of the US Aerospace Industry " calls for the federal gov't to assume the responsibility for sustaining, modernizing, and providing critical technologies—space launch infrastructure • A NASA HQ cost/ management assessment team visits KSC to review the Checkout Launch and Control System (CLCS) efforts

organizational change. The strategy must be adapted over time to reflect changes in the environment. Chapter 9 will provide a more detailed discussion of the strategic planning function.

As previously stated, KSC chose to take a strategic management approach to the transformation. A key element was the use of a continuous series of strategic conversations (e.g., strategic planning offsites). Table 6.2 provides a summary of the annual strategic planning offsites held by KSC senior management. Each strategic offsite had a major theme.

Figure 6.2 provides a graphical representation of the actual products that KSC developed from these offsites. As shown, these products tell the story of KSC's conversations and the evolution of its strategy.

These conversation products formed the basis for many of the actions and results that made possible the change in KSC from 1995 to 2002.

TABLE 6.2
Summary of KSC Strategic Offsites

Strategic Offsite	Strategic Offsite Date	Theme	Products	Transformation Phase
1	Fall 1996	• Understanding strategic context	• Initial need to change and strategic issues for new center director address	
2 and 3	March 25, 1997 and Spring 1997	• Need for change and vision	• Mr. Bridges' first offsite with this team • Senior management teams established to define the "from-to" view of KSC	• Understand the need for change • Strategic exploration and visioning
4	Sept. 8–10, 1998	• Make it so!	• Spaceport technologies vision	• Strategic exploration and visioning
5	Sept. 21–23, 1999	• Teamwork and reorganization		• Strategic implementation and strategic adjustment
6	Sept. 26–27, 2000	• Deploying the vision	• Scenario Planning — Change Path	• Strategic implementation and strategic adjustment
7	Sept. 11–13, 2001	• Planning Our Future	• Strategic resources review • Metrics tied to roadmap	• Strategic implementation and strategic adjustment
8	Sept. 18–20, 2002	• Focusing Our Path	• Alignment to new NASA direction and administration	• Strategic implementation and strategic adjustment

Note: Even though specific dates are listed, significant strategic conversations took place before, after, and in between the offsites.

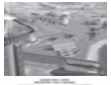
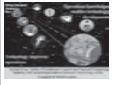
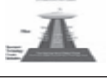
	1995	1996	1997	1998	1999	2000	2001	2002
Retreats/ Conversations								
Vision/Mission								
Goals								
Leadership Philosophy								
Transformation Path								
Guiding Principles								
Measures								
Roadmaps								
Product/ Services								

FIGURE 6.2 Summary of Messages from KSC offsites.

STRATEGIC TRANSFORMATION PATH FOCUS AREA 3: MAKE THE STRATEGY REAL

The third focus area of the transformation path is to make the strategy real. Strategy is more than the physical document or plan. Strategy is made real by the decisions and actions an organization takes to invest time, energy, and resources in moving the organization to its vision as defined in the strategic plan. KSC made the strategy real by taking a series of actions to position and align the organization.

KSC did more than just discuss its strategy. KSC made its strategy real. Figure 6.3 provides a high-level summary of how KSC's conversations led to specific decisions and actions. What this figure highlights is the connection between fundamental strategic questions/conversations and subsequent actions. One can argue about the usefulness of these actions, but the real point is to highlight the need to have the right strategy and to ensure that the resulting efforts are aligned accordingly. In addition to the changes in its operational mission, KSC made the strategy real by:

- Improving the mission
- Improving the organization and transforming the management process
- Forming partnerships

Make the Strategy Real: Improve the Mission (Operation and Development)

KSC made the strategy real by improving the delivery of the core mission. Table 6.3 highlights the efforts that KSC focused on to improve its core business. These efforts focused on supporting NASA's efforts within the core business of the operational role and the emerging role related to technology development.

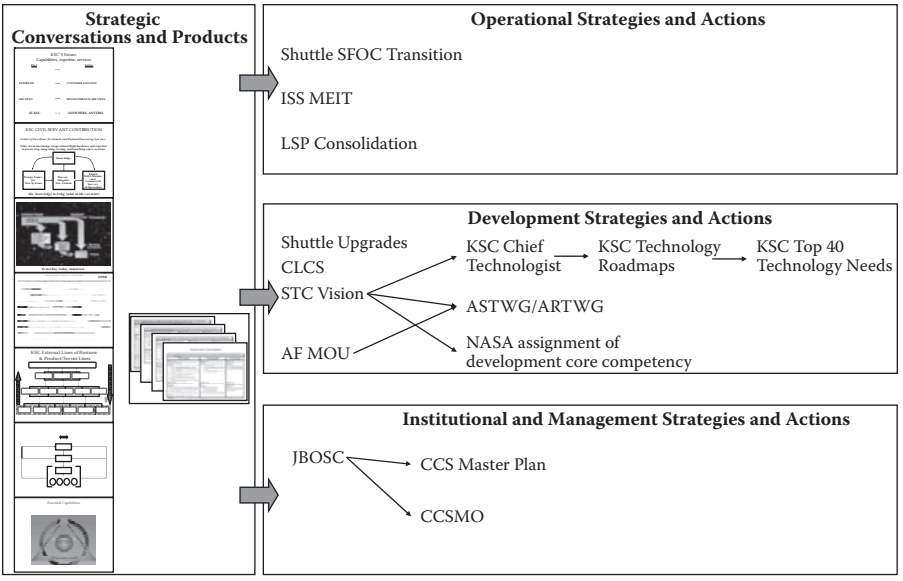


FIGURE 6.3 Connecting KSC's conversations' strategic products to actions.

TABLE 6.3
Initiatives Implemented by KSC to Improve Its Core Business

Element	1995–1997	1998–2000	2001–2002
NASA	• Established strategic plan with five enterprises • Completed zero-based review • Completed report on Space Shuttle program options • Adopted ISO 9000 as standard for quality management system • "Centers for Excellence" established for each center • Strategic Management Handbook published	• Consolidated Contract for Space Operations established • All sites ISO 9001 registered • Interagency study on the "Future Management and Use of U.S. Launch Bases and Ranges" • Centers announce intent to pursue VPP Star certification for safety	• O'Keefe named new NASA administrator • Education and public outreach focus
Shuttle initiative	• Initiated space flight operations contract for Shuttle operations • Began to have civil service • Safety and reliability improvements • Shuttle Fleet and Facility upgrades • Cost reduction push	• Shuttle upgrades • Continued consolidation of Shuttle operations contracts • Space Shuttle safety upgrade program to fly Shuttle through 2012	• Space Shuttle Safety Upgrade • Space Supportability Program (fly through 2020) • Service Life Extension Program (SLEP) • RAND study on Shuttle operations options • Preliminary Space Shuttle competitive sourcing plan
LSP Initiative	• Two failures in ELV world (NASA Pegasus and Air Force Delta missions)	• NASA Launch Services (NLS) and contracts awarded to Boeing and Lockheed Martin	
ISS Initiative	• Finalized design and developmental contract and core management team philosophy • Thirty independent assessments • NASA and Russian Space Agency reach understanding to define mutual roles and responsibilities for ISS • Hit ISS budget targets • Agreements with Russia, Europe, Japan, Canada, Brazil	• Address Russian government funding shortfalls • Intergovernmental agreement for the ISS (NASA, Canadian Space Agency, European Space Agency, Russian Space Agency, and Japan) • Study to assess domestic alternatives for resupply and contingencies	• Focus on ISS research
Exploration initiative		• Decadal Planning Team–NASA Exploration Team • Human Exploration and Development of Space Technology Commercialization initiative • NASA Exploration team establishes direction for humans beyond low earth orbit • Cancellation of Mars Surveyor 2001 Lander	• Human Exploration and Development of Space Commercialization Initiative frozen and funds moved to cover ISS budget issues • Technology for Human and Robotic Exploration of Space (THREADS)

TABLE 6.3 (CONTINUED)
Initiatives Implemented by KSC to Improve Its Core Business

Element	1995–1997	1998–2000	2001–2002
New vehicle initiative	• National Space Transportation Policy of 1994 • Air Force EELV Program • Initiated RLV technology development and demonstration program (DC-X, X-33, X-34) • Air Force transferred DC-X to NASA • Lockheed Martin to build X-33 • X-33 tests • X-34 tests	• X-33 CDR • X-34 test • Advanced Space Transportation Program	• Stop X-33 and X-34 • Start second-generation RLV program • Space Launch Initiative (SLI) • Redesigned crew return vehicle • Integrated Space Transportation Plan

Make the Strategy Real: Improve the Organization and Transform the Management Process

KSC made the strategy real by improving the organization and transforming the management process. KSC improved the organization by enhancing its workforce, structure, and management process. KSC evolved the management process by implementing a business management system, using the ISO 9001 and Baldrige criteria as frameworks, as well as using a strategic management process. As shown in Table 6.4, these initiatives focused on a set of organizational and management processes.

TABLE 6.4
Summary of Changes to the Organization and Management Process

Element	1995–1997	1998–2000	20001–2002
Customer analysis	• Senior managers call key customers	• Establish capability with Business Innovation Group for customer analysis	• Establish customer contact
Human resources	• Implement employee transition assistance programs	• Understand core competencies • Establish competency management system • Reorganization of KSC	• Establish fellowships for advanced studies
Process management	• Document processes	• Document processes • Consolidate processes • Gain ISO 9001 certification	• Organizational process maps
Leadership		• Establish Leadership Excellence Achievement Program (LEAP) to train supervisors	
Business and financial systems	• Establish Business World	• Establish Goal-Performance-Evaluation Program (GPES)	• Implement Integrated Financial Management

Make the Strategy Real: Forming Partnerships

KSC made the strategy real by forming partnerships with other organizations. The management team realized that KSC could not execute its strategy by itself. As shown in Table 6.5, KSC partnered with the U.S. Air Force, Cape Canaveral/KSC spaceport community, the State of Florida, and the education community (e.g., community colleges and universities). These partnerships were driven by the strategy of expanding its mission focus beyond current programs with the primary focus on operations. The partnership it formed with the U.S. Air Force resulted in the Joint Base Operations and Support Contract for base operations (National Academy of Public Administration, 2002) and the desire to pursue advanced spaceport and range technologies (e.g., Office of Science and Technology Policy and National Security Council, 2000; NASA and U.S. Air Force, 2003, 2004). The partnership with the space community led to the first joint master plan for Cape Canaveral and KSC. The partnership with the state and the educational system led to the establishment of closer ties to researchers and research facilities. The partnership led to the establishment of the Space Experiment Research and Processing Laboratory and Florida Space Research Institute.

STRATEGIC TRANSFORMATION PATH FOCUS AREA 4: ENABLE THE TRANSFORMATION

The fourth focus area of the transformation path is to enable the transformation. To make the transformation successful, KSC enabled the transformation by:

- Guiding behavior
- Managing the portfolio of improvement initiatives
- Learning
- Providing a change infrastructure

The organization and leadership team needs to enable the organization to successfully balance executing today's mission, continuously setting strategy, and making the strategy real. Specific actions to enable the transformation are shown in Figure 6.4 and described below. These actions are gleaned from understanding best practices in the literature and reflecting on KSC's approaches.

Organizations are increasingly undergoing large-scale performance improvement and change efforts, such as total quality management efforts, reengineering, and downsizing. An organizational transformation is redefining an organization's business (e.g., mission and products/services) and the manner in which the business is operated (e.g., processes, technology, people, and culture) (Davidson, 1993). A fundamental innovation and change problem is to determine the best way to ensure successful implementation of a performance improvement approach by overcoming barriers to change (Grover, 1999). Other authors have identified critical success factors necessary for successful large-scale changes (Applebaum et al., 1987; Cameron et al., 1993; Kanter et al., 1992; Marshall and Yorks, 1994; National Academy of Public Administration, 1996). Their findings highlight the need for an organization to understand clearly (1)

TABLE 6.5
Major Partnership Efforts

Element	1995–1997	1998–2000	2001–2002
Air Force	• Establish Air Force and NASA Partnership Council to understand infrastructure and common use	• Establish Cape Canaveral Spaceport Steering Team to enable unified actions to provide safe, world-class launch processing, payload processing, launch, support services, test operations, and technology development services that meet or exceed customers' expectations • Conduct joint assessment of the customer satisfaction issues across KSC and Cape Canaveral Air Force Station ("Innovative Strategies: Assessing and Achieving Customer Satisfaction at the Florida Launch Site" by J.D. Power and Associates)	
Spaceport — Comprehensive Master Plan for Cape Canaveral Spaceport		• Master planning team formed within NASA and expanded to include Air Force, Navy, Florida Space Authority • Federal Spaceport Master Plan concept agreed to	• Security issues under review • Comprehensive Master Plan for Cape Canaveral Spaceport released
State legislature		• January 2000 Space Summit at KSC with ideas to pursue identified • Memorandum of understanding established for education activities • Memorandum of understanding established with Spaceport Florida Authority to explore the concept of Space Experiment Research and Processing Laboratory (SERPL)	• SERPL groundbreaking and funding
Education		• Florida Space Research Institute (FSRI) established • Memorandum of understanding established with KSC, State of Florida, and FSRI on the Advanced Learning Network concept	

- Guiding behavior
  - Drive accountability
  - Gain involvement and commitment
  - Make decisions (raising, framing, and deciding the tough issues)
  - Build a unified team
  - Communicate continuously
- Managing the portfolio of improvement initiatives
  - Put the big picture together of the why, what, and how of the transportation
  - Connect the dots among the different improvement initiatives
  - Reinforce the strategic message in all that the organization does
- Learning
  - Improve understanding about the environment, organization, and change
  - Gain knowledge from self and others
  - Listen to an honest broker
- Providing a change infrastructure

FIGURE 6.4 Specific actions associated with enabling the transformation.

the forces or drivers of change, and (2) the design actions that produce positive results and minimize negative ones. An integrated change approach can help ensure that positive results are achieved. Sink and Morris (1995) offered nine integrated "fronts" for successful change to ensure positive results are achieved.

Enable the Transformation: Guiding Behavior

Table 6.6 summarizes how KSC enabled the transformation by guiding behavior. KSC guided behavior with four primary methods. First, KSC established and reinforced a set of core values. Second, KSC communicated the strategic direction and core values in all-hands meetings. These all-hands meetings provided an opportunity for the KSC center director and other managers to share the reason for change, what the strategic direction was, and the progress made. Third, KSC communicated strategic issues via CD-comms. CD-comms were one- to two-page letters from the KSC center director

TABLE 6.6
Enabling the Transformation: Guiding Behavior

Element	1995–1997	1998–2000	2001–2002
Guiding behavior	• Establish process for rollouts • Establish "CD-comms" • Establish core values • Establish quarterly safety and health review • Establish new awards (e.g., Gold Dollar and Silver Dollar awards)	• Implement DuPont Safety Training • Establish Safety and Health Day • Pursue VPP	• Achieve VPP certification

TABLE 6.7
Summary of CD-Comms

	1996	1997	1998	1999	2000	2001	2002
# CD-comms	0	15	13	24	19	11	15

to the KSC community. Table 6.7 shows the number of CD-comms communicated by year. Fourth, KSC established a new set of awards. These awards were intended to reward and reinforce behavior consistent with the strategic direction. These awards include the Gold Dollar Award, Silver Dollar Award, and strategic planning awards.

Enable the Transformation: Managing the Improvement Portfolio

KSC enabled the transformation by managing the set of improvement efforts or initiatives to ensure that systematic changes occurred. Systematic change actions align customers, products/services, processes/tools, structure, and skill mix. Systematic change involves a set of processes and tools to improve performance (Sink and Morris, 1995). Given the different types of change needed (Davidson, 1993), the organization must match the improvement initiatives (e.g., continuous improvement or reengineering) with the need (Gadd and Oakland, 1996; Lawler et al., 1998). Systematic change actions help the organization understand existing processes, define requirements for new processes, and evaluate the existing processes against the requirements (Brynjolfsson et al., 1997).

To ensure that the organization moves toward the future and the desired vision of where it wants to be, the organization needs to work the right gaps. The organization must focus on the specific, meaningful gaps in performance. Central pieces are needed to ensure that this systematic gap closure process is worked. First is the use of performance measures to identify the gap and determine when the gap has been closed. Second is the use of a systematic performance improvement methodology (e.g., quality management, reengineering, continuous improvement programs, Six Sigma).

Table 6.8 summarizes how KSC enabled the transformation by managing its portfolio of improvement efforts. KSC managed these improvement efforts through

TABLE 6.8
Enabling the Transformation: Managing the Portfolio of Improvement Efforts

Element	1995–1997	1998–2000	2001–2002
• Manage portfolio of improvement efforts	• Publish KSC Implementation Plan	• Publish KSC Implementation Plan	• Publish KSC Implementation Plan • Implement Top 40 Technology Projects

the strategic management process. Chapter 9 focuses on describing this process in detail. The intent of managing the improvement portfolio is to make sure that the organization is focusing on improving the right things.

Enable the Transformation: Learning

KSC enabled its transformation through learning. Learning is the creation, sharing, and applying of knowledge (Argyris and Schon, 1978; Huber, 1991). Learning provides the real-time knowledge needed by the organization to adjust to the changing environment. Learning includes the activities to support the organization in developing leadership (Kotter, 1996), learning from other organizations, learning from the organization's own experience, continuously improving the transformation approach, and educating and training the workforce in successful transformations (Sink and Morris, 1995). Mukherjee et al. (1998) and Hatch and Mowery (1998) found that learning supports change in the manufacturing environment.

KSC enabled the transformation by providing a support infrastructure for building knowledge concerning change, as well as developing leadership skills. Table 6.9 highlights these significant initiatives. KSC conducted a series of self-assessments to better understand its alignment and performance. These assessments helped KSC identify its strengths and weaknesses. KSC also invited external views on strategy and organizational change before or during the strategic offsites. These were usually presented by leaders in industry. KSC also made efforts to develop leadership and change management skills. These efforts were designed to give leaders throughout KSC the skills and tools to help move KSC forward.

Enable the Transformation: Providing a Change Infrastructure

KSC enabled the transformation by establishing and providing a change infrastructure. One issue facing the organization was how to provide the resources to take the actions needed for transforming. Sink and Morris (1995) highlighted the need for establishing a change infrastructure. KSC implemented four types of infrastructures to provide internal change resources:

- *Business Innovation Group* (BIG). This group was responsible for developing the overall business management system and helping lead the effort to become ISO 9001–certified.
- *Change Leader's Network*. This group was trained in the Covey approach for providing help to managers in leading change efforts in organizations.
- *Informal Focus Groups*. These groups were tasked to address specific challenges facing KSC.
- *Strategic planning manager.* This position was responsible for supporting the leadership team in running the strategic management process.

KSC used formal and ad hoc teams systematically to achieve improvement results. The executive team's desire to institute real change led to establishing the BIG as

TABLE 6.9
Enabling the Transformation: Learning

Element	1995–1997	1998–2000	2001–2002
Learning: self-assessment	• Initial focus groups and interviews • Loyalty Study by Right Management Associates identified key concerns over KSC's strategic uncertainty, ongoing career confidence, communication issues, workplace stress, KSC's future mission, involvement and teamwork, organization change • President's Quality Award application and feedback process provided insight into management system practices • Senior managers talking with customers • Senior managers developing views of expertise • Right Management Consulting study to baseline organization before rollout of strategic implementation plan • Center director directs KSC to review supervisory training practices, leads to the development of LEAP	• Action research in support of offsite • Data collection as part of the LEAP training sessions • KSC civil service employee survey	• Economic impact of NASA on Central Florida
Learning: external views	• Various leaders from external organizations shared insights as part of the annual strategic retreat	• Various leaders from external organizations shared insights as part of the annual strategic retreat	
Learning: building leadership and change management skills		• LEAP developed • Covey-based training on change management	

LEAP stands for Leadership Excellence Achievement Program.

KSC's formal change agent to link management activities into an integrated management system. Although chartered with long-term goals in mind, BIG's first task was to gain ISO 9001 certification. To encompass all Center activities, BIG worked with the senior management team and formed an informal employee task team called the ISO 9001 Implementation Team. Strategic offsites were held with the senior management team to instruct them about ISO 9001 benefits and about how obtaining certification supported KSC's goals. BIG also visited directorate and organizational all-hands meetings to conduct question-and-answer sessions with employees. BIG led monthly management reviews with the senior management team to report the status of the ISO 9001 implementation effort and to bring problems and issues before the senior management team for resolution. Senior management team involvement demonstrated to employees KSC's commitment to ISO certification. BIG assembled the ISO 9001 Implementation Team to include one member from each of KSC's 19 directorates and organizations. The ISO 9001 Implementation Team was chartered to build an ISO-compliant management system. Each team member took lessons learned and program decisions back to their own directorate or organization, and documented procedures. This informal task team also proved invaluable in disseminating information in real time to each directorate and organization. The informal task team existed for 12 months, initially meeting every 2 weeks, but meeting every week for 6 months before certification. Integrating informal and formal task teams allowed KSC to apply the needed resources at the right time to lead, manage, learn about, and systematically implement ISO 9001 certification. KSC used many other formal and ad hoc teams throughout its transformation. KSC also established the manager of strategic planning position. This position provided a continuous focus on the strategic management process. Table 6.10 summarizes how KSC provided a change infrastructure.

CHAPTER CLOSURE

This chapter answered the fourth question — "How can you respond to the transformation and associated challenges?" A strategic response contains a strategic transformation path across four phases of the transformation. The next chapter defines the leader's role in the transformation.

TABLE 6.10
Enabling the Transformation: Providing a Change Infrastructure

Element	1995–1997	1998–2000	2001–2002
Providing a change infrastructure	• Informal employee focus groups • Business Innovation Group • Strategic Planning Manager	• Change Leader's Network	• Covey Award for Change Leader's Network

EYE ON THE LITERATURE

These sources can be useful to help you further understand a strategic response to a transformation:

- *Leading Change* by John Kotter
- *The Heart of Change* by John Kotter and Dan Cohen
- *Organizational Change and Redesign* by George Huber and William Glick
- *Navigating Change* by Donald Hambrick, David Nadler, and Michael Tushman
- *The Human Side of Change* by Timothy Galpin
- *The Change Masters* by Rosabeth Moss Kanter
- *The Dance of Change* by Peter Senge, Art Kleiner, Charlotte Roberts, Richard Ross, George Roth, and Bryan Smith
- *Breaking the Code of Change* by Michael Beer and Nitin Nohria
- *By What Method* by D. Scott Sink and William Morris with Cindy Johnston

ORGANIZATIONAL SELF-APPLICATION TASKS

Here is a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for transformation.

- What phase of the transformation are we in?
- What are we doing to move to the next phase? Have we missed a step?
- How well are we balancing the four focus areas?

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7 What Are Your Leadership Roles in a Transformation?

Lesson learned 5: Leaders play six roles in a transformation.

Leaders play critical roles in transforming their organizations. They set the environment to overcome the transformation challenges. The senior management team must provide leadership to ensure that the transformation is successful. Organizational transformations are fundamental changes in the manner in which each employee behaves on a daily basis. Employees will be expected to take on more responsibility to make the transformation successful. Other studies show that leadership has profound impacts on the workforce, morale, and ability to meet the mission.

Leadership is the set of actions that engages the organization to make the transformation a reality, by providing a context and environment for change (Kotter, 1996). Leadership actions include establishing a sense of urgency; establishing a guiding coalition/infrastructure and process; communicating, providing symbols, signals, and rewards; and managing internal and external politics (Kanter et al., 1992; Kotter, 1996). Lawler et al. (1998) found that leadership is related to successful change initiatives. Simons (1994) found that senior managers differ in their use of leadership actions to drive organizational change. Leadership focuses on providing the initial and sustaining driving force for the transformation (Kotter, 1996). Kotter (1996) outlined leadership actions that included developing and sharing the organization's strategic direction and communicating with the organization. Sink and Morris (1995) listed the leadership actions of understanding and managing culture, sharing information, maintaining motivational support for the change, and managing internal and external politics to gain support and remove obstacles or barriers. Using this research and the Kennedy Space Center (KSC) experience, we define six roles a leader plays in a transformation:

1. Involve the team in strategy.
2. Provide a vision for the organization.
3. Chart a course for the future and pick the right change approach.
4. Implement rational decisions and actions.
5. Create an environment for strategy.
6. Demonstrate commitment.

The leader needs to hold people accountable for making the change and for behaving in new ways in accordance with the new business model. The leader must play these six roles to create the environment in which accountability for the transformation can occur.

LEADERSHIP ROLE 1: INVOLVE THE TEAM IN STRATEGY

The first leadership role focuses on defining or implementing a leadership style to involve the management team in strategy. As shown in Figure 7.1, we define leadership style for the transformation as composed of two dimensions: focus of the strategy and degree of involvement of the senior management team in the strategy. The focus of the strategy can be either just the short term or it can be focused on the all-term (short, mid, and long term). The degree of active involvement of the senior management team describes how much it — in addition to the leader — is involved in strategy setting. Senge et al. (1999) describe this dimension as going from the leader "telling" the strategy to the team co-creating the strategy, where the team is the leader and senior management. In selecting this style, the executive must balance the sense of urgency for the change with the capability of the collective management team to make the needed transformation.

KSC's management team changed its leadership style over the life of its transformation from 1995 to 2002. At times, the leadership style was co-creating the future. The initial series of strategic offsite discussions were primarily co-creating. At other times, the group became focused on more immediate challenges facing NASA and KSC. Both the executive and senior management teams must have a clear understanding of the leadership style under which they are operating. Confusion over style leads to frustration and unclear expectations.

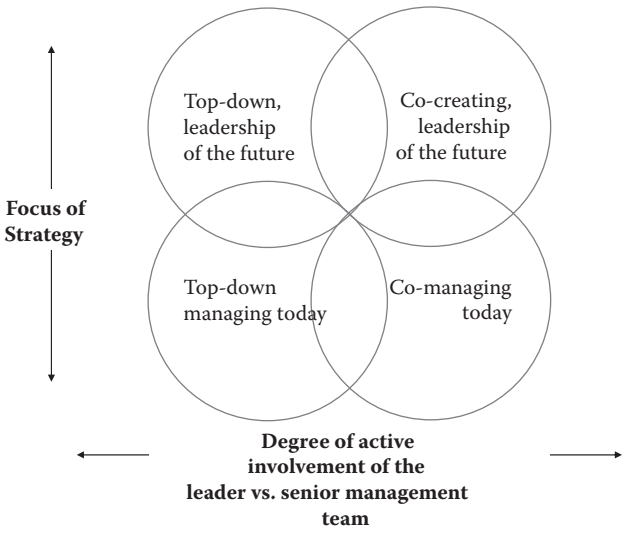

FIGURE 7.1 Four leadership style approaches.

LEADERSHIP ROLE 2: PROVIDE A VISION FOR THE ORGANIZATION

In the second leadership role, leaders must drive the management team to create a vision for the organization. With the transformation's challenge of developing a new business model, the leader must provide a vision of the future. This vision provides a context for making decisions. The leader does not necessarily need to provide the vision on his or her own, but must enable an environment in which the vision can be set by the management team. The leader must then consistently articulate that vision. As Theodore Hesburgh, former president of the University of Notre Dame, said, "The very essence of leadership is [that] you have to have a vision. It's got to be a vision you articulate clearly and forcefully on every occasion. You can't blow an uncertain trumpet." Futurist Joel Barker also pointed out the need for a vision: "Vision without action is a dream. Action without vision is simply passing the time. Action with vision is making a positive difference." The vision or picture of the destination or the ideal future state of the organization provides the context for the long term and direction for actions. The vision helps describe the difference in the organization from today.

The intent of the first four KSC offsites was to develop awareness of the need to change and to build a shared vision. Based on the chosen leadership style, the KSC center director began to co-create the vision for KSC. Once the vision is set, the path to achieve the vision needs to be defined.

LEADERSHIP ROLE 3: CHART A COURSE TO THE FUTURE AND PICK THE RIGHT CHANGE APPROACH

In the third leadership role, leaders must drive the management team to chart a course for achieving the vision. Once the vision is defined, the leader must help the organization determine the path to the future state. Different change approaches (e.g., evolutionary vs. revolutionary) can be used and must be selected carefully. The leader must help the organization understand the vision, the gap between the organization's current and desired states, and the path to close the gap. The leader must work with the organization to chart the course to the future. Many individuals may suggest that the path cannot be created — the world is too uncertain and offers little control to the leadership team. However, the strategic plan provides a baseline document to be adjusted as the environment changes. The vision and path provide the baseline understanding to drive decision making and action taking in an ever-changing environment.

At KSC, the KSC center director worked with the management team to both create the vision of the future and to chart a course to the future. They developed a strategic roadmap that defined how KSC would evolve its mission and organization over time to best serve NASA (i.e., position itself within NASA and align the internal KSC workings). Figure 7.2 provides an example of the KSC roadmap.

KSC used a roadmap, similar to the one that NASA used for its strategic plan (NASA, 1997), to describe how KSC would continue to bring value to NASA and KSC's customers in both the short and long term. KSC used this roadmap to describe

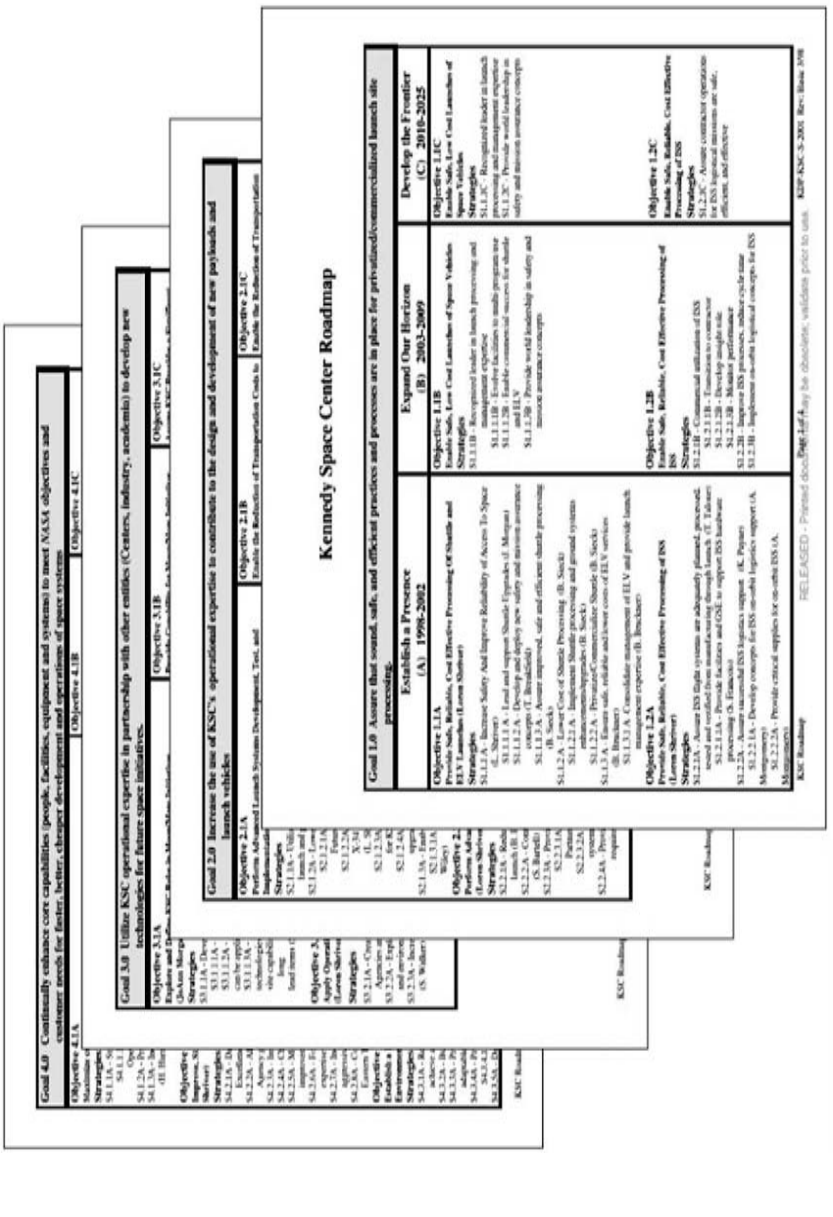

FIGURE 7.2 KSC strategic roadmap (March 1998 revision).

goals, objectives, and strategies for its current, transition, and future states. The roadmap described what KSC will work on to help NASA meet its mission requirements today and in the future. The KSC roadmap, paralleling the NASA roadmap, contained three periods: 1997–2002, 2003–2009, and 2010 and beyond. Within each period, a set of objectives and strategies was to be accomplished to move KSC from its current state (i.e., focused on operations) to a new state (i.e., focused on development and insight into operations). The roadmap was used to describe:

- The relationship among KSC's current, near-term, and long-term future states. For example, the objectives for the first period of goal 1, "Assure sound, safe, and efficient practices are in place for private/commercial processing," reflected the then-current KSC mission of launch and payload processing. In the second and third timeframes, the objectives reflected the change to a role of performing insight into the operations performed by the contractor.
- The future-state requirements that must be met by the transition flow. For example, goal 2, "Increase the use of operational knowledge in the design/development of payloads and new vehicles," and goal 3, "Partner to develop new technologies for future space initiatives," reflected KSC's efforts to be a development center for NASA. KSC had to achieve outcomes aligned with both NASA's short-term goals (e.g., Space Flight Operations Contract) and with the long-term future (e.g., space exploration and routine space travel).
- Actions to be taken today to balance current mission requirements with the transition to the future state. In the first goal and time interval, a major focus was on moving Shuttle operations to the contractor. This move involved developing an insight process for the government and shifting civil service employees to other areas. KSC's actions and outcomes in the short term affected its ability to play a role in long-term projects. For example, KSC had to successfully accomplish current development efforts, such as the new Checkout and Launch Control System and Shuttle upgrade projects. KSC's performance on these projects would affect its ability to receive other NASA developmental projects. Some of the objectives and strategies for the first term were developed based on first defining KSC's involvement in later states. For example, the desire for the X-34 to be processed and launched at KSC in the future drove the requirement for KSC to take part in current design efforts for the X-34. KSC needed to become an active partner, not just a reactive player hoping to be involved at a later date.
- The business decisions that must be made to invest or divest in areas to reach the short- and long-term states. Goal 4, "Continually enhance core capabilities to meet customer needs," focuses KSC on applying its resources to develop the processes, tools, technology, and workforce to bring value to current and future missions.

LEADERSHIP ROLE 4: IMPLEMENT RATIONAL DECISIONS AND ACTIONS

In the fourth leadership role, the leader must drive the organization to make rational decisions that lead to rational actions. Once the vision and path are defined, the leadership team needs to make decisions and take actions leading the organization along the path from the current state to the future state. Every day, decisions will need to be made in the context of the vision and change path to the future.

Rational decisions are those that are aligned to the environment and the organization's strategic direction. The decisions and actions should provide positive outcomes as defined by the vision and path to the future. As shown in Figure 7.3, four potential scenarios evolve. The intent is to make decisions that lead to planned actions that result in positive impacts on the desired outcomes or strategic intent.

At KSC, the KSC center director and the management team made a set of decisions leading to actions. The actions to change the mission and to enhance the organizational management processes were based on decisions to make the vision a reality. As shown in Figure 6.3, KSC made decisions and took actions consistent with their desired outcomes. Not all of these actions were successful — see the analysis in Tables 5.3, 5.4, and 5.5. This analysis pointed to the identification of the enablers for implementing a new business model.

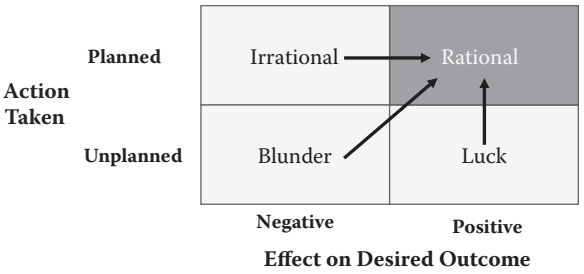

FIGURE 7.3 Rational decisions.

LEADERSHIP ROLE 5: CREATE AN ENVIRONMENT FOR STRATEGY

Under the fifth leadership role, the leader must provide the environment in which strategy can flourish. An environment needs to be created in which an infrastructure supports the leadership team in making the strategy process work to deliver the desired outcomes. The leadership team needs to have open, honest, strategic conversations that lead to good decisions being made and accountabilities being met.

As shown in Figure 7.4, the environment for strategic management is composed of the strategic management infrastructure, leadership team, and strategic management process. The infrastructure is the set of people, processes, and tools used to help the leadership team stay focused on strategy. The leadership team is the leader and senior management team that is accountable for setting and implementing the strategy. This leadership team drives the strategic management process. I describe

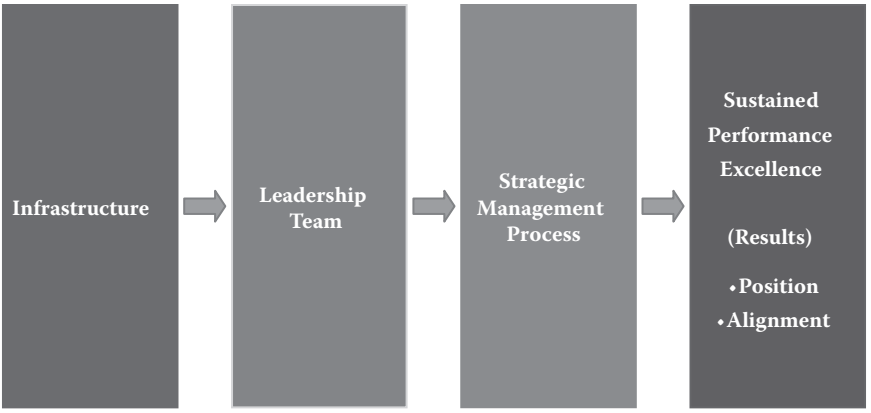

FIGURE 7.4 Environment for strategic management.

this process further in Chapter 9. By having an infrastructure support the leadership in implementing the strategic management process, the organization should be able to sustain performance excellence by positioning and aligning the organization. The leader needs to be the process owner for the strategic management process. The leader will not execute the process, but will ensure that other players in the organization are executing the process as required. Without the leader creating the environment, the day-to-day activities will overrun the strategic thinking and decision-making needed for the organization to transform.

At KSC, the KSC center director tried to create the right environment for strategy. To provide the strategic management infrastructure, KSC established the position of the strategic planning manager. KSC also established the Business Innovation Group to establish the business management system. To build the leadership team, KSC (1) implemented a Leadership Excellence Achievement Program to develop the "down-the-line leadership" skills, (2) provided coaching and training to build the collective skills of the senior management team, and (3) conducted a series of strategic offsites to develop a shared understanding of the strategies and priorities. The strategic management system was developed by the Business Innovation Group's design of the business management system.

LEADERSHIP ROLE 6: DEMONSTRATE COMMITMENT

The sixth leadership role focuses on gaining and demonstrating senior management commitment. The management team must continuously demonstrate commitment to the transformation and strategy processes. It must communicate, act, and reward in alignment with desired outcomes.

Senior management commitment to the strategic management process and strategy is essential to a successful transformation and strategy. Without commitment to the process, the process will fail. Commitment is gained by having routine, open, honest conversations in which involvement is invited. Once the strategic message is shared, the employees need to see that the senior management team is committed to

the strategy. The employees need to have the management team help them put the pieces of the strategy together — they need the management team to connect the dots of the strategy. They also need to see that senior management is working together as a team to contribute to a common end — the strategy. A new strategy will force some "sacred" projects or other items to be halted and new ones started. Letting go of existing items and starting new ones takes commitment. This commitment is necessary when the organization is developing plans to implement the strategy.

At KSC, it was important to the workforce to see senior management's commitment to moving forward. The management team did have dual reporting chains (e.g., the program and KSC chains). Gaining commitment to make decisions and implement actions consistent with KSC's strategic direction could be challenging for directors who also had program responsibilities. Also driving the need to see organizational or KSC-wide commitment was the fact that many employees worked within their directorate for their entire career. Seeing cross-functional or directorate commitment was important for supporting the vision. KSC used all-hands communication meetings and follow-up directorate rollouts to demonstrate senior management commitment.

CHAPTER CLOSURE

This chapter answered the fifth question, "What are your leadership roles in a transformation?" This chapter defined the six roles a leader needs to play in the transformation. While implementing these roles, the leader needs to think strategically. The next chapter defines six strategic thinking principles.

EYE ON THE LITERATURE

These sources can be useful to help you further understand leadership in a transformation:

- *Leading Change* by John Kotter
- *The Heart of Change* by John Kotter and Dan Cohen
- *The Change Masters* by Rosabeth Moss Kanter
- *The Dance of Change* by Peter Senge, Art Kleiner, Charlotte Roberts, Richard Ross, George Roth, and Bryan Smith
- *Leadership Is an Art* by Max DePree
- *Leadership and the New Science* by Margaret Wheatley
- *Hope Is Not a Method* by Gordon Sullivan and Michael Harper
- *Leading Corporate Transformation* by Robert Miles
- *Champions of Change* by David Nadler

ORGANIZATIONAL SELF-APPLICATION TASKS

Here is a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for transformation.

- How well have we involved the team in strategy?
- How well have we provided a vision for the future?
- How well have we charted a course to the future?
- How well are we implementing decisions aligned with our vision and path to the future?
- How well are we creating an environment for strategy?
- How well are we demonstrating commitment to our process and transformation?

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8 What Principles Can Help Guide Your Strategic Thinking?

Lesson learned 6: Six strategic thinking principles can help guide your thinking — the leader must connect the dots.

To help manage the transformation challenges, implement the strategic response, and implement the leadership roles, you must think strategically. From the Kennedy Space Center (KSC) experience, we extract and describe six strategic thinking principles:

1. Understand environments.
2. Focus on outcomes.
3. Manage the all-term.
4. Balance responsiveness with proactivity.
5. Synthesize multiple viewpoints.
6. Align goals, objectives, strategies, and measures.

As we shall see, KSC implemented these principles in their strategic planning roadmap.

The glue that holds these six principles together is the concept of connecting the dots. The leader must understand and communicate the connection of the results of strategic thinking. The strategic response, leadership roles, and strategic thinking can be implemented with a systematic strategic management process.

STRATEGIC THINKING PRINCIPLE 1: UNDERSTAND ENVIRONMENTS

The first principle is to understand environments. This principle highlights the need to understand the current and future environments and the implications of these potential environments to the organization (Schwartz, 1996). Many future potential environments (e.g., scenarios) exist for the organization, some more positive than others. Strategic thinking involves defining what the potential future environments are, what they mean for the organization, and what the most desired environment is. Understanding environments is a process of sorting out what potential scenarios face the organization. Once these are defined, the organization needs to define the more favorable scenarios, the scenarios they need to be prepared for, and the scenarios they can ignore. From these scenarios, the organization can develop strategies to

either create the favorable scenarios or ensure that the organization is ready for an unfavorable scenario. In the end, the organization needs to take action to position and align itself.

In the 1997 KSC strategic management offsite, the KSC center director presented potential scenarios facing KSC. He asked the management team which scenario they wanted to create. They began to explore what their future might be like. They struggled with the thought of becoming a government-owned, contractor-operated center. They believed they could contribute more to NASA. They began to focus on the environment they wanted to create for themselves. Again, in 2000, KSC used a scenario-planning process to help define and understand the potential scenarios facing NASA and KSC. The management team used the understanding of these scenarios to better understand the organization's path to the future.

STRATEGIC THINKING PRINCIPLE 2: FOCUS ON OUTCOMES

The second principle is to focus on outcomes. This principle highlights the need to define the desired outcomes and align decisions and actions with these outcomes. Desired outcomes are the results the organization needs to achieve from the perspective of its customers, key stakeholders, and employees. Once outcomes are defined, the remainder of the strategy process can be implemented. Desired outcomes drive the strategy.

As stated earlier from a transformation perspective, KSC defined its outcomes (Figure 2.11). KSC further defined its desired outcomes through its goals:

- Goal 1: Assure that sound, safe, and efficient practices are in place for private/commercial processing.
- Goal 2: Increase the use of operational knowledge in the design/development of payloads and new vehicles.
- Goal 3: Form partnerships to develop new technologies for future space initiatives.
- Goal 4: Continually enhance core capabilities to meet customer needs.

These outcomes led to the KSC roadmap (see Figure 7.2), which defined its strategies, tactics, and actions.

STRATEGIC THINKING PRINCIPLE 3: MANAGE THE ALL-TERM

The third principle is to manage the all-term. This principle highlights the need to understand the relationship among the current, short-term, and long-term states of the organization. The organization needs to think and take actions to meet the requirements of the current, short-term, and long-term states. The issue with managing the all-term is that the organization must align resources and take actions to:

- Meet today's mission
- Transition to the next or short-term state of the organization
- Transform to the long-term state

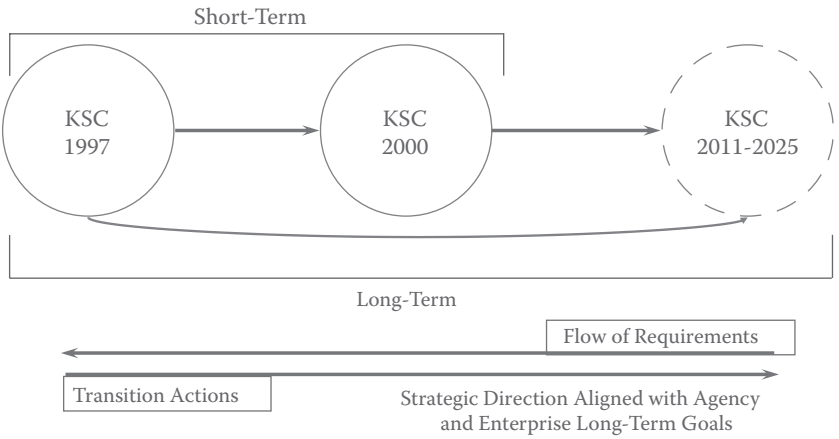

FIGURE 8.1 KSC was undergoing an "all-term" transformation.

To transform KSC, senior management needed to answer a set of questions. The questions focused on where KSC was, where it wanted to be, and how it could get there. The transformation of an organization involves understanding its current state and defining its ideal future and transition states. The transition state represents the time the organization is balancing its current and future state missions and core businesses. Figure 8.1 shows the three states of KSC over time. The strategic direction as developed in strategic planning defines the requirements and time frames from which actions are taken to move the organization to the transition and future states. KSC's description of the relationship between its past and future states is shown in Figure 2.3. KSC used this model to define its actions to ensure that current, short-term, and long-term needs were met. In 1997, KSC was operating in an oversight mode for the Shuttle program. The organization was being driven to move to an insight mode in the near term as the Space Flight Operations Contract (SFOC) was implemented. During strategic planning, employee focus groups identified the need to define the state beyond the near-term transition to the SFOC; that is, the employees wanted to know what the long-term state was. Therefore, KSC had to strategically think about and understand:

- Where KSC was in 1997
- Where it needed to be in 2000
- Where it desired to be in the long term
- How these three states were related
- What actions were needed to achieve each of the three states

Again, this strategic thinking principle was made real in the KSC strategic roadmap. For each time frame, the objectives and strategies described what needed to be accomplished to create KSC's state in that time frame.

STRATEGIC THINKING PRINCIPLE 4: BALANCE RESPONSIVENESS WITH PROACTIVITY

The fourth principle is to balance responsiveness with proactivity. This principle highlights the need to be responsive to meeting current requirements while at the same time trying to influence the requirement-setting process of the organization's key stakeholders. All organizations are part of a larger system. For example, some organizations are divisions or business units in a larger organization, or a field center of an agency (e.g., KSC of NASA). Being part of that larger system, the organization must be responsive to the direction of the guidance provided by headquarters. Responsiveness is also important for the organization to meet customer needs. A reactive response focuses on defining how the organization can meet the needs and requirements of headquarters or the customer. In addition to being reactive, the organization needs to be proactive. By being proactive, the organization helps the parent organization define the future. Being proactive is defining the future requirements and bringing potential solutions to these requirements.

KSC was extremely responsive. KSC, as an operational center, had had very little program leadership responsibilities assigned. The program managers defined requirements and KSC defined how they would meet them. This thinking moved itself into the strategic arena as well. The NASA administrator, Dan Goldin, asked KSC center director Roy Bridges to develop a strategic plan for KSC. Roy Bridges called for KSC to be further responsive and proactive.

STRATEGIC THINKING PRINCIPLE 5: SYNTHESIZE MULTIPLE VIEWPOINTS

The fifth principle is to synthesize multiple viewpoints. This principle highlights the need to integrate many viewpoints and inputs into the strategy-setting process. While the strategy is being worked on, many factors will influence the strategy. Each factor needs to be understood and integrated. While this is being done, many drivers will come into play to influence the strategy.

KSC developed its goals, objectives, and strategies to ensure that a set of outcomes was achieved. The set included bringing value to NASA and customers, accomplishing the future state and core business, overcoming sacred cows and concerns, and meeting the KSC guiding principles. NASA goals and objectives were the primary drivers for KSC actions. The sacred cows were the items (internal and external) that prohibited KSC from achieving its future state and meeting the NASA/Enterprise goals/objectives. KSC defined the sacred cows to be eliminated: organizational self-reliance; conservative cost and schedule estimation; excessive user/customer documentation; excessive oversight, meetings, and formal reviews; red tape (slow response, lack of flexibility); and risk avoidance. The concerns were items that, again, had to be managed in order for KSC to move forward. The concerns included maintaining skills and expertise, being unable to hire new employees, retaining good people, and providing pricing flexibility to customers. These items were integrated into the KSC roadmap.

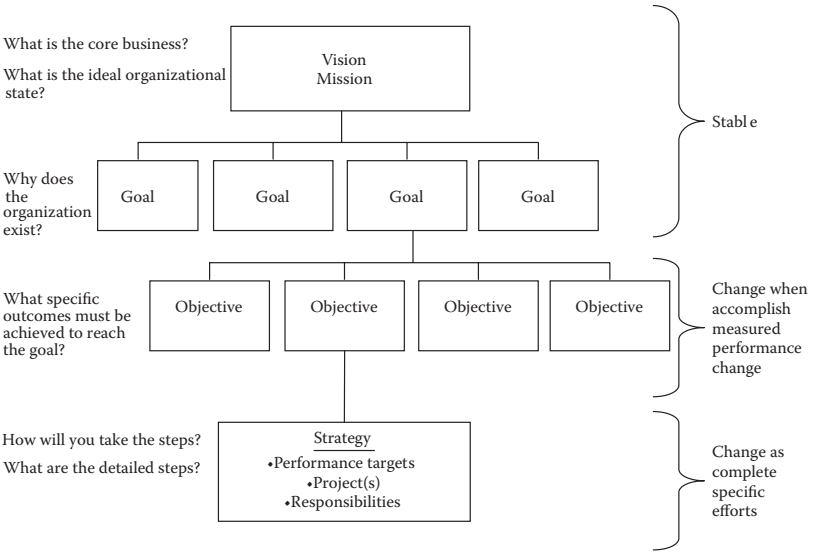

FIGURE 8.2 Relationship among goals, objectives, strategies, and projects.

STRATEGIC THINKING PRINCIPLE 6: ALIGN GOALS, OBJECTIVES, STRATEGIES, AND MEASURES

The sixth principle is to align goals, objectives, strategies, and measures. This principle highlights the need to connect the dots of the strategy to drive outcome achievement. To help the organization understand and give meaning to actions, a clear alignment of the goals–objectives–strategies is needed. The relationship of the products is shown in Figure 8.2. A *goal*, which elaborates on the mission statement and constitutes a specific set of policy, program, or management outcomes, defines why KSC is taking action. An *objective*, which is a specific milestone and target level of near-term outputs that are to be achieved during strategic implementation, defines what KSC needs to do to meet the goal. A *strategy*, which is a description of how the goals and objectives will be achieved, defines how KSC will meet the objective. A strategy is composed of a set of projects. A *project* is a set of actions that accomplishes a given outcome with cost, schedule, and performance requirements. Again, KSC's strategic roadmap helped document the alignment of goals, objectives, and strategies.

CHAPTER CLOSURE

This chapter answered the sixth question, "What principles can help guide your strategic thinking?" This chapter defined six principles for strategic thinking. KSC implemented these principles in their strategic roadmap. These principles and the six leadership roles can be implemented via the strategic management process.

EYE ON THE LITERATURE

These sources can be useful to help you further understand organizational transformations and evolving organizations:

- *Scenario Planning: Managing for the Future* by Gill Ringland
- *The Rise and Fall of Strategic Planning* by Henry Mintzberg
- *Building a Shared Vision* by C. Patrick Lewis
- *The Art of the Long View* by Peter Schwartz

ORGANIZATIONAL SELF-APPLICATION TASKS

Here is a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for transformation.

- How well are we defining our environments?
- How well are we defining our desired outcomes?
- How well are we managing our all-term?
- How well are we balancing being responsive and proactive?
- How well are we integrating multiple viewpoints?
- How well are we aligning goals, objectives, and strategies?
- How well are we connecting the dots?

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9 What Is a Systematic Process to Manage Your Transformation Strategy?

Lesson learned 7: We manage the transformation challenges, implement the strategic response, and implement the leadership roles through the strategic management process.

As defined earlier, a transformation is the purposeful, intentional, consistent change in an organization's business model. This transformation creates five challenges that require a strategic response, leadership, and strategic thinking. To implement a strategic response, the organization can follow a systematic strategic management process. From the previous chapters, we can see that strategy and strategic management were vital parts of the KSC response to its transformation challenges. While executing the strategic management process, the leadership team and organization will face challenges.

WHAT IS THE STRATEGIC MANAGEMENT PROCESS?

As shown in Figure 9.1, strategic management is defined to contain eight functions supported by a core of three elements. Strategic management is a continuous process aimed at aligning everyday actions with the organization's long-term direction based on its customers' needs. Using a strategic management process produces positive results (Pekar and Abraham, 1995; Taylor, 1984; Waalewijn and Seegar, 1993; Wilson, 1994). These findings indicate that strategic management is a key to providing organizations long-term growth, profitability, and a sustained competitive advantage. However, barriers to strategic management exist (Hahn, 1991; Sandy, 1991; Waalewijn and Segaar, 1993; Wilson, 1994). To manage the organization's strategy, an eight-step strategic management process is used. The strategic management process includes the functions of Strategic Planning, Implementation Planning, Execution, and Performance Evaluation (NASA, 1996). We have expanded this cycle by focusing on the interface or deployment phases between the four functions.

The strategic management process includes eight functions:

1. *Set Strategic Intent* is a group process (strategic planning) by which the organization defines or refines the organization's vision, mission, goals, and objectives.
2. *Deploy the Strategic Intent* is the set of activities to share the strategic intent throughout the organization.

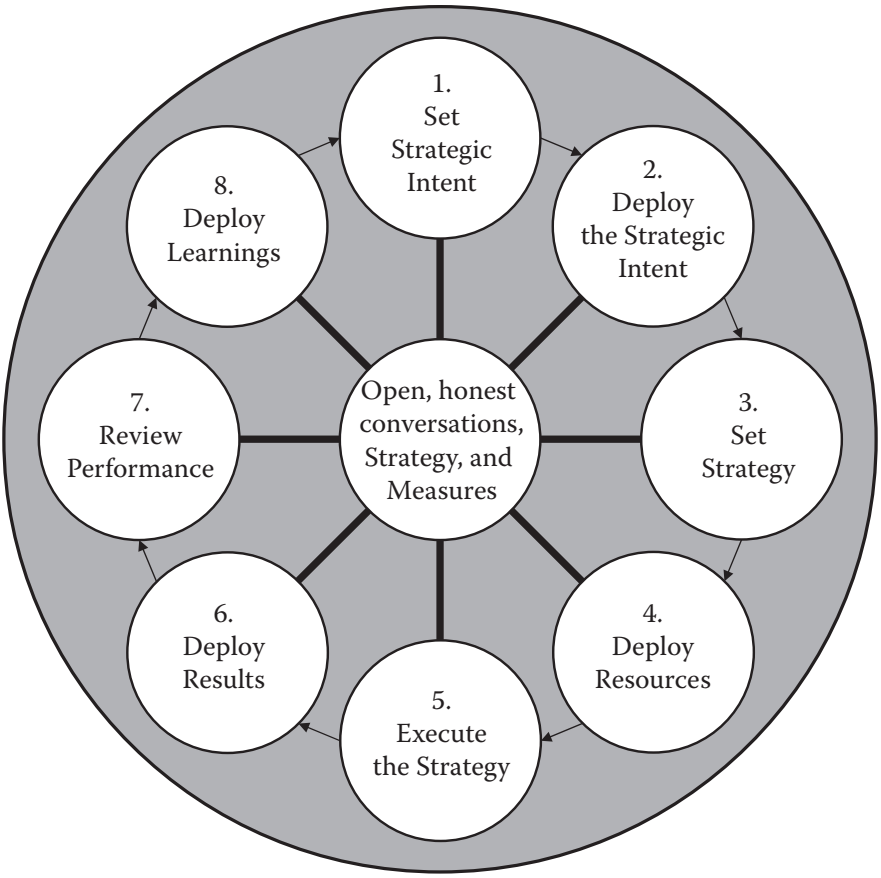

FIGURE 9.1 Eight functions of the strategic management process.

3. *Set Strategy* is the process (implementation planning) by which the organization develops specific strategies and actions to implement the strategic intent and defines the specific performance measures to track progress.
4. *Deploy Resources* assigns resources to the specific initiatives defined in *Set Strategy.*
5. *Execute the Strategy* is when the projects and activities are performed.
6. *Deploy Results* is the process by which the organization measures its performance in accomplishing goals and objectives.
7. *Review Performance* is the process (performance evaluation) to review performance to produce lessons learned and recommendations on how to improve the organization and adjust the strategic intent.
8. *Deploy Learnings* is the use of lessons learned and recommendations in the next cycle of strategic management.

These functions can take place across many levels of the organization (e.g., for KSC, this took place across the Center, directorates, and projects). These eight steps provide the structured process for the management team to lead and manage the strategic transformation path (i.e., continuously set strategy and make the strategy real). Before we discuss each of these functions, we shall explore the core of the process.

WHAT IS THE CORE OF THE STRATEGIC MANAGEMENT PROCESS?

At the core of the strategic management process are three elements:

- Open, honest conversations
- Strategy
- Measures

Taken together, these three elements are what a transformation requires. A transformation requires a management team to hold conversations to develop a strategy for change. Measures translate the strategy to concrete quantifiable outcomes. These measures help determine where the organization needs to go. The management team uses the measures during conversations to help refine the strategy.

Strategic Management Core 1: Holding Open, Honest Conversations

The first core of strategic management is to hold open, honest conversations. Strategic conversations focus on the organization's ever-changing environment and how well the organization's strategy is working. The aim is to adjust the strategy to the environment. Having routine strategic conversations is important, but equally important is the need to have these conversations in an environment in which people can talk openly and honestly. The individuals in the conversation must feel that they can share their opinions without fear of repercussions. If people are afraid of the ramifications of sharing their thoughts, they will not create new paradigms or share unfavorable assessments of the external environment and internal workings of the organization. (By unfavorable, I mean the conversations that go against the perceived thoughts of the leadership or power team.) Many unspoken conversations will be left hanging. The needed conversations that get to core issues will be held in the halls and small groups, not in the larger management team where actions need to be taken. Open, honest conversations are needed to raise and answer the fundamental issues facing the organization. Without open, honest conversations, strategy is destined to fail — commitment and involvement in the strategy will decrease. The specific conversations for each of the eight functions of strategic management will be highlighted when we discuss each function in the next eight sections.

At KSC, the group at times struggled to have meaningful conversations in a large group setting. The group had better open and honest conversations in smaller settings and in one-on-one meetings with the KSC center director (CD). Not holding open and honest conversations contributed to a strategic direction that was not fully supported.

One challenge to holding continuous strategic conversations is finding the time to devote to them. Annual management strategic offsites are one tool to hold these

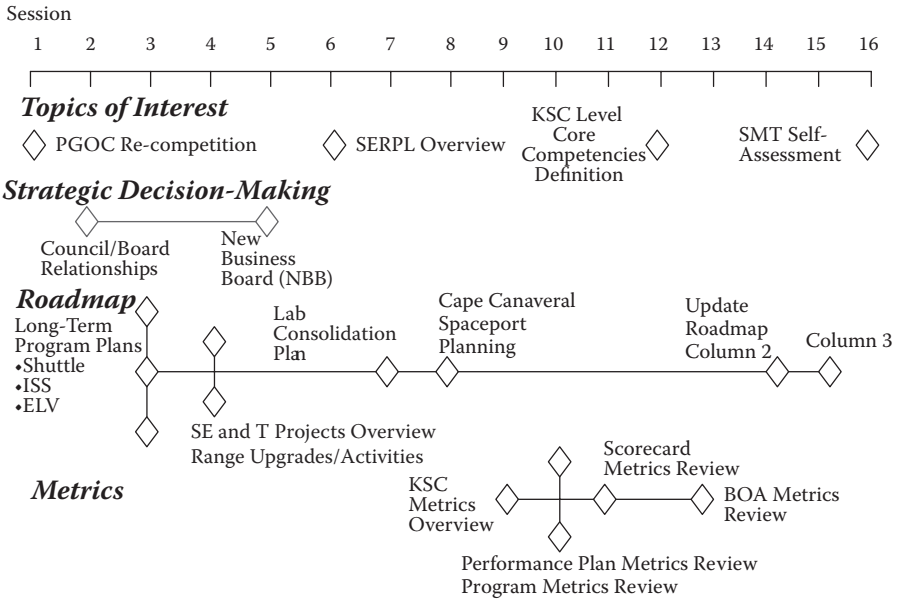

FIGURE 9.2 Example list of KSC strategic Friday topics (developed by Jenny Lyons, KSC strategic planning manager).

conversations, but the problem with strategic offsites is that they are usually held just once a year. Once the strategic offsite is over, people go back to work on the daily, routine issues. The organization needs to find a way to hold strategic conversations on a routine basis. To help hold continuous conversations, KSC implemented a "strategic Friday" concept, where the senior management team would routinely meet to discuss strategic issues, not the normal everyday status of operations. Figure 9.2 provides an example schedule of the strategic items to be discussed during a series of strategic Fridays. This was developed by Jenny Lyons, the KSC strategic planning manager.

Strategic Management Core 2: Strategy

Before we spend a lot of time talking about developing, deploying, implementing, and evaluating strategy, we first must define what we mean by *strategy*. The Merriam-Webster dictionary defines strategy as:

- A careful plan or method
- The art of devising or employing plans toward a goal
- An adaptation or complex of adaptations that serves or appears to serve an important function in achieving evolutionary success

Using the work of Mintzberg (1994), we can define strategy as the strategic intent of the organization (e.g., mission, vision, goals) and the plan or pattern of decisions

to implement the strategic intent on a daily basis. Mintzberg (1994) defined strategy using four concepts:

- Strategy as a plan: a direction, guide, or course of action into the future, a path to get from here to there
- Strategy as a pattern: consistency in behavior over time
- Strategy as position: the determination of particular products in particular markets
- Strategy as perspective: an organization's way of doing things, its concept of the business

Mintzberg (1994) further defined the strategy concept by focusing on strategy that is implemented or realized. Realized strategy is a function of four components:

- Intended strategy (IS): the strategy we planned and intend to follow
- Deliberate strategy (DS): the intended strategy implemented
- Unrealized strategy (US): the intended strategy we abandoned
- Emergent strategy (ES): the unplanned strategy that emerged over time

Therefore,

$$\text{strategy} = \text{realized strategy} = DS + ES = IS - US + ES.$$

Using Mintzberg's concepts, we define strategy to be of two types: strategic intent and daily strategy. Strategic intent is the macro view of the organization's position and perspective. The strategic intent is typically defined by items such as a mission statement, vision statement, goals, and guiding principles. This strategic intent provides the overarching theme to drive change in the organization. This strategic intent is translated into everyday actions by what we call daily strategy. Daily strategy as a pattern or plan is the use of planning tools to connect the strategic intent to a specific action. How well we align and implement both strategic intent and daily strategy is important. Daily strategy can be thought of as the projects used to move the organization forward. Strategy (strategic intent and daily strategy) is made quantifiable through the use of measures.

Strategic Management Core 3: Measures

Measures help translate the desired outcomes to quantifiable numbers that can be used to set strategy.

To further help clarify some of the more common products (i.e., mission, vision, goals, objectives, measures, and strategies), we provide a graphical model to connect these terms. As shown in Figure 8.2, the mission, vision, and goals are relatively stable. The mission and goals drive the specific objectives or the measurable performance to accomplish. One means of defining an objective is:

(↑↓) (measure) by (amount) by (date)

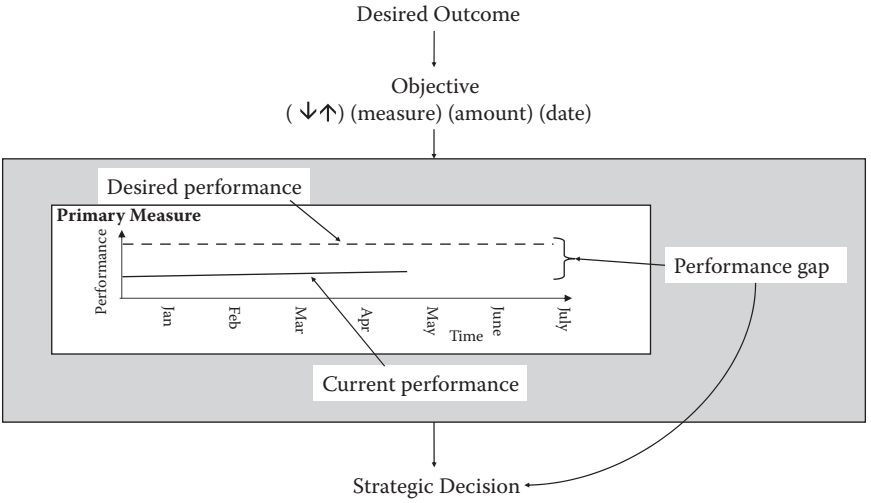

FIGURE 9.3 Relationship of objectives, measures, and strategies.

This format provides a clear link to the measurable performance that is important to the organization. These types of objectives drive both the daily work and improvement efforts. Figure 9.3 provides further definition of how goals, objectives, measures, and strategies are related. Objectives translate the desired outcomes into measurable performance criteria. The current-versus-desired performance is analyzed for performance gaps. The root cause of the gap is used to define and select the improvement strategies.

Conversations, strategies, and measures are the core of the strategic management process. We will next explore the eight steps or functions of the strategic management process.

STRATEGIC MANAGEMENT PROCESS FUNCTIONS

The next eight sections review each function of the strategic management process. For each function, we define:

1. The function's aim
2. The strategic questions addressed in the function
3. The function's products
4. The focus areas for executing the function
5. Methods to use to execute the function

These descriptions are drawn from KSC's experience in using the strategic management process to drive its evolution. From this understanding, a leader can set an agenda on how to implement strategic management to help transform an organization.

SETTING STRATEGIC INTENT THROUGH STRATEGIC PLANNING

Overview

Strategic planning is a group process by which the organization defines or refines the organization's strategic context and intent. The process involves understanding both internal and external environments (e.g., strengths, weaknesses, opportunities, threats). Strategic planning through this disciplined process "establishes the long-term direction of the organization in the context of the vision of the future, organizationally unique mission, and a specific set of goals, objectives, and policies developed in response to customer requirements, external mandates, and the external and internal environment" (NASA, 1996, p. 4). In this section, we explore the aim, questions, products, focus areas, and methods for strategic planning.

Strategic Planning Aim

The aim of strategic planning is to develop good strategy for the organization. Good strategy:

- Reflects the reality of the environment
- Is agreed upon by the management team
- Is implemented
- Is based on the concepts of strategic thinking
- Achieves the desired outcomes of the organization

Strategic planning requires a set of conversations to occur.

Strategic Planning Questions

In this step of the strategic management process, strategic conversations or questions need to be addressed:

- Who are we?
- What is the state of our environment?
- Where are we today?
- Why do we need to change?
- Where do we want to be in the future?
- How do we get to our future?
- How will we lead?
- What is our evolution?
- What is guiding our thinking?
- What is the essence of our strategy?

Strategic planning answers fundamental questions about the environment and organization. These questions and their answers are more complex than they appear. The challenge is having the senior management team (and later the entire

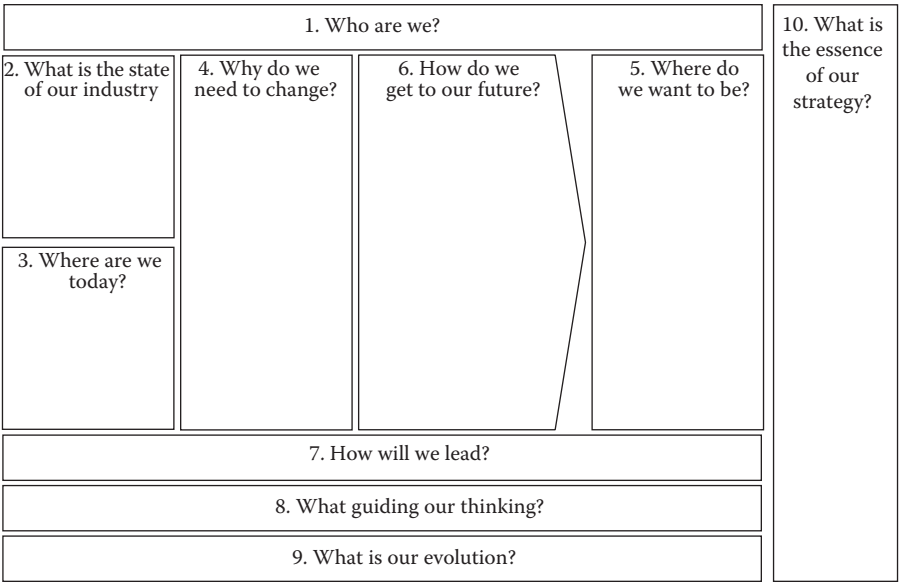

FIGURE 9.4 Strategic planning products answer the strategic questions.

organization) answer these questions in open, honest, and meaningful conversations. The products associated with strategic planning are used to answer these questions. Figure 9.4 provides graphical relationship of these strategic questions.

The KSC management team spent considerable time articulating KSC's strategic plan. This was difficult, because at the beginning they were told to get KSC out of operations — the very core of what they did. KSC's environment kept changing, and uncertainty about the data to help answer questions was high. KSC held a series of strategic offsite conversations (see Table 6.2) that helped the team answer the fundamental strategic intent questions. Figure 2.11 summarizes the results of these conversations.

Strategic Planning Products

We can divide the strategic planning products into products that are inputs to and outputs from strategic planning.

The products that are inputs to strategic planning focus on giving the planning team the common understanding to produce the output products. The input products include assessment of the environment and the organization. The output of strategic planning is an integrated set of "strategies, goals, objectives, action items, action teams, and action plans to improve performance" (Sink and Tuttle, 1989, p. 39). The output products include items focused on defining the organization's strategic context (e.g., environment, strategic assumptions, industry trends, scenarios) and the organization's strategic intent (e.g., mission/core business statement, vision/ideal future state, goals, and objectives).

KSC produced a strategic plan that discussed its core business, future state, guiding principles, and roadmap. To answer the strategic questions, KSC used a series of

strategic products. These products were shared in Chapter 2 (Figures 2.3–2.11). The KSC roadmap was discussed in Chapter 5.

Setting KSC's Strategic Intent

KSC used a strategic management process to answer the strategic planning questions. During the second strategic planning offsite, the senior management team established four senior management task teams. The first team focused on understanding the needs of KSC's customers. This team was composed of senior managers and a select group of employees. This team produced a description of the items that customers liked and disliked about doing business with KSC. The other three teams produced three statements describing the ideal future state for KSC's infrastructure/capabilities, expertise, and services. These three teams completed their tasks and decided to combine into one team before the next strategic offsite. KSC's future state and core business was to be a development center focusing on providing space systems processes, and test and launch techniques, and developing associated technologies. KSC's core business at that time was providing operational support to the Space Shuttle and associated payloads. KSC defined a set of guiding principles that transcended all decisions and actions at KSC. The guiding principles were: safety and health first; satisfy customer needs anytime, anywhere; build reliance and teamwork everywhere; and environmental leadership.

After the task teams shared the ideal future state, the senior management team developed an initial strategic planning roadmap with goals, objectives, and strategies to help KSC reach that future state. In developing its roadmap, KSC chose its near-term actions with care, because they would affect choices for longer-term actions, which were defined in more general terms than the near-term actions. Based on the strategic intent, the implementation process began to answer another set of questions.

Strategic Planning Focus Areas

When carrying out strategic planning, the organization needs to focus on developing good strategy that is shared among and agreed upon by the management team. The strategic planning focus areas include:

- Learning from the past, present, and future
- Seeing changes in the external environment
- Understanding the issues facing the organization
- Converting strategic conversations into decisions and actions

Learning from the Past, Present, and Future

The first focus area of strategic planning is to learn from the organization's past, present, and future. The organization must understand where it has come from and embrace lessons learned from the past. Without learning from past strategy attempts, the organization may repeat strategic mistakes. The organization also needs to

understand the factors that have led to the organization's success to date, and who the organization is. Learning from the present explores where the organization is today, and provides the grounding of current market position and organizational performance. Learning from the future refers to the organization understanding the potential future scenarios it is facing, and provides a basis for understanding what the organization needs to become.

Work in this focus area was evident at KSC in that the management team was extremely comfortable with KSC's proud past. The team had been successful in executing KSC's core business for the Shuttle and Shuttle payload programs; so successful that the management team questioned the push to get out of operations. The team struggled with that move as well as with what KSC's future might be. The management team used a scenario-planning approach to understand potential KSC futures, and used performance measures to understand KSC's present state.

Seeing Changes in the External Environment

The second focus area of strategic planning is seeing changes in the external environment. An organization needs to understand where the external world is going and what that means for the organization. The organization needs to be able to connect the events into trends, and then into implications for the organization and its business. The challenge is making sense of events and trends from a different perspective, not from an old perspective that might no longer be the most acceptable, valuable, or relevant. When it surveys its environment, an organization must be careful to not filter out or ignore events and trends that do not meet its commonly accepted perspectives or views. An organization that does not see a "sea change" in the environment could miss threats and opportunities for the organization.

This focus area was most evident at KSC in the changes brought on by the zero-based review and NASA administrator Dan Goldin's management philosophy. One group of managers could see in the external environment a need for change at KSC, whereas other managers believed its current core business and way of executing it was still the most appropriate. KSC addressed this challenge through a series of thought-provoking questions and exercises during their offsites. It also used the scenario-planning process to understand how the many potential different environments could lead to different implications for KSC.

Understanding the Issues Facing the Organization

The third focus area of strategic planning is understanding the issues that the organization is facing. The organization needs to understand all of the issues facing it, from multiple perspectives:

- How relevant, responsive, and ready are we?
- How well are we externally positioned?
- Is our mission or vision relevant?
- How well are we internally aligned?
- How well is our strategic management process helping us position and align ourselves?

Answering these questions helps the organization pinpoint the changes it needs to make in its strategic intent, and the specific objectives and strategies it needs to pursue. The challenge is answering these questions openly and honestly with the right data.

For KSC, the challenge was also in understanding all these issues. The focus of the KSC offsites was to help answer these questions.

Converting Strategic Conversations into Decisions and Actions

The fourth focus area of strategic planning is converting conversations into actions. This focus area is especially important for delivering the transformation. Once a strategic conversation occurs, the organization needs to act to make the strategy a reality. Without action, the conversation does not mean much. I have been in strategic planning meetings where the group was looking to put action items together at the end of the meeting, and the leader said, "No need to do that now, we can do that next week." At this point, you could see the participants' faces turn sour. They knew they had just wasted their time. Once an action is identified, someone must be held accountable for completing it, and that accountability must be enforced.

At KSC, this focus area was usually handled by developing a set of action items from the strategic offsites. It was sometimes difficult for people to see the connection of conversations to actions. Over time, it became harder to trace conversations to actions to results. The history map in Figure 6.3 summarizes the action items that resulted from the conversations and strategic intent products. Many within KSC did not see this connection. KSC held a training class to understand strategic management lessons learned. A detailed map of KSC strategic events was developed, shared, and discussed. The participants had not realized that the initiatives took place or why. They struggled with connecting the dots between strategic intent and initiatives.

Summary of the Methods for Setting the Strategic Intent

To address these strategic planning focus areas, KSC used a set of methods, including:

- Senior management strategic offsites
- Weekly strategic conversations
- Strategic thinking methods (e.g., scenarios)
- Organizational assessments
- Strategic intent products (e.g., strategic roadmap)

Table 9.1 summarizes how KSC used these methods in each of the strategic planning focus areas.

The intent of this section was to describe the strategic planning function. The strategic planning function was described by using its aim, questions, products, and focus areas. Once the strategic intent is set through strategic planning, the strategic intent needs to be shared with the organization.

TABLE 9.1
Summary of Methods KSC Used for Strategic Planning

	Method				
Focus Area	Strategic Offsites	Weekly Strategic Conversations	Scenarios	Organizational Assessments	Strategic Intent Products
Learning from the past, present, and future	✓				
Seeing changes in the external environment		✓	✓		
Understanding issues facing the organization		✓		✓	
Converting strategic conversations into decisions and actions	✓	✓			✓

DEPLOYING THE STRATEGIC INTENT

Overview

Deploying the strategic intent is the process of sharing the strategic intent with the organization and its stakeholders. Deploying the strategic intent helps the rest of the organization understand the organization's strategic context and intent. This understanding creates a foundation for the organization to make plans to implement the strategic intent. In this section, we explore the aim, questions, products, and focus areas for deploying the strategic intent.

Deploying the Strategic Intent Aim

The aim of deploying the strategic intent is to develop throughout the organization a shared understanding of the organization's strategic context and intent. From this shared understanding, the organization raises issues and identifies challenges to successfully implement the strategic intent, and develops actions for making the strategy succeed. To accomplish these aims through deploying strategic intent, a set of conversations needs to occur.

Deploying Strategic Intent Questions

In this step of the strategic management process, the organization needs to address these strategic conversations or questions:

- What is right with our strategy?
- What do we need to be aware of?

To answer these questions and deploy the strategic intent, the management team creates a set of products. To help management answer the questions above, the management team needs to answer another set of questions:

- Who are the intended audiences for our strategic intent message?
- What is the purpose of our message?
- What is the message?
- What are the different approaches for sharing our message?

Answers to these questions help the organization design the methods to deploy the strategic intent.

Deploying the Strategic Intent Products

We can divide the products for deploying the strategic intent products into products that are inputs to and outputs from deploying the strategic intent function.

The products that are inputs to deploying the strategic intent focus on helping the organization understand its strategic context and intent. The output of deploying strategic intent is the organization's insights, issues, and challenges to making the strategy real. The output products help the management team understand where the roadblocks are and what issues the organization may have with the strategic intent. These insights can help the management team adjust the strategic intent.

Deploying the Strategic Intent Focus Areas

When deploying the strategic intent, the organization will focus on two areas. These focus areas attempt to ensure that the organization shares and understands the strategic intent that is developed. The focus areas of deploying the strategic intent are:

- Sharing the message throughout the organization
- Understanding organizational concerns with the message

Sharing the Message Throughout the Organization

The first focus area of deploying the strategic intent is sharing the message of the strategic context and intent throughout the organization. Once set, the strategic intent needs to be shared with the organization. Without an understanding of the strategic intent, the rest of the organization does not have the context or rationale for the actions the organization is taking. The organization needs to understand the "why" and "what" of the strategy. The rest of the organization usually comprises the people who are implementing the strategic intent. The challenge is ensuring that the entire organization gets the same message no matter where they are in the organization, when they hear it, or who shares it with them. Once they understand the strategic message, employees can give their feedback so that senior management can adjust the strategy to ensure success.

KSC addressed this focus area by using a set of methods, the most visible of which were "CD Rollouts" and "CD-Comms." CD Rollouts were all-hands meetings, where the KSC director shared the strategic intent products. Most meetings were held annually, usually after the annual strategic planning offsite. CD-Comms

were direct letters to the workforce from the CD. As shared in Table 6.7, the CD used this mechanism often.

Understanding Organizational Concerns

The second focus area of deploying the strategic intent is understanding the organization's concerns with the strategy. Once the strategy is developed, the organization needs to identify the challenges and issues related to its implementation. Those working on the front lines of the organization may have insights into these issues and challenges. The management team needs to share the strategic intent and get feedback from the rest of the organization. By understanding the implementation issues ahead of time, the organization can adjust its strategic intent before it makes a mistake.

KSC worked on this focus area with CD Rollouts, followed by organizational/directorate rollouts, where each directorate shared the message again and gathered feedback from employees. This feedback was used to drive further senior management conversations and strategy adjustments.

Summary of the Methods for Deploying the Strategic Intent

To address these focus areas of deploying the strategic intent, KSC used a set of methods, including:

- Rollouts/all-hands meetings
- Feedback from the rollouts
- Strategic plan document
- Visual sharing products
- CD-Comms

Table 9.2 summarizes how these methods helped address the focus areas.

The intent of this section was to describe the deploy the strategic intent function. The deploy the strategic intent function was described by using its aim, questions, products,

TABLE 9.2
Summary of KSC's Methods for Deploying the Strategic Intent

	Method				
Focus Area	Rollouts/ All-Hands	Feedback from the Rollouts	Strategic Plan Document	Visual Sharing Products	CD-Comms
Sharing the message throughout the organization	✓		✓	✓	✓
Understanding organizational concerns		✓			

and focus areas. Once the strategic intent is shared and understood by the organization, the strategic intent needs to be made real through more detailed planning.

SETTING STRATEGY THROUGH IMPLEMENTATION PLANNING

Overview

Setting strategy, or implementation planning, is the process by which the organization develops specific strategies or actions to implement the strategic intent, and defines specific performance measures of the progress of the planned actions. Implementation planning "provides the detailed performance planning and proposed resource allocation to implement the goals, objectives, and other organizational initiatives identified during the Strategic Planning process" (NASA, 1996, p. 5). In this section, we explore the aim, questions, products, and focus areas for implementation planning.

Implementation Planning Aim

The aim of implementation planning is to align the organization's activities with the strategy. An organization uses the implementation plan to guide day-to-day behaviors and execution. Implementation planning develops the specific, individual strategies to make the overall strategic intent a reality. To accomplish these aims through implementation planning, a set of conversations needs to occur.

Implementation Planning Questions

The strategic conversations that happen during implementation planning help the organization translate the strategic intent into specific actions. In this step of the strategic management process, these strategic conversations or questions need to be addressed:

- How do we define actions to move the organization forward?
- What are the potential improvement ideas?
- What are the potential daily business efforts?
- How do we convert our strategic intent into specific actions?
- How do we get our employees to see their roles in the strategic intent?
- How do we get our employees to set specific performance expectations?

To answer these questions through setting strategy, a set of products is produced.

Implementation Planning Products

We can divide the implementation planning products into products that are inputs to and outputs from implementation planning.

The products that are inputs to implementation planning are the strategic intent products from strategic planning and the additional ideas from the information gathered from the deployment of the strategic intent. The outputs of implementation

planning are the proposed actions that need to be resourced. This set of actions can be described using four "buckets":

- The normal, day-to-day processes to administer today's business
- The improvement initiatives that cut across the organization — the big projects that reflect the projects the leader will put his/her energy into
- The specific improvement initiatives each organization needs to take on as part of a corporate-wide initiative [e.g., involvement in International Standards Organization (ISO certification)]
- The specific improvement initiatives each organization needs to take in relation to its specific responsibilities

These initiatives need to be evaluated, selected, and resourced. The organization does not have enough resources to invest in all of these areas, so it must focus on aligning these efforts to the strategic plan.

Implementation Planning Focus Areas

In executing the implementation planning function, the organization will focus on three areas. These focus areas convert the strategic intent into actionable plans. The implementation planning focus areas include:

- Converting the strategic intent to operational terms
- Aligning organizational roles
- Aligning objectives and measures

Converting the Strategic Intent to Operational Terms

The first implementation planning focus area is converting the strategic intent into operational terms, which are the specific objectives, measures and actions that make the strategic intent a reality. The organization must make decisions and take actions that move the organization from its current state to the desired state. As defined earlier, the strategic intent contains items such as vision and goals to define the end or desired state. The best means of defining the actions is to first explicitly define the objectives and measures. A quantifiable objective can be defined as {increase or decrease} {measure} by {amount} by {date}. The objective defines the gap to be closed — the amount of the measure to be changed by a given date. With good objectives and measures, the organization can make the strategy more realistic. After defining objectives and measures, the organization can then define strategies. As discussed earlier, measures are a core part of the strategic management process. The challenge facing the organization is to take the high-level strategic intent, as defined by vision, mission, goals, and transformation path, and turn it into very specific objectives, measures, and strategies.

As discussed earlier, KSC used an organizational roadmap that defined goals, objectives, and strategies to achieve the vision of a future state, while completing the current mission.

Aligning Organizational Roles

The second focus area of implementation planning is aligning roles in the organization to the strategic intent. In deploying the strategic intent and implementation planning, organizational subunits and employees will want to know how they fit within the strategy. To foster understanding and commitment to the strategic intent, the management team needs to help employees see how their contributions relate to the strategy. The challenge is helping the employee answer three basic questions for the work he or she does:

- Why do I do this work?
- What do I need to accomplish with this work?
- How do I do the work?

By working with employees, the management team aligns employee roles to the strategic intent of transforming the organization.

To overcome the challenge of aligning employee roles to the strategic intent, KSC used a set of methods. The first was the overall business management system. Figure 9.5 provides an overview of the business management system. This business management system organized and linked the documents describing KSC's strategic intent with each individual directorate's mission, roles, objectives, and processes.

The second was center-wide initiatives to highlight the important projects to move KSC forward. These are usually reported directly to the CD.

The third were process flow diagrams to document processes. The connection of the processes to the directorate's mission was made in each of the directorate's Business and Objectives Agreement Documents (BOAs). As part of the effort to become ISO 9001–certified, all processes within KSC were consistently documented. Figure 9.6 is an example of a process map organizing the documented processes of a directorate.

Aligning Objectives and Measures

The third focus area of implementation planning is aligning objectives and measures across the organization. This begins with aligning the organization's overall objectives and measures with any higher-order organization (e.g., KSC had to align its objectives and measures with those of NASA and the programs KSC supports). The organization must then align the internal objectives and measures of each subunit with the organization's overall objectives and measures.

As shown in Figure 9.7, KSC had to align objectives and measures in five key areas:

1. Align KSC's objectives and measures to NASA's.
2. Align KSC's overall objectives to its measures.
3. Align KSC's overall objectives with subunits (i.e., directorate objectives).
4. Align subunit objectives with subunit measures.
5. Align subunit measures with the overall measures of KSC.

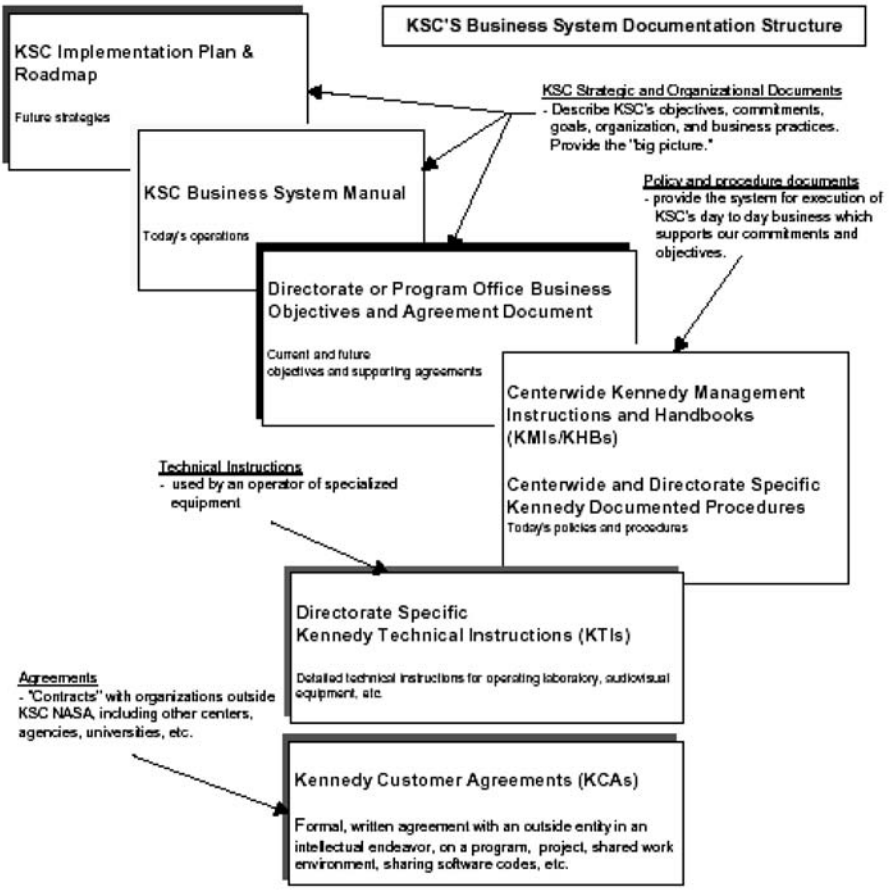

FIGURE 9.5 Description of KSC's business management system.

To address this focus area, KSC used the BOAs and the Goal–Performance–Evaluation System (GPES) to connect an individual's objectives with NASA's objectives. GPES is an automated tool to help a supervisor assign an individual's responsibilities, connect those responsibilities to higher-level objectives, and then roll up performance accomplishments into an annual plan. Figure 9.8 provides a description of GPES. KSC also used performance scorecards to define measures.

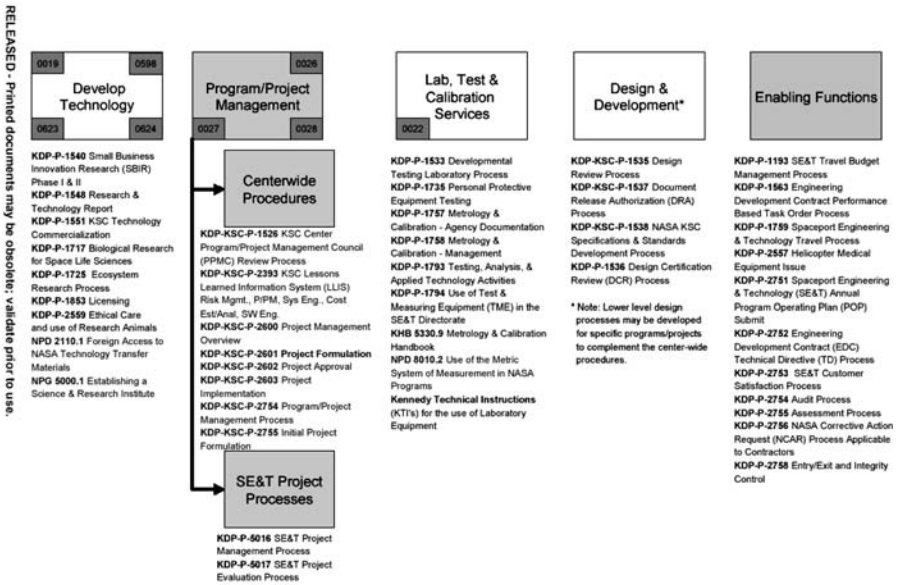

FIGURE 9.6 Example process map.

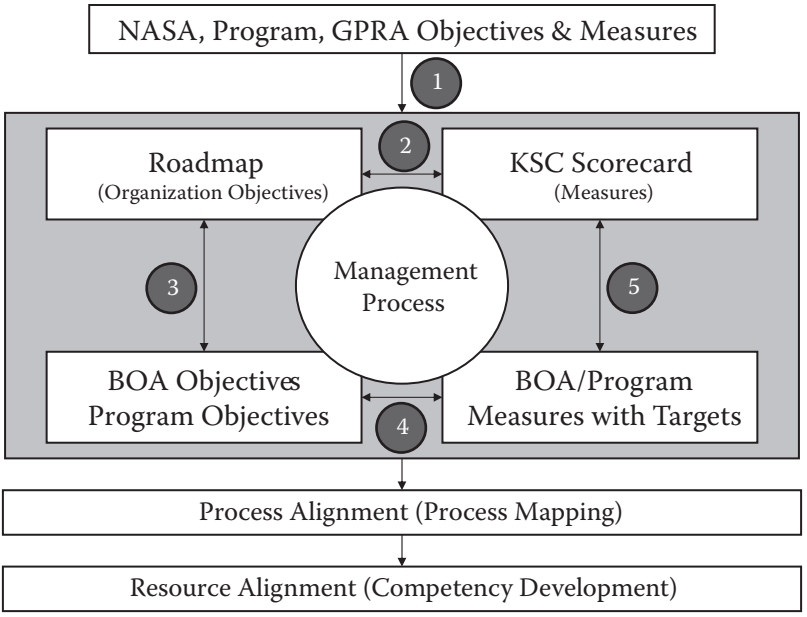

FIGURE 9.7 Aligning objectives and measures.

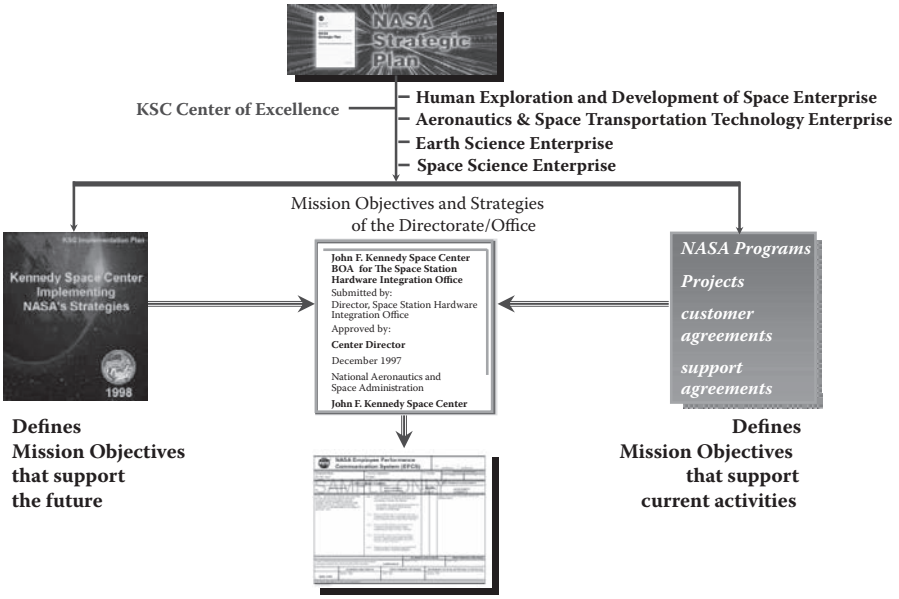

FIGURE 9.8 Using GPES, KSC linked individual performance plans to the Agency's strategic plan.

Summary of the Methods for Setting Strategy

To address these focus areas of implementation planning, KSC used a set of methods, including:

- Strategic roadmap (goals, objectives, and strategies)
- Business management system
- Measures/Scorecards
- BOAs
- KSC-wide initiatives
- Process maps
- GPES

Table 9.3 summarizes how these methods helped address the focus areas.

The intent of this section was to describe the implementation planning function. The implementation planning function was described by using its aim, questions, products, and focus areas. Once the potential projects and activities are defined by the organization, the organization needs to select and resource the efforts that it will implement.

DEPLOYING RESOURCES

Overview

Deploying resources is the process of allocating the organization's limited resources to the strategy. This allocation is made against the four types of activities defined in

TABLE 9.3
Summary of KSC Methods for Setting Strategy

	Method						
Focus Area	Strategic Roadmap	Business Management System	BOAs	Process Maps	KSC-Wide Initiatives	GPES	Scorecards
Converting the strategic intent into operational terms	✓	✓			✓	✓	✓
Aligning organizational roles		✓	✓	✓		✓	
Aligning objectives and measures			✓			✓	✓

the implementation planning function. In this section, we explore the aim, questions, products, and focus areas for deploying resources. Deploying resources is important because:

- The organization's resources are limited.
- Not all activities can be funded.
- Any expected outcome; to be achieved must have resourced activities to deliver the outcome; that is, an outcome cannot be expected to be achieved unless resources are assigned or deployed to it.

Deploying Resources Aim

The aim of deploying resources is to put the right resources on the right activities to move the organization forward with its strategy. The strategy process can absolutely fail in this step. If the organization does not explicitly devote resources and accountabilities to the strategy, the strategy will fail. Many times, organizations hold strategic offsites, define actions, and then fail to put the necessary resources on the strategy. Deploying resources is crucial to strategy — in fact, all four of the deployment functions are the linkages or breaking points of the strategy process.

As discussed in the strategic thinking section, the organization is using its resources to meet today's business while investing in activities to move it to the future. To accomplish these aims through deploying resources, a set of conversations needs to take place.

Deploying Resources Questions

To help select and resource the efforts, the management team needs to assess the efforts from an organization-wide perspective by asking questions. In this step, these strategic conversations or questions need to be addressed:

- What are the funded improvement ideas?
- What are the funded daily business efforts?
- How will we select and prioritize efforts?
- What are the criteria for selecting the efforts?
- What is the filter for selecting the efforts?

To answer these questions through deploying resources, a set of products is produced.

Deploying Resources Products

We can divide the products for deploying resources into products that are inputs to and outputs from deploying resources.

Inputs to deploying resources are (1) the set of potential efforts related to the daily work that must continue, (2) the set of potential improvement projects to pursue (i.e., the portfolio of potential improvement efforts), and (3) the set of criteria to evaluate the efforts. The output from this step is the set of resourced improvement projects and the daily work to execute. This step also defines the daily work that needs to be halted.

As discussed earlier, KSC used the BOA to document the normal, everyday work expectations. To facilitate the communication and gathering of improvement projects from across KSC, an organization within KSC developed the Kennedy Strategic Management System. More than 200 projects were submitted through this system. The implementation planning process provided the projects for KSC to execute in order to move the Center forward. KSC-wide projects were managed through direct communication with the KSC Director.

Deploying Resources Focus Areas

The organization will face many challenges when deploying resources. These challenges center on funding the strategy within a constrained resource environment. The deploying resources focus areas include:

- Selecting efforts
- Funding the investment to reach the vision

Selecting Efforts

The first focus area of deploying resources is selecting the right efforts to fund and deploy resources to. We can look at deploying resources from a funnel perspective. Coming into the funnel are the potential efforts from the implementation function. The size of the top of the funnel is driven by the number of projects or efforts. The size of the bottom of the funnel, and consequently, how many of the proposed initiatives get through the funnel, is based on the amount of resources that can be applied to the organization's strategy. As discussed in Chapter 5, the organization faces the challenge of balancing multiple responsibilities with limited

resources. Deploying resources is where this challenge comes to a head. As shown in Figure 5.2, the challenge in deploying resources is selecting the right portfolio of efforts across four areas:

1. Meeting the requirements of today's mission
2. Building the business — investing in areas to improve and change the business
3. Meeting the requirements of the evolving or new mission
4. Catering to crisis

As part of the selection process, the organization needs to find the resources to allocate to the efforts the organization chooses to implement.

For KSC, this focus area was evident each year as it defined and selected projects tied to its strategic roadmap. KSC worked on this focus area in three ways. The first was through its normal annual budgeting process. The second was through the selection of action items or major actions from each annual strategic management offsite. The third was through the "Top 40" technology projects. In this process, the research and development organization within KSC partnered with the operational programs (e.g., Shuttle, International Space Station) to define the technical development areas on which to focus. These potential research and development projects were defined, selected, and resourced through a formal process.

Funding the Investment to Reach the Vision

The second focus area of deploying resources is funding the investment to reach the vision. Because the organization is challenged to find the resources to invest in multiple areas, it needs to find "excess" capacity to invest in emerging areas. Excess capacity can be gained from stopping current activities. The organization needs to find the resources to fund the selected efforts. Without funding, the improvement efforts will not be implemented.

For KSC this challenge was evident each year. As described earlier, KSC's resources were constrained. To help invest in the future, KSC was able to create a "reinvestment fund" from savings it created from its new base operations contract with the U.S. Air Force. KSC used this reinvestment fund to move forward. KSC also had a KSC CD's discretionary fund. This fund was used to make investments to move KSC forward.

Summary of the Methods for Deploying Resources

To address these focus areas of deploying resources, KSC used a set of methods, including:

- Budget process
- Retreat action items
- Top 40 technology needs
- Reinvestment fund
- KSC CD discretionary fund

TABLE 9.4
Summary of KSC's Method for Deploying Resources

	Methods				
Focus Area	Budget Process	Retreat Actions Items	Top 40 Technology Needs	KSC Center Director Discretionary Funds	Reinvestment Fund
Selecting efforts	✓	✓	✓		
Funding the investment to reach the vision				✓	✓

Table 9.4 summarizes how these methods helped address the focus areas.

The intent of this section was to describe the deploy resources function. The deploy resources function was described by using its aim, questions, products, and focus areas. Once the potential projects and activities are selected and resourced, the organization needs to implement these efforts.

EXECUTING THE STRATEGY

Overview

Execution is carrying out the strategy and implementation plan. This process is "the means (activities and decisions) by which NASA produces outputs and outcomes for its customers" (NASA 1996, 5). Execution is where the "rubber meets the road" — meeting accountabilities for the strategy. One challenge is that everyday business activities will overrun efforts to execute the strategy of transforming the organization. In this section, we explore the aim, questions, products, and focus areas for executing the strategy.

Executing the Strategy Aim

The aim of execution is to deliver on the strategy and make it real by delivering on the efforts to close the gaps or delivering on the objectives defined earlier. As defined earlier, this aim is met through the execution of:

- The normal, day-to-day processes to administer today's business
- The improvement initiatives that cut across the organization — the big projects reflecting the projects into which the leader will put his/her energy
- The specific improvement initiatives each organization needs to take on as part of a corporate-wide initiative (e.g., involvement in ISO)
- The specific improvement initiatives each organization needs to take in relation to its specific responsibilities

To accomplish these aims through execution, a set of conversations needs to occur.

Executing the Strategy Questions

In this step, these strategic conversations or questions need to be addressed:

- What are the improvement initiative plans?
- What are the daily business plans?
- What do we need to accomplish?
- How do we ensure we meet expectations for products and services?
- How do we ensure we meet expectations for the improvement projects?
- How do we put the right resources on execution?
- How well are we accomplishing what we need to accomplish?

To answer these questions through execution, a set of products is produced.

Executing the Strategy Products

We can divide the products for deploying resources into products that are inputs to and outputs from executing the strategy.

The input products are the approved and resourced/funded efforts. The outputs from the execution are the specific products/services delivered from the efforts and the results or measures that describe how well the efforts were performed.

Executing the Strategy Focus Areas

In executing the strategy function, the organization will face many challenges. These challenges focus on driving accountability. The execution focus areas include:

- Aligning and delivering processes
- Delivering improvement projects

Aligning and Delivering Processes

The first focus area of execution is aligning the organization's processes to the strategy. Processes are the means by which the organization carries out and manages work. These processes need to be aligned to where the organization is going. The challenge is determining which processes to start, stop, and continue. For processes that will continue, there is a second set of decisions that needs to be made: whether the processes will continue as is, will be improved, or will be reengineered. By stopping or improving processes, the organization can find the resources necessary to invest in future activities.

At KSC, this focus area was evident in organization-wide efforts, as well as specific directorate efforts. KSC focused its organization-wide process alignment by using the ISO 9001 framework to define process flowcharts for all processes. For example, there were approximately 600 processes documented. Next, KSC used process-system maps to help connect or group individual processes within a directorate. At the center level, KSC developed a product/service map. This map helped describe how the processes and efforts across the operational directorates were related to the technology development efforts (Figure 2.9).

Delivering Improvement Projects

The second focus area of execution is delivering the improvement projects. During implementation planning and deploying resources, specific projects are funded to carry out the strategy. The organization faces the challenge of executing these projects. The day-to-day efforts of delivering today's mission and meeting the requirements of today's customers will often overrun these efforts. The organization must maintain focus on these projects and ensure that they are completed. Projects that build or improve the business are the lifeblood of the future of the organization.

At KSC, this focus area was evident when improvement projects were identified. If the projects were within a specific functional responsibility, KSC delivered the project through normal directorate responsibilities. If the effort required organization-wide support, KSC used cross-functional teams.

Summary of the Methods for Executing the Strategy

To address these execution focus areas, KSC used a set of methods, including:

- Process maps
- Project management plans

Table 9.5 summarizes how these methods helped address the focus areas.

The intent of this section was to describe the execution function. The execution function was described by using its aim, questions, products, and focus areas. Once the efforts are being implemented, the results from the efforts need to be measured and gathered to support performance evaluation.

DEPLOYING RESULTS

Overview

Deploying results is the process of gathering performance measurements from across the organization for an organization-wide performance evaluation. In deploying results, the organization is getting the results from the execution so that the management team can understand how well they are making the strategy real. In this section, we explore the aim, questions, products, and focus areas for deploying results.

TABLE 9.5
Summary of KSC's Methods for Executing the Strategy

	Method	
Challenge	**Process Maps**	**Project Management**
Aligning and delivering processes	✓	
Aligning and delivering projects		✓

Deploying Results Aim

The aims of deploying results are to gather the results for performance evaluation and to drive accountability for completing the efforts to meet the objectives. To accomplish these aims through deploying results a set of conversations needs to occur.

Deploying Results Questions

In this step, these strategic conversations or questions need to be addressed:

- What are we accomplishing on the improvement initiatives?
- What are we accomplishing on the daily business activities?
- How do we convert actions/efforts into results?
- How will we measure performance?
- How will we collect and analyze performance data?
- How do we share the results throughout the organization?

To answer these questions through deploying results, a set of products is produced.

Deploying Results Products

We can divide the products for deploying results into products that are inputs to and outputs from deploying results.

The input products are the results from the execution phase. These can be actions and measurable results. The outputs are the actual reports on the actions taken and results (e.g., standard formats for performance metrics).

Deploying Results Focus Areas

In deploying results, the organization will face many challenges. These challenges focus on understanding how well the strategy is being executed. The deploying results focus areas include:

- Measuring performance
- Rolling up results

Measuring Performance

Measuring performance is about collecting the performance data and converting it into information. The challenge is first determining what to measure and then how to get the measures. As we discussed earlier, measures are at the core of strategic management. When we translate the strategy into operational terms, we are defining the desired outcomes we want with the objectives and measures. In deploying the results, we are collecting the data to develop the measures. The challenge is ensuring that the measures are collected and analyzed for performance evaluation.

At KSC, this focus area was evident throughout its strategic evolution. To help address this focus area, KSC developed and used an organization-wide measurement

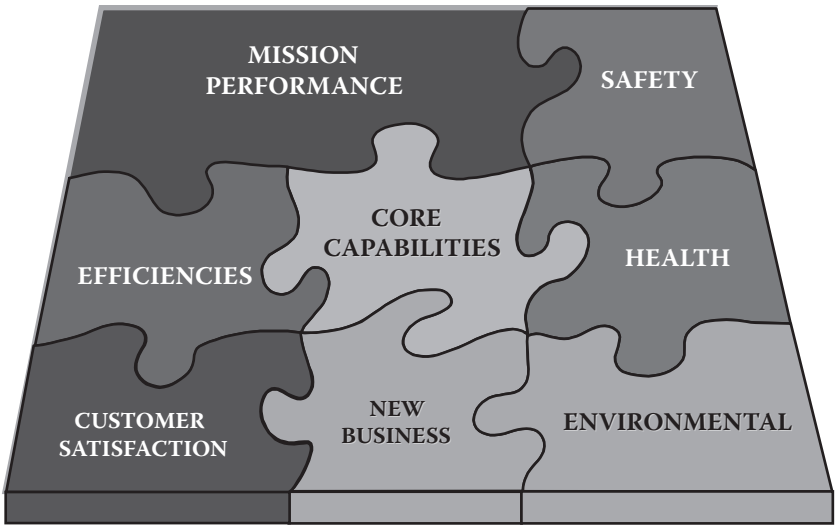

FIGURE 9.9 KSC's initial performance scorecard.

framework and a standard metric chart. For the performance measurement framework, it initially used a balanced scorecard (Kaplan and Norton, 1996) approach and then moved to a different framework more closely aligned to the description of its business. Figure 9.9 shows the original framework and Figure 9.10 shows the revised framework. Each of the measures within this framework was displayed using a standard metric format. Figure 9.11 describes the elements in this framework.

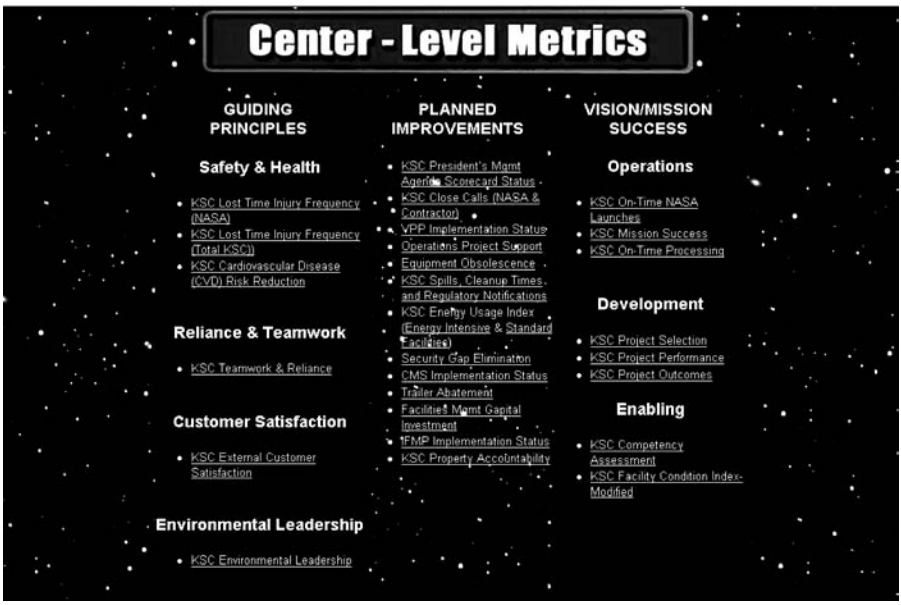

FIGURE 9.10 KSC's revised performance scorecard.

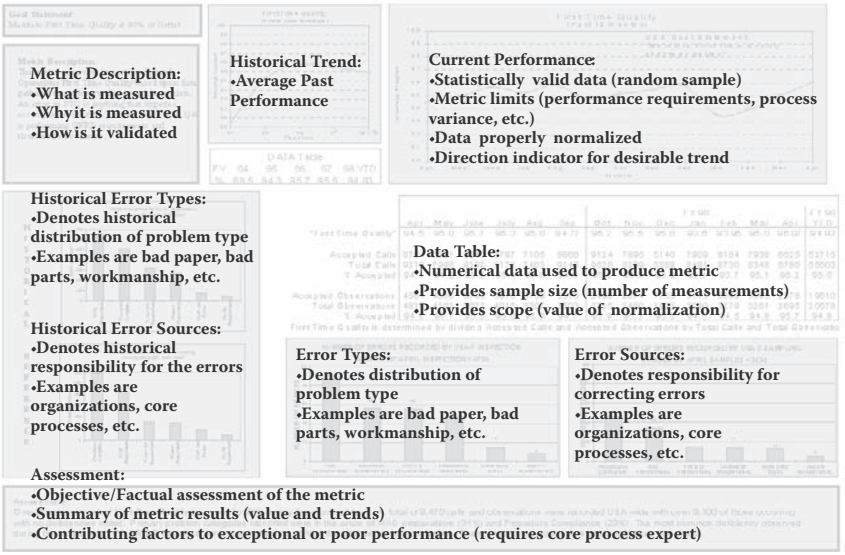

FIGURE 9.11 KSC's standard metric template.

Rolling Up Results

Once individual efforts have been measured, the second focus area is to roll up the results from individual efforts into overall organizational performance. The organization's performance and outcomes are a function of the integration of many actions. The organization needs to roll these individual outcomes into a higher-level perspective to gauge overall performance.

At KSC, this focus area was evident in tying individual performance plans to KSC's performance and KSC's contribution to NASA's plan. To help integrate results, KSC developed and deployed a GPES, which helped KSC develop a closed-loop system (Figure 9.12). This closed-loop system showed the requirements from NASA's plans down to the employee's performance plans. Actions and results were rolled into an integrated reporting structure.

Summary of the Methods for Deploying Results

To address these deploying results focus areas, KSC used a set of methods, including:

- Performance scorecards
- Standard metric chart
- GPES

Table 9.6 summarizes how these methods helped address the focus areas.

The intent of this section was to describe the deploy resources function. The deploy resources function was described by using its aim, questions, products, and focus areas. Once the efforts are being measured, the results need to be evaluated.

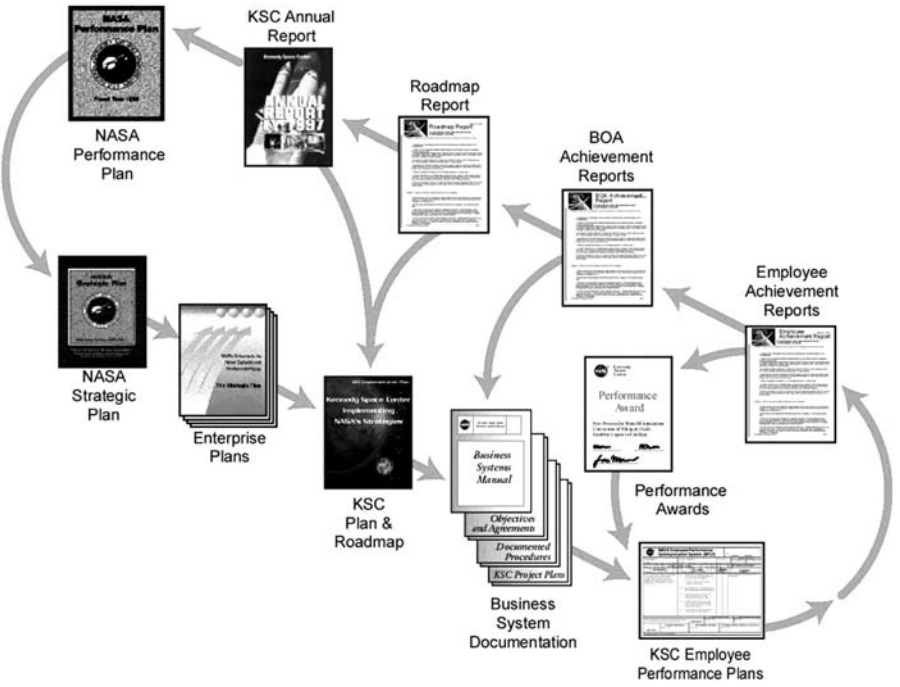

FIGURE 9.12 KSC's closed loop planning and results process.

TABLE 9.6
Summary of KSC's Methods for Deploying Results

	Method		
Focus Area	**Scorecards**	**GPES**	**Standard Metric Charts**
Measuring performance	✓	✓	✓
Roll-up performance		✓	✓

REVIEWING PERFORMANCE THROUGH PERFORMANCE EVALUATION

Overview

Performance evaluation is how the organization "measures whether the Agency achieved intended results as stated in its" plans (NASA, 1996, p. 5). Performance measurement and evaluation produces tangible results that can be studied to produce lessons learned and recommendations for improving the organization and adjusting the strategic plan. In this section, we explore the aim, questions, products, and focus areas for performance evaluation.

Performance Evaluation Aim

The aims of performance evaluation are (1) to understand how well the strategy is being achieved; (2) to understand where the areas for improvement are; (3) to identify lessons learned, and most importantly; (4) to drive accountability for achieving results. Without reviewing performance, accountability cannot be achieved — a necessary step for results is accountability and reviewing performance. To accomplish these aims through performance evaluation, a set of conversations needs to occur.

Performance Evaluation Questions

In this step, these strategic conversations or questions need to be addressed:

- How well are we accomplishing the improvement initiatives?
- How well are we accomplishing the daily business activities?
- How do we understand performance and the learnings from the results?
- How do we understand the true reasons for a performance gap?

To answer these questions through performance evaluation, a set of products is produced.

Performance Evaluation Products

We can divide the products for evaluating performance into products that are inputs to and outputs from evaluating performance.

Inputs are the original strategy and the performance measures that describe how well the strategy is being achieved. Outputs include the lessons learned, the items to be continued, and the opportunities for improvement.

Performance Evaluation Focus Areas

In evaluating performance, the organization will face many challenges. These challenges focus on understanding what the results mean to the organization and strategy. The performance evaluation focus areas include:

- Reviewing performance
- Understanding performance gaps

Reviewing Performance

This first focus area is an obvious one, but the one most often forgotten. The strategy and results need to be evaluated. The organization must make the time, energy, and environment available to conduct the reviews. The reviews are a meeting in which basic questions are asked and answered using the measures developed and shared in the deploying results stage. However, the right environment for conducting the performance evaluations must be created.

To review performance, KSC implemented an "Executive Management Council" as part of its business management system. To further support performance evaluation, KSC used the standard metric chart discussed earlier. It also used an external auditor to provide an outside view to evaluate its management process.

Understanding Performance Gaps

Given that progress has been measured and a meeting has been conducted to review the performance, the organization needs to be able to get to the root cause of any performance gaps. However, the learning required to identify the true root cause may not happen. The challenge for the management team is to ensure that the learning loop is completed and not abandoned.

KSC worked to ensure performance gaps were understood. Some of the much-needed conversations about the organization were difficult to conduct in a large group setting. Many of these conversations were held with just a few individuals.

Summary of the Methods for Reviewing Performance

To address these performance evaluation focus areas, KSC used a set of methods, including:

- Measures/standard metric charts
- Executive Management Council meetings
- External auditor

Table 9.7 summarizes how these methods helped address the focus areas.

The intent of this section was to describe the performance evaluation function. The performance evaluation function was described by using its aim, questions, products, and focus areas. Once the performance is evaluated, the results from the evaluation need to be shared with and used by the organization.

TABLE 9.7
Summary of KSC's Methods for Performance Evaluation

	Method		
Focus Area	Standard Metric Charts	Executive Management Council	External Auditor
Reviewing performance	✓	✓	✓
Understanding performance gaps	✓	✓	✓

DEPLOYING LEARNINGS

Overview

Deploying learnings is the process of sharing the results (i.e., decisions) from performance evaluation to continue to drive the strategy throughout the organization. In this section, we explore the aim, questions, products, and focus areas for deploying learnings.

Deploying Learnings Aim

The aim of deploying learnings is to close the loop of the strategy process and support further execution and adjustment of the strategy.

Deploying Learnings Questions

In this step, these strategic conversations or questions need to be addressed:

- What changes to the daily business do we need to make?
- What changes to the improvement initiatives do we need to make?
- How do we share learnings throughout the organization?
- How do we use the learnings to reinforce or stop efforts?

To answer these questions through deploying learnings, a set of products is produced.

Deploying Learnings Products

We can divide the products for deploying learnings into products that are inputs to and outputs from deploying learning.

Inputs are the findings and decisions from the performance evaluation. Outputs are the best practices to share and institutionalize throughout the organization, and the opportunities for improvement. To accomplish these aims through deploying learnings, a set of conversations needs to occur.

Focus Areas for Deploying Learnings

In deploying learnings, the organization will face many challenges. These challenges focus on adjusting the strategy. The deploying learnings focus areas include:

- Institutionalizing best practices
- "Killing" nonperforming projects

Institutionalizing Best Practices

As the organization tries new approaches and implements new projects to move forward, some of them will produce positive results. The organization needs to identify these internal best practices and institutionalize the new methods. The organization

is growing to the future, therefore it needs to share the seeds that are fostering this growth. The challenge is identifying and institutionalizing these best practices.

To help address this focus area, KSC used its Executive Management Council to share macro decisions and best practices. Other decisions were incorporated into business processes and shared informally through direct employee communication. Best practices were further highlighted through the reward system (e.g., Gold Dollar and Silver Dollar Awards).

"Killing" Nonperforming Projects

The second focus area of deploying learning is "killing" nonperforming projects. As with best practices, the organization is trying new methods. Not all efforts will meet performance requirements. The organization needs to decide to stop these actions. As other authors have discussed (Royer, 2003), stopping projects is not always completed. The organization needs to stop these projects and reinvest the resources into other efforts. Strategy is a learning process and adjusting the strategy by stopping some items is just as important as starting new ones.

Within KSC, nonperforming projects tended to "die a natural death" through the lack of funding in the annual budget process; that is, nonperforming projects were eliminated by slowly reducing resources over time. During the deploying resources stage, the resources were not supplied.

Summary of the Methods for Deploying Learnings

To address these deploying learnings focus areas, KSC used a set of methods, including:

- Executive Management Council meetings
- Not funding the effort in the budget process

Table 9.8 summarizes how these methods helped address the focus areas.

The intent of this section was to describe the deploy learnings function. The deploy learnings function was described by using its aim, questions, products, and focus areas. Once the learnings are shared, the organization needs to implement these learnings in the next round of strategic and implementation planning functions. This last function closes the loop of the cyclic strategic management process.

TABLE 9.8
Summary of the KSC Methods for Deploying Learnings

	Method	
Focus Area	**Executive Management Council**	**Budgeting Process**
Institutionalizing best practices	✓	✓
"Killing" nonperforming projects	✓	✓

HOW IS THE STRATEGIC MANAGEMENT PROCESS RELATED TO THE TRANSFORMATION PATH?

The connection between the transformation path and the strategic management process is shown in Figure 9.13. In the transformation path, the organization continuously sets strategy (strategic planning) and makes the strategy a reality (deploy strategic direction through deploying learnings). The eight steps of the strategic management process provide the means to continuously set and make strategy a reality.

This simple graphic highlights important observations:

- You cannot make strategy a reality without having a strategy — you must first set a strategy.
- If you have a bad strategy, you will have bad implementation.
- Setting strategy is just one step.
- The energy is in making the strategy a reality.

The previous eight sections defined each of the eight functions of the strategic management process.

FIGURE 9.13 The strategic management process implements the transformation path.

CHAPTER CLOSURE

This chapter answered the seventh question, "What is a systematic process to manage your transformation strategy?" This chapter introduced the role of the strategic management process in making a transformation a reality.

EYE ON THE LITERATURE

These sources can be useful to help you further understand strategy and organizational transformations:

- *Planning and Measurement in Your Organization of the Future* by D. Scott Sink and Thomas Tuttle
- *The Strategy Focused Organization* by Robert S. Kaplan and David P. Norton
- *Beyond Strategic Vision* by Michael Cowley and Ellen Domb
- *Team-Based Strategic Planning* by C. Davis Fogg
- *Scenario Planning: Managing for the Future* by Gill Ringland
- *The Rise and Fall of Strategic Planning* by Henry Mintzberg
- *Building a Shared Vision* by C. Patrick Lewis
- *The Art of the Long View* by Peter Schwartz
- *Hoshin Kanri* by Yoji Akao
- *The Art of Framing* by Gail T. Fairhurst and Robert A. Sarr
- *Storytelling in Organizations* by John Seely Brown, Stephen Denning, Kataline Groh, and Laurence Prusak
- *The Story Factor* by Annette Simmons
- *Smart Thinking for Crazy Times* by Ian Mitroff
- *Don't Jump to Solutions* by William B. Rouse
- *Smart Choices* by John S. Hammind, Ralph L. Keeney, and Howard Raiffa
- *Keeping Score* by Mark Graham Brown
- *Performance Scorecards* by Richard Y. Chang and Mark W. Morgan
- *Improving Performance* by Geary A. Rummler and Alan P. Brache
- *Organizational Learning: A Theory of Action Perspective* by Chris Argyris and Donald A. Schon
- *The Knowing-Doing Gap* by Jeffrey Pfeffer and Robert Sutton

ORGANIZATIONAL SELF-APPLICATION TASKS

Table 9.9 provides a summary of a set of questions to ask to better understand the applicability of the concepts presented in this chapter. You can use these questions to determine your organization's needs and practices for strategic management.

TABLE 9.9
Summary of Self-Application Tasks

Strategic Management Function	Questions
Core of strategic management	• How well are we having open, honest conversations? • How well is our strategy defined and understood? • How well are we using measures?
Set strategic intent	• What is our current strategy? • What are our current strategic products? • Why do we need to set strategy? • Who do we want to involve in the strategy-setting process? • What specific strategic questions do we need to focus on? • How well are we learning from our past, present, and future? • How well are we seeing changes in our external environment? • How well are we understanding the issues facing the organization? • How well are we converting our strategic conversations to decisions and actions?
Deploy the strategic intent	• What is right with our strategy? • What do we need to be aware of? • Who are the intended audiences for our strategic intent message? • What is the purpose of our message? • What is the message? • What are the different approaches for sharing our message? • How are we sharing the message throughout the organization? • How are we understanding the organization's concerns with the strategic intent?
Set strategy	• What are the potential improvement ideas? • What are the potential daily business efforts? • How do we convert our strategic intent to specific actions? • How do we get our employees to see their roles in the strategic intent? • How do we get our employees to set specific performance expectations? • How do we define actions to move the organization forward? • How do we convert the strategic direction to operational terms? • How do we align organizational roles to the strategic intent? • How do we align objectives and measures?
Deploy resources	• What are the funded improvement ideas? • What are the funded daily business efforts? • How will we select and prioritize efforts? • What are the criteria for selecting the efforts? • What is the filter for selecting the efforts? • How will we select our efforts? • How will we fund our efforts?

TABLE 9.9 (CONTINUED)
Summary of Self-Application Tasks

Strategic Management Function	Questions
Execute the strategy	• What are the improvement initiative plans? • What are the daily business plans? • What do we need to accomplish? • How do we ensure that we meet expectations for products and services? • How do we ensure that we meet expectations for the improvement projects? • How well are we accomplishing what we need to accomplish? • How do we put the right resources on execution? • How will we align and deliver our processes? • How will we deliver the improvement projects?
Deploy results	• What are we accomplishing on the improvement initiatives? • What are we accomplishing on the daily business activities? • How do we convert actions/efforts to results? • How will we measure performance? • How will we collect and analyze performance data? • How do we share the results throughout the organization? • How well are we measuring performance? • How well are we rolling up performance?
Review performance	• How well are we accomplishing the improvement initiatives? • How well are we accomplishing the daily business activities? • How well do we understand performance and the learnings from the results? • How well do we understand the true reasons for a performance gap? • How will we review performance? • How will we understand the performance gaps?
Deploy learnings	• What changes to the daily business do we need to make? • What changes to the improvement initiatives do we need to make? • How do we share learnings throughout the organization? • How do we use the learnings to reinforce or stop efforts? • How will we institutionalize best practices? • How will we kill nonperforming projects?

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Section III

Introduction to Section III — Connecting the Dots

In this final section and chapter, we reconnect the dots from the lessons learned. A final set of questions are offered to help you think about how to transform your organization.

10 Connecting the Dots

This chapter connects the dots of the topics covered in this book. To connect the dots, we will connect:

1. The transformation questions, lessons learned, and models developed to share the concepts
2. The strategic response to transformation, transformation challenges, and leadership roles
3. Lessons learned, strategies, and methods

We end this chapter and book with the identification of the final choice a leader needs to make.

CONNECT THE TRANSFORMATION QUESTIONS, LESSONS LEARNED, AND MODELS

The book set out to answer seven transformation questions:

1. Why does an organization need to transform?
2. What is a transformation?
3. What challenges does a transformation create?
4. How can you respond to the transformation and its challenges?
5. What are your leadership roles in a transformation?
6. What principles can help guide your strategic thinking?
7. What is a systematic process to manage your transformation strategy?

To answer these questions, I provided a summary of the lessons learned from Kennedy Space Center (KSC). The lessons about organizational transformation and strategy are gleaned from KSC's experience in transforming itself in the period 1995–2002. These lessons learned are offered as gleaned learnings, not the "silver bullet" answer to organizational transformations. These lessons learned were developed by understanding what worked and did not work. The lessons learned are reconnected to the visuals used to describe the transformation situation you are or might be facing.

CONNECT THE STRATEGIC RESPONSE TO TRANSFORMATION, TRANSFORMATION CHALLENGES AND LEADERSHIP ROLES

Table 10.1 summarizes how the strategic response elements help address the challenges a transformation creates and the roles a leader must play to address these challenges. A strategic response to the transformation has four focus areas:

TABLE 10.1
Strategic Transformation Path Elements Help the Leader Transform the Business

		Strategic Transformation Path Focus Areas			
		Execute Today's Business	Continuously Set Strategy	Make the Strategy Real	Enable the Transformation
Transform the business model	• Recognize the need to change		✓		
	• Position and align the organization	✓	✓	✓	
Transformation challenges	• Develop a new business model concept		✓		
	• Develop a business model implementation strategy		✓		
	• Provide the enablers for successful implementation				✓
	• Balance multiple responsibilities				✓
	• Hold individuals accountable				✓
Leadership roles	• Involve the team in strategy				✓
	• Provide a vision for the future		✓		
	• Chart a course to the future		✓		
	• Implement rational decisions and actions			✓	
	• Create an environment for strategy				✓
	• Demonstrate commitment	✓	✓	✓	✓

1. Execute today's business
2. Continuously set strategy
3. Make the strategy real
4. Enable the transformation

By implementing the first three items of the strategic transformation path areas, we are transforming the business model. We need to execute today's business as we position and align the organization for the future. Continuously setting strategy creates the sense of urgency and recognition of the need to change. Setting strategy defines how we need to position and realign the organization. Make the strategy real is the set of actions to position and align the organization.

The four strategic transformation path focus areas help the leader overcome the transformation challenges. Continuously setting strategy helps an organization develop a new business model concept and the business model implementation strategy. Enabling the transformation is how the organization and the leader create the environment for successful implementation, balance multiple responsibilities, and hold individuals accountable.

The four strategic transformation path focus areas provide the means for the leader to play six roles. Continuously setting strategy is the mechanism for the leader to provide a vision of the future and chart a course to the future. Setting strategy for the future also demonstrates the leader's commitment to the organization. If the leader is not committed to the long-term health of the organization, this will not set the strategy. Make the strategy real is how the leader makes rational decisions and actions. Again, by making the strategy real, the leader is demonstrating commitment to the future. Enabling the transformation helps the leader focus on creating the environment for strategy and demonstrating commitment to the organization.

CONNECT LESSONS LEARNED, STRATEGIES, AND METHODS

Figure 10.1 provides a summary of the strategies and methods shared in this book. The strategies a leader can use to respond to the transformation and transformation challenges include:

- The strategic response to implement the strategic transformation path across the four phases
- Six leadership roles
- Six strategic thinking principles
- The eight steps of the strategic management process

The methods are the tools KSC used to implement these strategies.

THE FINAL CHOICE FOR THE LEADER

To help you lead and manage your own transformation, I have identified a set of leadership questions (Figure 10.2). These questions are related to each part of

Lesson Learned 1: The need for a transformation is caused by our current business model being irrelevant, unresponsive, and unready—we are not producing the right product the right way.

Lesson Learned 2: A transformation is the purposeful, intentional, consistent change of an organization's business model over time.

Lesson Learned 3: The organization will face five challenges when transforming.

Strategies

Lesson Learned 4	Lesson Learned 5	Lesson Learned 6	Lesson Learned 7
A strategic response focuses on implementing a strategic transformation path while navigating four phases of a transformation.	Leaders play six roles in the transformation.	Six strategic thinking principles can help guide your thinking—the leader must connect the dots.	We manage the transformation challenges, implement the strategic response, and implement the leadership roles through the strategic management process.

Methods

Strategic Set Intent	Deploy Strategic Intent	Set Strategy	Deploy Resources	Execute the Strategy	Deploy Results	Review Performance	Deploy Learnings
• Senior management strategic offsites • Weekly strategic conversations • Strategic thinking methods (e.g., scenarios) • Organizational assessments • Strategic intent products (e.g., strategic roadmap)	• Rollouts/all-hands meetings • Feedback from the rollouts • Strategic plan document • Visual sharing products • CD Comms	• Strategic roadmap (goals, objectives, and strategies) • Business management system • Measures/Score-cards • BOAs • KSC-wide initiatives • Process maps • GPES	• Budget process • Retreat action items • Top 40 technology needs • KSC Center Director discretionary fund • Reinvestment fund	• Process maps • Project management plans	• Performance scorecards • GPES • Standard metric chart	• Measures/standard metric charts • Executive Management Council meetings • External auditor	• Executive Management Council meetings • Not funding the effort in the budget process

Open, honest conversations	Strategy	Measures
• Strategic offsites • Strategic Friday's	• Roadmap • From-to chart	• Balanced scorecard • Metric charts

FIGURE 10.1 Summary of strategies and methods.

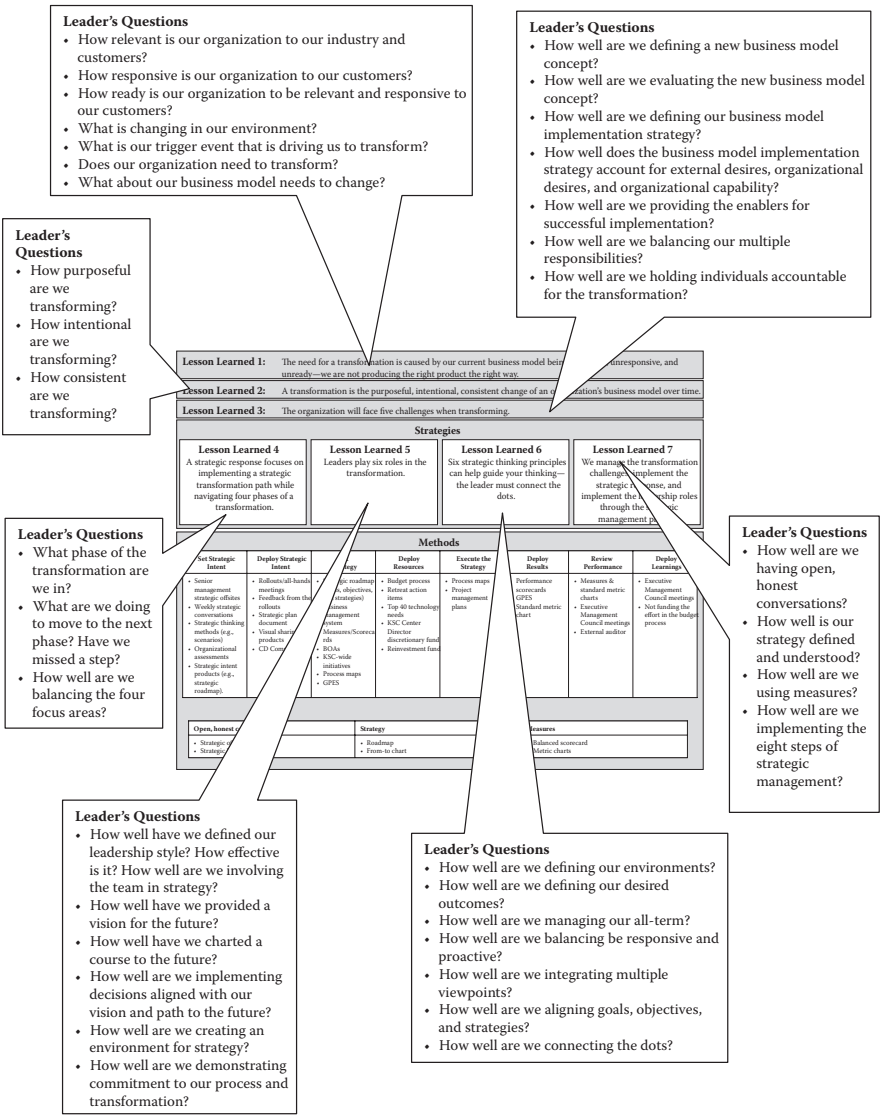

FIGURE 10.2 Strategic questions help the leader transform the business.

the overall model and lessons learned from the KSC experience. Developing the answers to the questions in open, honest conversations within your management team will help:

- Build a shared understanding
- Guide specific decisions and actions
- Provide some of the messages you need to share with your workforce

It is now up to you.

- You have the choice on how you want to think about and implement your organization's transformation.
- This first choice is making the decision to take the transformation on and take purposeful, intentional, consistent action.

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Manufacturing and Industrial Engineering

TRANSFORMING ORGANIZATIONS

Strategies and Methods

1. Why does an organization need to transform?
2. What is a transformation?
3. What challenges does a transformation create?
4. How can you respond to the transformation and its challenges?
5. What are your leadership roles in a transformation?
6. What principles can help guide your strategic thinking?
7. What is a systematic process to manage your transformation strategy?

Pursuing excellence while doing more with less is a common theme driving organizational transformations. So, how do you make this work? You need a framework, a roadmap for transforming organizations to a higher level of performance. **Transforming Organizations: Strategies and Methods** supplies this framework, addressing the seven common questions related to an organizational transformation. Based on lessons learned during the Kennedy Space Center (KSC) transformation from 1995 to 2003, the book does not provide silver-bullet methods, but rather an understanding of what did and did not work. It then explores how to apply that understanding to the transformation of virtually any organization.

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CRC Press
Taylor & Francis Group
an informa business
www.crcpress.com

6000 Broken Sound Parkway, NW
Suite 300, Boca Raton, FL 33487
270 Madison Avenue
New York, NY 10016
2 Park Square, Milton Park
Abingdon, Oxon OX14 4RN, UK

K10297
ISBN: 978-1-4398-0574-9
90000
9 781439 805749