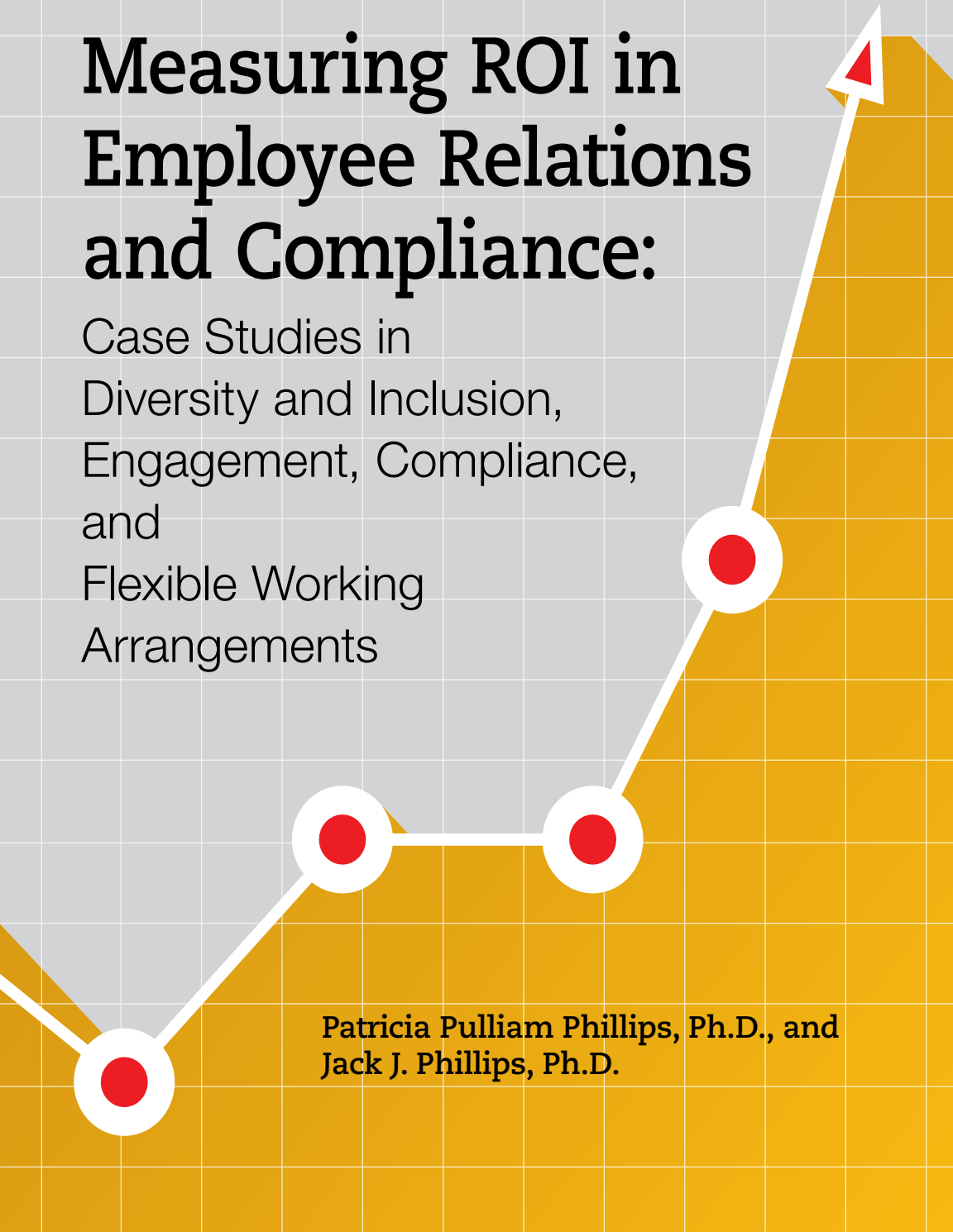
Measuring
ROI Series

Measuring ROI in Employee Relations and Compliance:

Case Studies in Diversity and Inclusion, Engagement, Compliance, and Flexible Working Arrangements



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Chapter 3.
Measuring ROI in a Diversity Management Program:
Prudential Financial

By Dr. Edward E. Hubbard, Emilio Egea, and Ignace Conic

For many years, achieving diversity results has been a key component of Prudential Financial's business strategy. Recently, senior leaders decided that Prudential Financial needed a strong diversity measurement process—a mechanism that would include objectives for profile representation, environment, and diversity leadership. For the purpose of this case study, we will focus on diversity leadership and the impact it has had on achieving established objectives and embedding diversity firmly into the fabric of our business.

Background

Prudential Financial's diversity efforts grew out of a recognized need for change as determined by both external and internal indicators. Like other companies, Prudential Financial began to study the impact of the marketplace and changing workforce demographics on its employee population and customer base. Reports projecting the increase in women and people of color entering the workforce, the population growth of ethnic minorities in the United States, and the

impact of a growing global economy forced us to think and respond more effectively to workplace diversity. Internally, the need for change was highlighted by employee surveys and focus groups indicating that Prudential scored below external benchmark data on key business and people drivers such as "communication" and "teamwork." There was also a growing gap on key survey items when comparing responses by demographic categories, specifically race, rank, and gender. Results indicated that people of color, women, and nonmanagement employees experienced lower satisfaction levels than their leadership and management counterparts.

Sample survey items included the following statements:

1. My supervisor works effectively with individuals who are different from himself or herself.
2. My workgroup has a climate in which diverse perspectives are valued.
3. Senior management demonstrates its support for diversity by its actions and behaviors.

Prudential management made a decision to close those gaps and increase overall employee satisfaction across the board. Based on these concerns, Prudential enacted several steps to improve the workplace environment and increase its focus on diversity.

Prudential has worked on diversity-related items for about 30 years. In the 1990s, Prudential's human resources rolled out a managing diversity program to executives and all levels of management. Management sponsored a diversity roundtable with the CEO, which led to the development of a diversity reinforcement tool, diversity guide for vendors and consultants, and diversity skills training through a "Diversity at Work" series.

In addition to adding diversity metrics to its annual business scorecard, Prudential incorporated a nondiscrimination clause based on sexual orientation into its policy statement. Four years later, Prudential launched a work/life balance initiative and named a chief diversity officer for the company. Under his leadership, Prudential enacted the company's most significant change to date by shifting the focus of diversity

from one driven by activities to one driven by outcomes. Highlights of the new strategy included the following:

- The formation of a senior diversity council producing direct reports to the chairman.
- The inclusion of diversity results in business group scorecards (used in bonus plans).
- Engaging an external consultant, Hubbard and Hubbard Inc., to assist in the development of diversity metrics, training, and contacts in all of Prudential's major businesses.

To make the new strategy work, Prudential has and continues to integrate diversity into key business and HR processes, and Prudential leadership continues to exhibit behaviors that demonstrate a strong organizational and personal commitment to diversity. Prudential Financial views diversity as a strategic imperative that seeks to leverage our differences as well as our similarities—not only the obvious ones such as race and gender, but also our rich and varied experiences and our divergent points of view.

Organizational Profile

Prudential Financial companies, which have been in business for more than 125 years, hold approximately $580 billion in total assets under management and administration. These companies serve individual and institutional customers worldwide and include The Prudential Insurance Company of America, one of the largest life insurance companies in the United States. These companies offer a variety of products and services, including life insurance, property and casualty insurance, mutual funds, annuities, pension and retirement-related services and administration, asset management, securities brokerage, banking and trust services, real estate brokerage franchises, and relocation services. Prudential Financial became a publically traded company in December 2001, operating in challenging economic conditions. Since August 2002, Prudential Financial has been organized into four major businesses (Prudential Investment Division, Prudential Insurance Division, Prudential International Investments, and Insurance Division) and

five corporate functions (Financial Management; Global Marketing Communications; Law, Compliance, and Business Ethics; Corporate Human Resources; and Corporate Operations and Systems). To provide excellent shareholder value, Prudential Financial has expanded into newly targeted geographic and demographic markets. For example, in 2000 and 2001, Prudential Financial participated in 20 mergers and acquisitions, half domestic and half international. In this globalized environment, Prudential Financial has made incremental progress toward achieving world-class status regarding racial, ethnic, and gender parity in its workforce. Prudential accomplished these goals while executing a new business model with a continued focus on expense management.

Key Players and Components

Senior leaders of Prudential Financial form the cornerstone of a successful diversity strategy. Leadership, known as the policy committee, consists of the U.S.-based executives who report directly to the chairman. The chief diversity officer (also the head of the equal opportunity unit), engaged the policy committee in meaningful dialogue on diversity within the company. As a result of these discussions, they agreed to do the following:

- Be proactive by personally determining the areas of diversity measurement in profile representation, environment, and leadership.
- Increase accountability for results, and incorporate related metrics into business group scorecards, which contained an overall HR impact on management's bonuses, 10 percent of which related to diversity representation and leadership.
- Become world class by identifying and aspiring to external benchmarks (that is, *Fortune* magazine's Top 50 Companies for People of Color).

Key players in this process included Michele Darling, then Prudential's executive vice president of human resources. Michele remained a strong advocate for diversity and provided the company's chief diversity officer with access and opportunity to engage the senior

team in its progress. Having the endorsement and support of a valued member of the senior leadership team was critical to the success of the strategy and metrics.

Prudential Financial's CEO acted as another key player in the process. He demonstrated by his actions and behaviors that diversity is an important part of Prudential's business. He has a proven record of recognizing and rewarding diversity advocates for the past three years.

The CEO has demonstrated that he takes diversity results seriously by incorporating feedback from the chief diversity officer into the performance appraisals in his direct reports to the chairman. As Prudential rapidly built its diversity strategy and metrics, the company was fortunate to attend a Working Women's Conference at which Dr. Edward Hubbard, president and CEO of Hubbard and Hubbard, Inc., presented a workshop entitled "Numerical, Qualitative and Financial Strategies for Building Measurable Diversity Programs." Following that session, the chief diversity officer became interested in engaging Hubbard and Hubbard to support Prudential in its diversity metrics-building efforts. We attended his course "Measuring Diversity Results," which led to a consulting relationship that has been strong ever since. This relationship was integral to the development and implementation of our metrics; it also enabled the training of additional principal players and the development of tools to assist them.

Finally, Prudential deployed the diversity strategy throughout the organization by using diversity contacts. Each business group's HR leader designated a specific contact who worked to meet benchmarks and report progress to the EO/diversity unit. As each group built tools, group members trained to use them and share them with other members of the business group who had a need to know. The successful implementation of the diversity strategy hinged on the diversity contacts and our ability to transfer knowledge, skills, and abilities in this area.

Key Issues and Events

Prior to the appointment of a new chief diversity officer (CDO) to head the company's diversity efforts, the diversity organization

consisted of one diversity consultant. Like most companies, awareness training was its focus in the 1980s, followed by an "activity-based" approach through the 1990s. Prudential management understood the need to demonstrate commitment to diversity by engaging in activities like attending minority career fairs, recruiting at historically black colleges and universities, and building relationships with organizations for people of color. Prudential Financial's diversity metrics consisted of an activities checklist to track participation in events of this type.

The chief diversity officer created a strategy that shifted the focus from activities to substantive outcomes. In doing so, it became necessary to develop an accountability model that had at its core strong leadership in diversity. We called it the Diversity Excellence Model, and it included Profile Representation, Environment, and Leadership. Under leadership, we expected to see active participation, commitment, role modeling of appropriate behaviors, and the removal of obstacles for all employees, including women and people of color. The integration of diversity requirements into business and HR processes and increased accountability for outcomes served as the keys to Prudential Financial's approach.

When diversity became a component of business group performance scorecards, the accountability and focus shifted dramatically. Diversity was no longer considered only an HR responsibility, but one that was shared by the entire senior leadership team. The EO/diversity staff, which consists of two full-time staff and the chief diversity officer, who also has responsibility for equal opportunity programs, presented on the business case for diversity, developed metrics, created tools, and trained contacts in each business group to adequately provide support to their respective business.

To support HR in this process, Prudential Financial engaged the services of Hubbard and Hubbard Consulting and spent several full-day sessions building and creating diversity metrics tools. The company intended for these intensive sessions to build the foundation of the metrics and develop training for the diversity contacts. After developing the metrics, Hubbard and Hubbard met with each of the business group HR leaders. We discussed the metrics and shared our plans for

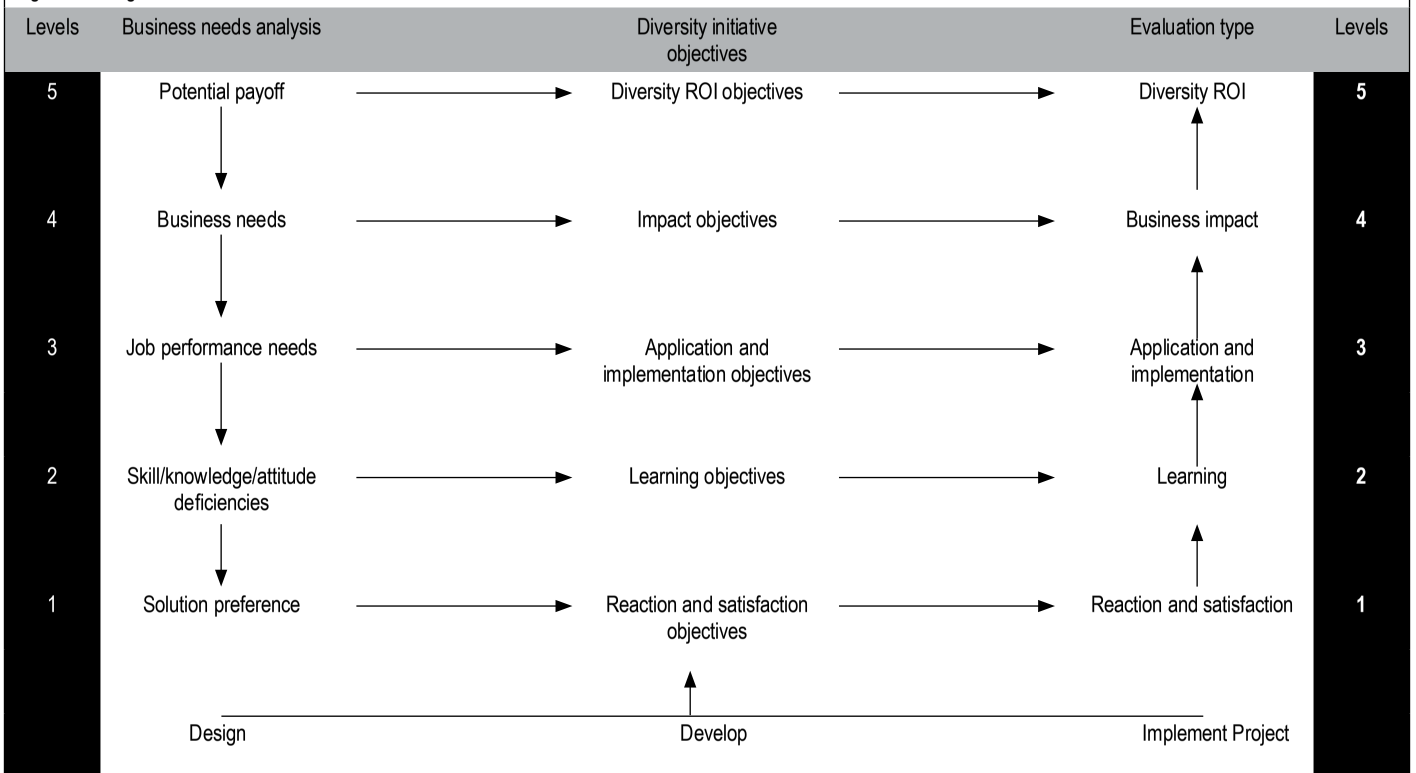
implementing the diversity strategy across the company. We enlisted their support in providing appropriate contacts within the business group and in delivering diversity messages to senior business leaders. Following these meetings, the senior HR leaders named a diversity contact for their respective group. Diversity contacts continue to play a key role in reaching Prudential's diversity objectives. The next step involved training development for the contacts. The diversity scorecard training was designed to provide a comprehensive overview of diversity measurement. The course content included a discussion on affirmative action as the foundation for diversity, and the consultants presented information to support the business case for diversity. Participants also learned about the specific components of diversity measurement for the business group scorecards with respect to profile representation, environment, and leadership. As part of the curriculum, the consultants introduced and discussed in detail tools to support the measurement process.

A key diversity profile retention initiative evaluation process, based on the scorecard training, was built using the following framework:

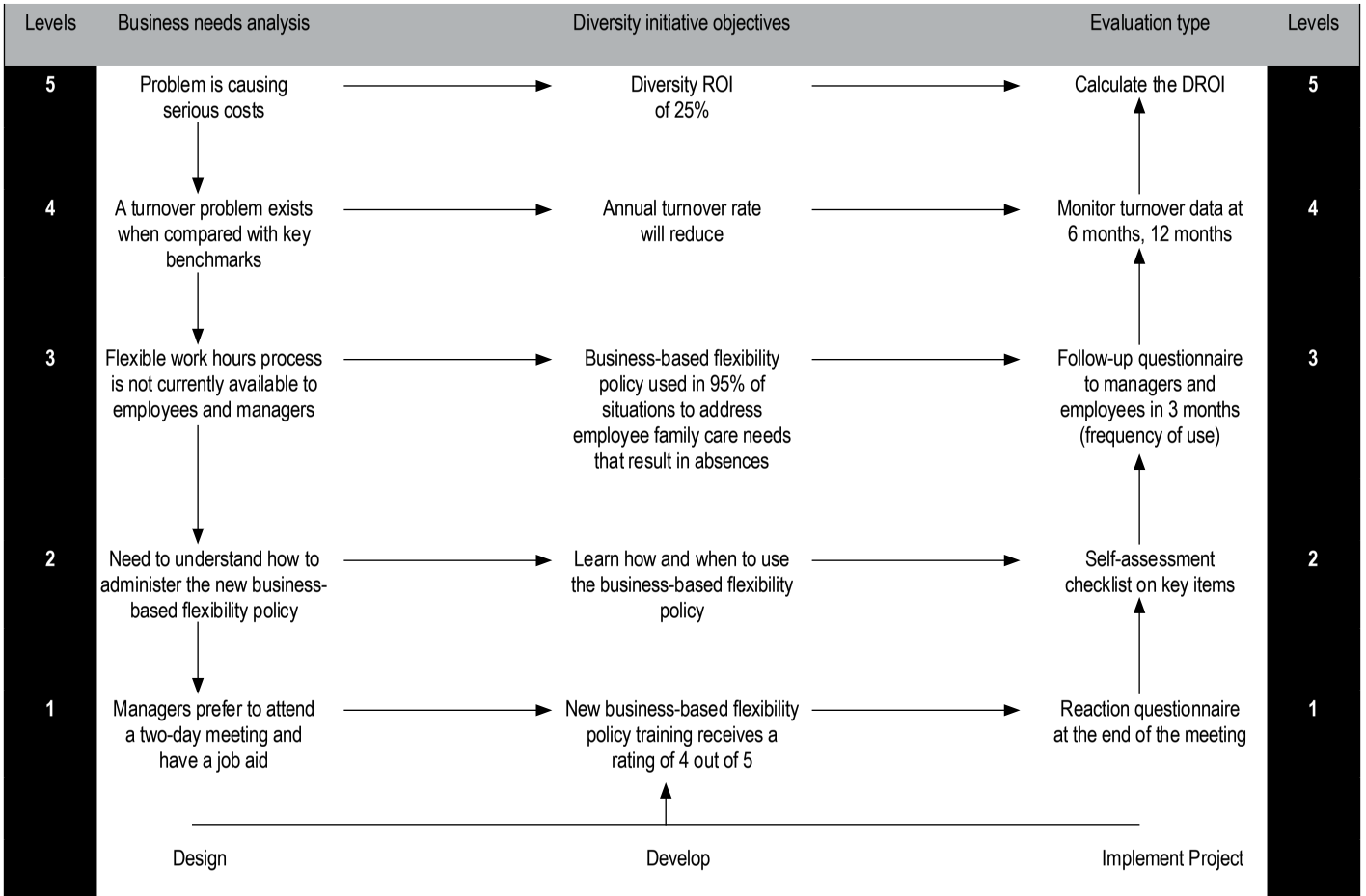
The consultants delivered the course over a two-day period. The course design included modules that built on each other toward a business simulation exercise. During the simulation, participants used data and tools to conduct analyses of diversity results and prepare action plans for improvement. The consultants trained approximately 40 HR professionals, including representatives from each of Prudential's businesses and corporate functions.

The final stage of implementation involved reviews with the senior business leaders. These leaders held meetings with the business group leader and HR vice president. The chief diversity officer and members of his team participated in the sessions. The agenda for the meeting included an update on the diversity scorecard results for profile representation, environment, and diversity leadership. The leadership team presented an analysis of recommendations to improve results and discussed the future focus of the diversity strategy. The meeting concluded with a review of the details of the year-end assessment process,

Figure 3.1. Alignment Process



Adapted from J. Phillips, P. Phillips, *10 Ten Steps to Successful Business Alignment* (ASTD Press, 2012)



Adapted from J. Phillip sand P. Phillips, *Proving the Value of HR: How and Why to Measure ROI*, second edition (Alexandria, VA: Society for Human Resource Management, 2012)

the impact of those results on the business group scorecard, and the consulting support needed to address the results.

Throughout the development of this strategy, the most difficult component to measure was diversity leadership. The consulting team saw it as a qualitative assessment process, allowing the business groups to monitor and report their progress on a semiannual basis. The leadership focus has several components based on two dimensions, organizational and personal:

- Organizational:
  - » Identifying business integration opportunities and establishing measures.
  - » Monitoring direct report team movement.
- Personal:
  - » Optimizing sensitivity/understanding of differences.
  - » Role modeling behavior and commitment.
  - » Removing obstacles inhibiting employee success differences.

Since the implementation, Prudential has maintained the process as outlined above (with some modifications) and enhances the process each year. Prudential doubled the weight of diversity leadership from 30 percent to 60 percent. This expanded score allowed for greater differentiation between those business groups that demonstrated excellence in this area and others that were in early stages of development. The consulting team also developed a diversity leadership template and distributed it to business groups to aid in reporting results on a semiannual basis. The template facilitated the collecting and scoring of information provided to the EO/diversity unit.

Prudential also introduced "stop and check" sessions with each business group. The team engaged Hubbard to work with contacts from each business group and the EO/diversity team. Hubbard asked contacts to complete an assessment of their business group's strengths, weaknesses, opportunities, and threats prior to attending the session. The contacts then had the opportunity to receive guidance on issues they identified in advance. The stop and check sessions were an opportunity for contacts to give feedback on action plans that were

in place and, in some cases, were instrumental in the development of new plans.

Prudential Financial held its first Annual Diversity Best Practices Forum. The forum's purpose focused on spotlighting internal best practices that could be leveraged across the organization. The leadership team offered the diversity contacts and HR vice presidents the opportunity to share success stories, explore the foundations of formulating and implementing best practices, and build a best-practice knowledge-base of measurable, value-added contributions to enhance their diversity approach. The forum was a success, and the company has held one each year since.

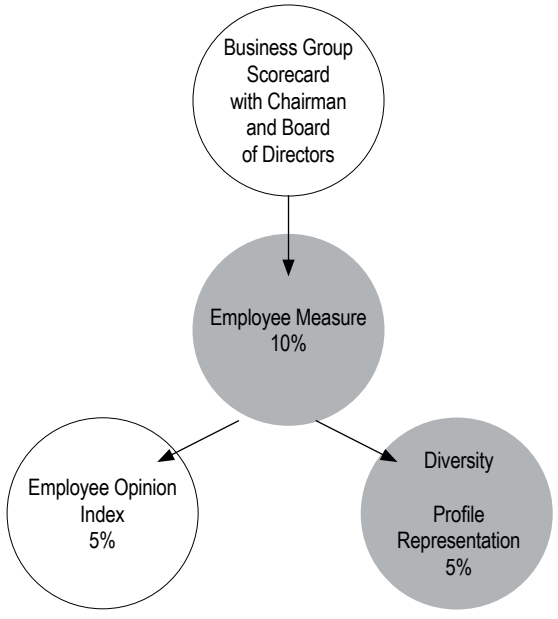
Prudential Financial held the annual Best Practices Forum in the third quarter. At this meeting, the company made three significant changes to its evaluation process while continuing to use a model that included a midyear and year-end assessment. First, Prudential expanded the weight for diversity leadership to the maximum weight to allow a maximum score of 1.0. This change shifted the focus from profile representation to leadership over time. The evaluation team agreed that as the leadership results grew stronger, both the representation of employees and the environment in which they work would reflect a company that embraces diversity as a business imperative. Second, management provided a narrative to the chairman for input into senior leader performance appraisals based on leadership results. This step was a key factor in demonstrating the commitment of Prudential Financial's chairman to diversity leadership as a critical competency for members of his senior team. Third, Prudential piloted a new methodology in its largest business group; this methodology involved working with individual profit center leaders to establish diversity leadership objectives for their specific organization. Prudential enacted this step because the senior business leader required greater accountability of her profit center leaders. Prudential accomplished the goal of having greater individual accountability by engaging the lead HR consultant for each profit center/global support function to meet with its business leaders regarding diversity objectives. By engaging the profit center leaders in the process, diversity leaders were able to penetrate another level of leadership to achieve additional buy-in and identify business integration

opportunities that might not have otherwise surfaced. The result was a more comprehensive leadership report and a higher diversity leadership score based on excellent results.

After refinement, Prudential Financial again submitted narrative to the chairman for input to his senior team's performance appraisals. The messages of commitment to diversity continue to be reinforced by the chairman's inclusion of its results in performance reviews and by the impact results have in its personal compensation (beyond the bonus plan).

As in previous years, the senior leadership team reviewed the elements of the business group scorecard to ensure that each component remained relevant and effective in monitoring progress toward Prudential Financial's business objectives. As part of this process, Prudential Financial, in its role as a public company, faced the additional challenge of considering financial commitments made to shareholders and analysts.

Figure 3.2 Business Group Scorecard



Based on this review, the diversity leadership made the decision to rebalance the Employee Measures components of the scorecard to reflect its increased focus on financial performance. This shift enables Prudential to continue to maintain its focus on people and to deliver on business results. The business group scorecard now reflects an adjusted weighting of the Employee Measures Section to 10 percent from 20 percent. The elements of that section will include the Employee Opinion Index (5 percent) and Diversity Profile Representation (5 percent).

Although the scorecard no longer includes voluntary Turnover and Diversity Leadership, it continues to ensure that they remain important components in the assessment of each business's performance. Prudential will continue to track progress in diversity leadership and share data with the chairman and his direct reports. The chairman will consider this information as he assesses the overall performance of those reporting to him; Prudential's business leaders have agreed to do the same for their direct reports.

Figure 3.3 shows the manner in which Prudential has modified the Employee Measures component of its business group scorecards over time to address evolving business needs.

Figure 3.3. Employee Measures Scorecard Evolution

Year 1	Year 2	Year 3	Year 4
Employee measures component of business scorecard introduced (20%)	Employee measures business scorecard (20%)	Employee measures business scorecard (20%)	Employee measures business scorecard (10%)
Employee commitment (10%) • Climate index (survey)	Employee commitment (10%) • Commitment index (survey) • Voluntary turnover	Employee commitment (10%) • Employee opinion • Index (survey) • Voluntary turnover	Employee commitment (5%) • Employee opinion • Index (survey)
Diversity 10%) • Profile representation • Environment index • Diversity leadership	Diversity (10%) • Profile representation • Environment index • Diversity leadership	Diversity (10%) • Profile representation • Diversity leadership	Diversity (5%) • Profile representation

Although Prudential has instituted changes to the components and weight attached to diversity, it has consistently held members of senior management accountable for diversity progress by using diversity metrics as a component of both their personal performance appraisals and their variable compensation. Additionally, results affect all management in that the company and business group scorecards affect the size of the compensation pool available for management bonuses. In 2001, Prudential made bonuses available to employees at all levels, further emphasizing the impact of these metrics on the compensation of all employees.

Costs

Costs associated with diversity metrics include salaries and benefits for staff, as well as training and consulting fees. In aggregate, the cost of developing the measurement process was approximately $600,000 for the three-year evaluation period.

Benefits

The benefits that Prudential realized as a result of measuring diversity results far outweigh the costs. Using the total benefit numbers and the Diversity Return on Investment (DROI) methodology, Prudential calculated the financial impact to be as follows:

- Diversity contribution margin: 20 percent of the total savings (conservative estimate that 80 percent of benefit came from other sources).
- Confidence level factor: 50 percent certainty (estimated error).
- Year 1 benefit/cost ratio: 4.2:1 (for every $1.00 put in, $4.20 received).
- Year 1 DROI: 320 percent.
- Year 1 savings: $840,000.
- Estimated savings over three years: $50,918,332.73 (each year calculated separately and aggregated from all business unit applications of the process).

Prudential Financial has also benefited from the fact that external entities such as *Fortune*, *LATINA Style*, and *Equal Opportunity* magazines have taken notice of the company's commitment to diversity.

Since the program began, Prudential has earned numerous accolades, which include the following:

- "Top 100 List" of Employers for Hispanics, *Hispanic* magazine.
- "Exemplary Company for Workers 50 and Over," AARP.
- "Top 50 Employers," *Equal Opportunity* magazine.
- "50 Best Companies" for Latinas, *LATINA Style Magazine*.
- "Top 25 Companies" for working mothers, *Working Mother* magazine.
- "Top 25 Companies" for executive women, *Working Woman* magazine.
- "Workplace Model of Excellence," National Healthy Mothers, Healthy Babies Coalition.
- "Top 25 Family-Friendly Companies," *Jacksonville Magazine*.
- "Top 50 Companies for Diversity," DiversityInc.com.

Recognition in 2002 includes the following:

- "50 Best Companies for Minorities," *Fortune* magazine.
- "Top 100 List" of companies providing the most employment opportunities for Hispanics, *Hispanic* magazine.
- "Top 25 Minority Vendor Programs," *Hispanic* magazine.
- "Top 15 Employers," C*areers & the disAbled* magazine.
- "Top 25 Companies" for executive women list, *Working Woman* magazine.
- "Top 25 Family-Friendly Companies," *Jacksonville Magazine*.

The benefits of this recognition—Prudential's status as an "employer of choice" with a "winning" business strategy—lie in the company's integration of diversity into business and HR processes. For example, Prudential has set company-wide spending objectives of addressable purchasing dollars with minority- and women-owned businesses. As the Chairman Art Ryan says, "Our policy to use a supplier base reflective of our diverse customer base is a decision that makes good business sense." When Prudential went public in December 2001, the financial management unit also partnered with minority-owned businesses. When Prudential selected The Williams Capital Group to be a lead underwriter for its initial public offering (IPO), it was both a historic and strategi-

cally sound business decision because it was the first time in history a minority-owned firm was included at such a high transaction level.

Data

Prudential assesses diversity leadership results in a semiannual qualitative process. Early in the year, Prudential asks the diversity contact and senior HR leader in each business group and corporate center to work with their business leaders to determine "high impact business objectives" for the year. The EO/diversity team then meets with leaders from business groups and corporate centers to establish high-impact organizational and personal diversity objectives that fit their specific business models and strategies. The EO/diversity unit provides support through consulting services as well as creates tools to support the achievement of diversity leadership goals.

In the area of organizational leadership, Prudential asks business groups and corporate centers to include objectives around all or some of the following:

- Monitor extended leadership team (direct reports to the chairman and one level down) movement as it relates to promotions, hires, transfers, and separations.
- Ensure full consideration of all candidates on diverse slates.
- Establish objectives for minority and women suppliers.
- Implement and expand diversity mentoring.
- Increase diversity communications.
- Monitor assignments to task forces and special projects.

In the area of personal leadership, Prudential asks business groups and corporate centers to include the following objectives for members of their leadership team:

- Require 100 percent participation for setting annual diversity objectives for managers and executives.
- Sponsor and participate in diversity events such as Heritage Month recognition events.

Throughout the year, Prudential assesses progress made on high-

impact objectives through a process that includes regular consultation and qualitative analysis of results. Prudential practices the following steps in the assessment process:

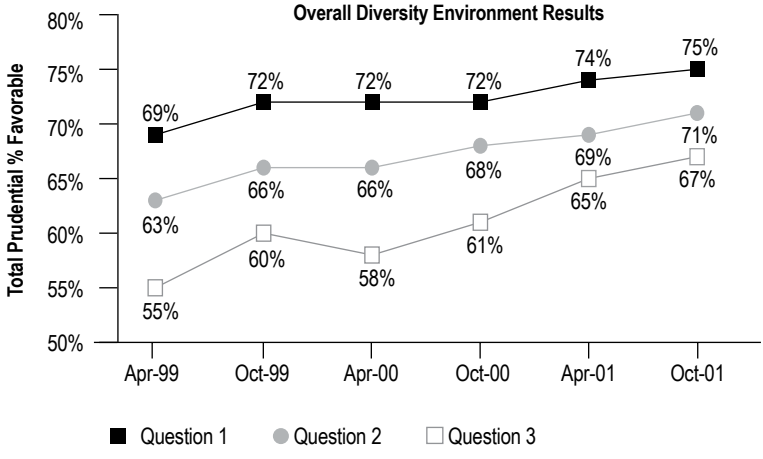
- EO/diversity and business units agree on objectives and measurement criteria.
- Business units submit a completed progress report (midyear and year-end).
- EO/diversity team reviews and scores performance based on results achieved.
- Diversity leaders send reports of diversity performance assessments to business group HR heads and diversity contacts.
- Diversity leaders hold meetings with senior leaders to assess position and identify adjustments as needed.
- Diversity leaders submit final (year-end) results submitted to the enterprise planning unit for inclusion in the performance contract.
- Final results are submitted to the chairman and CEO.

Prudential's diversity intervention evaluation followed this format:

- Level 1: Reaction and satisfaction
  Training received a rating of 4.8 out of 5.
- Level 2: Learning results
  Observation checklist revealed 92 percent of managers could demonstrate the competencies.
- Level 3: Application results
  Skills used in 96.3 percent of situations based on "critical incident review" data.
- Level 4: Business results
  A reduction in Year 1 turnover costs of 13.2 percent.
- Level 5: Diversity Return on Investment (DROI)
  BCR: 4.2:1, DROI: 320 percent.

Savings Year 1: $840,000

Figure 3.4. Overall Diversity Environment Results



1. My supervisor works effectively with individuals who are different from himself or herself. (top quartile = 76%-77% favorable)
2. My workgroup has a climate in which diverse perspectives are valued. (top quartile = 67%-83% favorable).
3. Senior management demonstrates its support for diversity by its actions and behaviors. (top quartile = 69%-71% favorable)

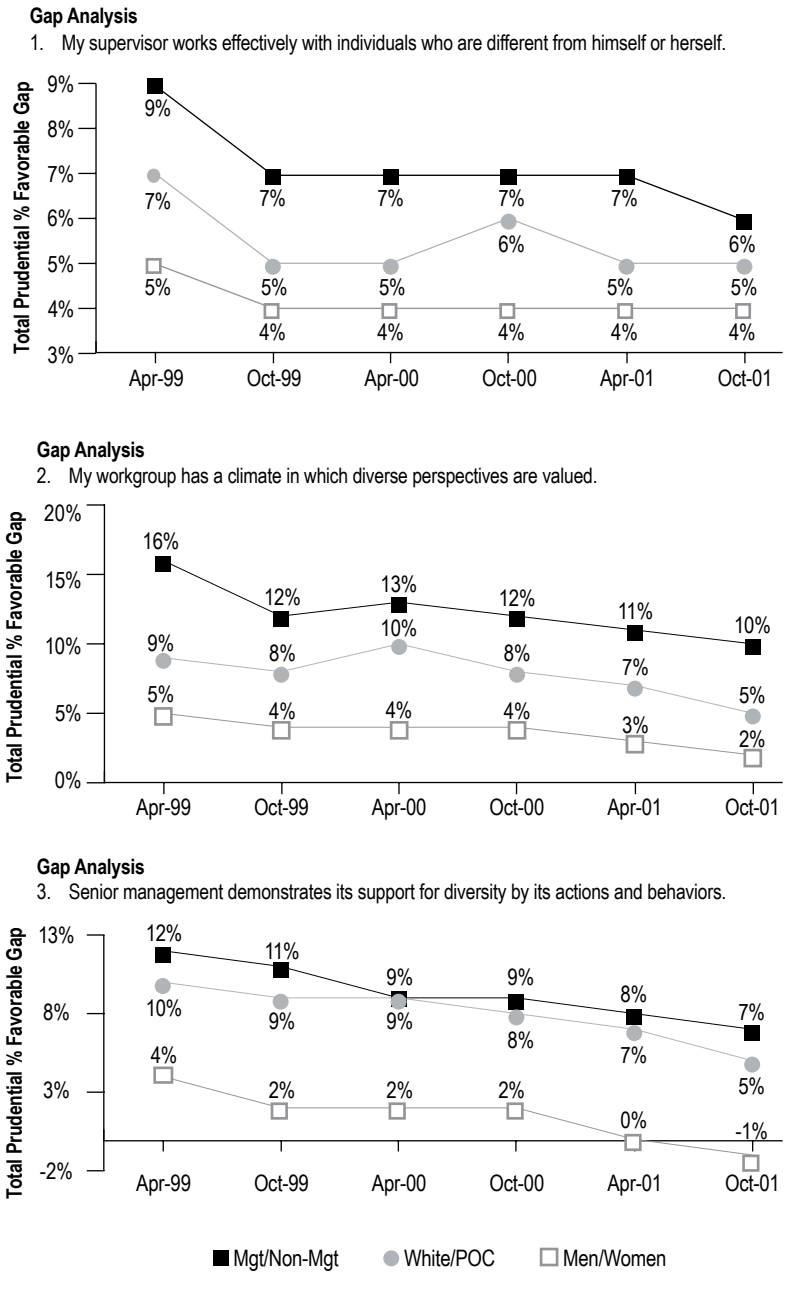
Results

As a result of monitoring diversity leadership results to the present, the leaders of the organization better understand and articulate the concepts of diversity that comprise integral parts of Prudential's business. In addition, employee satisfaction results show that the company has improved employee satisfaction overall and is closing gaps in employee satisfaction across race, rank, and gender categories. These achievements can be seen in Figures 3.4 and 3.5.

Prudential has witnessed the following improvements as a result of its diversity training program:

- Significant improvement in representation of women and people of color across all salary categories.

Figure 3.5. Employee Satisfaction Gap Analysis



- The prioritization of integrating diversity into key business processes.
- Significant gains in identifying and using minority and women vendors for appropriate business-critical functions.
- Gains in advertising to diverse market segments.
- Active engagement in practices that support the recruitment and development of a diverse workforce.
- Attention to the diverse needs of our employees and integrated work/life initiatives to meet those needs.

In short, Prudential has become an organization that is not just an employer of choice, but a good corporate citizen. The company has received growing external recognition for championing work/life issues. It supports local communities by making responsible investments in social programs in the areas of affordable housing, economic development, minority entrepreneurship, community health, safety, and education.

Communication Strategy

In addition, Prudential Financial has integrated diversity messages into key internal and external communications. Most Prudential Financial businesses have diversity websites that provide its employee population with educational information on myriad diversity-related topics. Prudential Financial added a "Bottom-Line Diversity" class to its course offerings to further foster a productive, respectful work environment. The two-hour module, part of the Prudential e-learning curriculum, joins other instructor-led classes such as "Valuing Diversity" and "Leading a Diverse Work Force," designed to increase diversity awareness in management.

Lessons Learned

Many lessons have emerged from this diversity leadership effort. They can serve as guidelines for implementing similar processes and approaches to build momentum:

- Lesson 1: Engage senior leaders for "buy-in" and ownership. The more senior leaders feel they own the concepts and ideas for moving the diversity agenda ahead, the better off you are in implementing the change effort internally. This helps build commitment versus compliance. In addition, use their words and thought, then turn them into action.
- Lesson 2: Apply the dominant logic. Notice how things get done and what metrics have worked in the past. Link the diversity metrics to current measurement processes where possible to leverage current credibility.
- Lesson 3: Integrate diversity requirements into business processes. Diversity metrics processes should be a part of the fabric of business. The key to sustainability is to better understand the organization's business systems such that you can seamlessly integrate the diversity process into them.
- Lesson 4: Keep it simple. Measure the "vital few" measures that have the most impact. For diversity representation metrics, measure the net profile change, and provide diagnostic tools to get to the root issues of pipeline, recruitment, and retention problems.
- Lesson 5: Measure outcomes and results, not activity. By measuring the Diversity Return on Investment (DROI™) you can demonstrate how diversity is contributing to revenue growth, cost control, and more as a value-added source for improved organization performance.
- Lesson 6: Create tools to help the organization win. Many times diversity organizations develop metrics and position themselves solely as evaluators. The diversity organization must be seen as supportive of the business, a balance between assessment and assistance.
- Lesson 7: Review and progress. It is amazing how the diversity change effort gains support when senior leaders are behind the effort, and the effort is tied to return on mission and business performance objectives and outcomes.

- Lesson 8: Be proactive in introducing diversity ROI metrics in the organization. By doing so, it positions diversity as a strategic business partner.
- Lesson 9: Educate others. Train others on the interpretation and use of diversity ROI metrics to share evaluation responsibilities. This helps you model the diversity and inclusion approaches we stress.

Conclusions

Although Prudential has made significant progress in the past several years, and has been recognized for its efforts, leadership knows that there is still a lot of work yet to be done. Prudential believes that a critical factor in the success of organizations striving to become world-class business leaders lies in their demonstration of diversity leadership. Prudential also believes that an organization's strong diversity leadership measurement processes are key to the successful achievement of its goals. Applying a diversity leadership approach along with a comprehensive diversity ROI measurement process makes a powerful combination for improved organizational performance.

Questions for Discussion

1. How was the case made for the importance of measuring diversity leadership?
2. What is your reaction to the measurement process?
3. Do you believe the business results to be credible? Why or why not?
4. Critique the analyses (isolating the effects of diversity and converting data to money).
5. Do you think the ROI is credible? Why or why not?
6. Do you believe it is necessary to link compensation of senior leaders to results?

Chapter 4.
Measuring ROI in an Inclusive, Self-Coaching Approach to Promote Work Engagement:
PolyWrighton

By John Kmiec, Sandra Dugas, Cyndi Gaudet, Heather Annulis, Mary Nell McNeese, and Susan Bush

This case study describes the evaluation of a learning intervention designed to enhance the capabilities of immediate managers to positively influence line employee work engagement. The study used quasi-experimental research design to analyze changes in work engagement for line employees assigned to two of fourteen business units at PolyWrighton, a manufacturer of high-quality, lightweight plastics. The test group of immediate managers in the production business unit received the learning intervention. The maintenance business unit managers received no intervention. Also evaluated were the production unit's participant reaction, learning, application, and business impact data. Production's adjusted return-on-investment estimate was impressive.

This case study was originally published by the American Society for Training & Development (ASTD) in 2012. It was adapted for this publication.

Background

PolyWrighton makes high-quality, lightweight plastics used to package a wide variety of food, beverage, and personal care products. Meeting rigorous hygienic, chemical, and environmental safety standards and specifications for these products requires constant monitoring and testing, state-of-the-art technology, and an extensively trained, highly skilled workforce. The chemicals used in the manufacturing process are both toxic and flammable. The plant machinery is complex, massive in size, and hazardous in its own right. The product itself is processed under high heat and pressure. These conditions combine to demand heightened operational and safety awareness by all employees.

Adding to the complexity of the operation are the costs associated with product waste and rework. In a highly competitive market where raw materials are expensive and frequently in short supply, PolyWrighton must generate as little waste and rework as possible. Rework is defined as product that fails to meet customer expectations for quality, and therefore must be reprocessed. Product waste is unusable because it cannot be reprocessed and must be discarded. The costs associated with rework and waste result in an additional $35,000 for every 1 percent of product rework and $245,000 for every 1 percent of waste per total product produced. The larger of the two expenses, product waste, costs PolyWrighton about $600 per minute for every minute waste is generated.

As with many manufacturing processes, most waste and rework can be prevented, although a smaller amount cannot be prevented and may be considered normal. Controllable waste and rework, for instance, are the result of assignable causes. That is, their causes are identifiable and can be eliminated and prevented from reoccurring. For example, some controllable waste in the production business unit may represent the cost of a single human error in judgment or decision-making that occurred during the manufacturing process. The waste in this example can be traced to the specific cause, and the cause can be diagnosed and eliminated by appropriate intervention. The same holds true for an unexpected equipment failure that must be diagnosed and repaired by the maintenance unit. If the breakdown is preventable, it is controllable. Depending on the nature

of the problem, the cause of the mechanical breakdown may be assignable to the maintenance unit (for improperly performed or neglected servicing procedure), the production unit (for operating the equipment improperly), or both. On the other hand, common waste and rework are random, and their causes are unknown. Common waste and rework are considered normal byproducts of production, as long as they remain within normal limits of the manufacturing process.

The Need

The learning program was designed to prepare the production business unit's immediate managers to more effectively create and sustain a motivational work environment to increase the level of engagement in direct reports. The program supposed that, by providing a more motivational work environment, the production unit managers would have a positive impact on the work engagement of their 32 line employees. The program would evaluate the extent to which any improvements in work engagement led the production unit to higher performance, productivity, business results, or profitability.

Work engagement is a positive psychological state of mind that researchers have linked to employee satisfaction and superior job performance. Research suggests that higher levels of work engagement are associated with positive feelings of individual well-being, or *vigor*; a strong sense of commitment to the organization, its mission, goals, and objectives, or *dedication*; and the employees' full concentration and involvement with the work itself, where time passes quickly, or *absorption*. Work engagement is measured by the frequency an employee experiences the three psychological substates of vigor, dedication, and absorption at work. The self-coaching skills taught during the learning program were intended to help the participating managers create and sustain a more favorable environment for work engagement to positively affect employee motivation and performance.

Program Objectives

Five self-coaching skills were taught to the production business unit managers during a rigorous 90-day learning program, combining class-

room and online instruction, on-the-job skills practice, journaling, and peer interaction. The objectives of the learning program were for each participant to accomplish the following:

1. Describe, relate, and apply the concepts of motivational work environments, work engagement, and organizational performance.
2. Effectively employ the five skills to create and sustain a motivational environment that positively effects work engagement and organizational performance.
3. Develop a habit of continuous self-coaching for the personal development in, and the practice of, the five skills.

A Summary of the Five Skills

Rooted in self-coaching, or the personal practice of monitoring and assessing one's own job performance, the five skills are self-managing, reflecting, acting consciously, collaborating, and evolving. *Self-managing* refers to clearly knowing one's self and practicing self-discipline and control in one's actions, communications, and interpersonal relations. *Self-managing* requires managers to understand how they are perceived by others, and how these perceptions can influence the business unit's overall performance. *Reflecting* is the practice of silent observation, or detaching one's self from emotionally charged situations to view these situations with much greater clarity. Helping the manager avoid ineffective or harmful courses of action, reflecting suspends judgment to consider the environment, the situation, and possible decision outcomes. When *acting consciously*, managers are more deliberate in their decision-making. Because they take the time to understand the facts and nuances of a situation, these managers have a heightened awareness of the consequences and desired outcomes of alternative courses of action. By engaging in informed, conscious decision-making, these managers deliberately and decisively act to achieve optimal performance and results. *Collaborating* managers invite team contributions, not just the opinions of a chosen few. Promoting a spirit of inclusion and abundance, these managers fully make use of the talents of their employees so they can more effectively achieve organizational goals and objectives. *Evolving* managers continue to purposefully grow and develop themselves, both personally and pro-

fessionally. These managers are open and eager to learn, and they are quick to see work challenges as opportunities for improving their own capabilities and performance.

Basis for Linking Skills to Performance

Research suggests that immediate managers who consistently and effectively practice the self-coaching skills of self-managing, reflecting, acting consciously, collaborating, and evolving play a significant role in shaping motivational work environments that positively affect individual and group performance. Motivational work environments more effectively engage the talents and abilities of employees in ways that positively influence their behavior on the job. Specifically, because motivational work environments lead to greater levels of employee satisfaction, work engagement, and productivity, the more highly engaged employees outperform their lesser-engaged peers. Effective managers afford their people the opportunity to perform well by providing them with critical resources and information needed to do an excellent job. These managers also provide meaningful professional development and growth opportunities, recognition and rewards, and other support valued by their employees. Superior managers build trust, treat people fairly, genuinely appreciate the contributions of employees, and respect each person as a highly valued member of the team. By clearly communicating organizational plans, goals, and objectives, and by setting and enforcing high standards of performance, these managers successfully align the personal aspirations and efforts of their people with the mission, goals, and objectives of the organization.

Purpose of Evaluation

This study focused primarily on the production business unit's performance, as measured by the four participating immediate managers' reaction, learning, and application of the five skills taught during the intervention. Also evaluated were the work engagement levels of the production managers' thirty-two line employees compared to the control groups' 31 line employees assigned to the maintenance business unit. Moreover, the study evaluated the impact and ROI of the intervention in terms of the production unit's controllable waste and rework. The

program was evaluated to provide information for PolyWrighton decision-makers considering whether to extend the learning program to the remaining 13 business units, to make improvements to the learning program, or to abandon the program altogether.

Evaluation Methodology

The ROI Methodology was used to determine five levels of value, including participant reaction, learning, and on-the-job skills application. Also measured were business impact, intangible benefits, and ROI in the production unit. That is, the evaluation focused primarily on the production unit's performance, as measured by the four immediate managers' reaction, learning, and application of the five skills taught during the intervention. Using the extensively studied and validated Utrecht Work Engagement Scale (UWES), the evaluation also compared the work engagement of the production managers' 32 direct reports to the 31 direct reports assigned to the maintenance unit. The impact and ROI of the intervention were evaluated in terms of the production unit's controllable waste and rework.

Planning the intervention and its evaluation required a thorough needs assessment to ensure the intervention aligned with organizational priorities. The results of the needs assessment was the Business Alignment and Forecasting, shown in Figure 4.1.

For the production unit, aligning the intervention with organizational needs meant increasing employee work engagement and reducing controllable product waste and rework. The production unit's work engagement was compared to the maintenance unit's work engagement using the UWES. In a quasi-experimental research design format, work engagement comparisons were generated by taking repeated UWES measurements of both production and maintenance units. Product quality was measured in terms of costs associated with the production unit's monthly percentages of controllable product waste and rework. Trend analysis and participant and management estimates were used to isolate the effects of the intervention. The researchers included the fully loaded costs of the program in the ROI calculation to ensure the monetary benefits were not overstated. PolyWrighton provided standard

Figure 4.1. Business Alignment and Forecasting

Level	Needs assessment	Program objective	Measurement and evaluation
5	**Payoff needs fi** Avoid costs associated with controllable waste and rework. **1**	**ROI objectives fi** Target ROI of 15%. **fi**	**ROI** Calculate ROI. **fi**
4	**Business needs fi** Reduce controllable waste and rework. Increase work engagement. **1**	**Impact objectives fi** Monthly percentages of controllable product waste and rework decline. Increase work engagement. **fi**	**Impact** Percentages of controllable product waste and rework at 8 months after completion of the program compared to the same measurements taken before the program. UWES of direct reports at 6 months. **fi**
3	**Job performance needs fi** Immediate manager effectiveness in the areas of leadership, setting and maintaining standards, and developing and motivating employees. **1**	**Application objectives fi** Effectively and continuously apply the five self-coaching skills at work. Effectively create and sustain motivational work environments that increase engagement. **fi**	**Application** Participant self-assessment at 3 months after completion of the program. UWES of direct reports at 3 months. **fi**
2	**Learning needs fi** Increase success skills of immediate managers in the areas of leadership, setting and maintaining standards, and developing and motivating employees. **1**	**Learning objectives fi** Immediate managers learn to effectively apply the five self-coaching skills of self-managing, reflecting, acting consciously, collaborating, and evolving. Learn how to foster motivational work environments that increase engagement. **fi**	**Learning** Session content summaries, participant assignments, and skill development journal entries during the program. Pre/post self-assessment profile. UWES of direct reports during the program. **fi**
1	**Preference needs fi** Learning that is relevant and important to successful job performance.	**Reaction objectives fi** Program content receives favorable rating of 4 out of 5 in relevance and importance. 80% of participants identify planned actions.	**Reaction** Reaction and planned action questionnaires at the end of each session of the program.

Source: Adapted from Patricia P. Phillips and Jack J. Phillips, *The Value of Learning: How Organizations Capture Value and ROI and Translate Them into Support, Improvement, and Funds* (San Francisco: Pfeiffer, 2007).

values for converting controllable waste and rework data into monetary values. Data not converted to monetary values, including work engagement, were listed as intangible benefits.

The participating managers' on-the-job application, learning, and reaction data were also collected. The research team measured the on-the-job application of participant skills using immediate manager self-assessment surveys and UWES data collected from managers' direct reports after the intervention. During six of the seven sessions, learning was measured by the participants' summarizing how they practiced the previous session's content on the job, and by their completed assignments and skill development journal entries. Learning was also measured using a pre- and post-program skill assessment inventory, and by UWES data collected from the direct reports during the course of the intervention. At the end of each of the seven learning sessions, the researchers collected participant reaction data pertaining to program content relevance and importance, as well as the participants' planned implementation actions.

Categories/Levels of Data

Corresponding to the ROI Methodology, the categories, or levels, of data included those listed in Table 4.1. Level 1 Reaction data measured participant satisfaction and planned actions for implementing the learning. The organizational need was for the participants to perceive that the learning was relevant and important to successful job performance, and to plan to use the learning on the job. The program objectives, in this case, included a mean rating of 4 out of 5 points for content relevance and importance, based on participant reaction surveys, and 80 percent of participants' identifying planned actions.

Level 2 Learning measures participant acquisition of knowledge and skills, as well as changes in attitude. The need was for the immediate managers to learn how to effectively apply the five skills on the job, as determined by facilitator assessments of participant discussions, responses to questions, and completed assignments. Also, the facilitator administered pre- and post-intervention self-assessment profiles to gauge the participants' perceptions of changes in key behaviors related

to the five skills. UWES surveys of the production unit direct reports were taken at Day 0, 45, and 90 of the intervention and compared to those of maintenance unit workers.

Level 3 Application measured on-the-job use of the skills taught in the intervention. The organizational need was for the immediate managers to consistently and effectively apply the five skills, measured through participant self-assessments taken three months after the intervention. The researchers also took UWES data of production and maintenance direct reports at three months to assess changes in work engagement.

Level 4 Impact measures changes in business impact. The organizational need was to reduce the percentage of controllable waste and rework generated by the production unit. Monthly percentages of controllable rework and waste were used to determine whether program objectives had been met. Also, one last UWES comparison of direct reports was taken six months after the intervention.

The Level 5 ROI calculation compared the program benefits to its costs. In this case, the research team established a conservative 15 percent target ROI for the reduction of the production units' controllable rework and waste.

Data Collection Strategy

The data collection plan in Figure 4.2 shows the level of evaluation, broad program objectives, measures/data collected, collection methods, data sources, timing, and responsibility. Level 1 Reaction data collected at the end of each session gauged the participants' perceptions of the program and their intent to apply what they had learned. In addition to Level 2 participant pre- and post-self-assessment profiles and facilitator appraisals of learning, the evaluation used work engagement data collected from the production business unit during the intervention and compared it to the work engagement of the maintenance unit. Participant self-assessment profiles and work engagement data taken three months after the intervention gauged the Level 3 on-the-job application of participant skills. Level 4 data included work engagement measurements taken six months after the intervention and the percentage of controllable

Table 4.1 Categories or Levels of Data

Level	Measurement Focus	Organizational Needs	Program Objectives
1. Reaction	Measures participant satisfaction and planned actions for implementing the learning.	Participants perceive the learning as relevant and important to successful job performance. Participants plan to use the learning on the job.	Program receives a favorable mean rating of 4 out of 5 points for content relevance and importance. At least 80 percent of participants identify planned actions.
2. Learning	Measures acquisition of knowledge and skills, as well as changes in attitude.	Immediate managers learn to effectively apply the five skills on the job.	Facilitator assessment of participant discussions, responses to questions, and completed assignments. Pre- and post-intervention self-assessment profiles. UWES surveys of direct reports taken during the intervention.
3. Application	Measures on-the-job utilization of learning.	Immediate managers consistently and effectively apply the five skills on the job.	Participant self-assessments at 3 months after completion of the program. UWES of direct reports 3 months after completion of the intervention.
4. Impact	Measures changes in business impact.	On-the-job application of the five skills has a positive impact on reducing controllable waste and rework.	Percentage of controllable rework and waste product generated by Production. UWES of direct reports at 6 months.
5. ROI	Compares the benefits of the program with its costs.	Target 15% ROI from controllable rework and waste production.	Calculate ROI.

Source: Adapted from *The Value of Learning: How Organizations Capture Value and ROI and Translate Them Into Support, Improvement, and Funds* by Patricia Pulliam Phillips and Jack J. Phillips, 2007. Copyright 2007 by John Wiley & Sons, Inc. San Francisco: Pfeiffer

waste and rework generated by production at eight months. Level 5 ROI was a calculation of net program benefits over costs.

ROI Analysis Strategy

The ROI analysis plan for this project, shown in Figure 4.3, depended on tracking the percent of controllable waste and rework for the production business unit before, during, and after the learning intervention. Monetary values were calculated directly, based on the percentage of total product waste and rework generated each month. The researcher used two methods to isolate the effects of the intervention on controllable waste and rework. The strategy called for trend analysis of the monthly percent of controllable waste and rework per total product, less those outliers identified by PolyWrighton management as not attributable to the production business unit. Management and participant estimates of the impact of the intervention and the level of confidence in those estimates were also taken and adjusted. Work engagement was not converted to a monetary value, but was listed as an intangible benefit. Fully loaded costs were calculated and verified by management to ensure the most conservative ROI possible.

Isolation Techniques

Participant and management estimates of the impact of the intervention on business results, corrected for estimate error, were used in conjunction with trend analyses of controllable waste and rework. Outliers identified by PolyWrighton management as not attributable to the production business unit were removed from the trend analyses.

Data Conversion Techniques

The conversion from percent controllable waste and rework to monetary values was direct. As previously noted, it costs PolyWrighton $35,000 for 1 percent of product rework and $245,000 for 1 percent of product waste. Data not converted to monetary values, including work engagement, were listed as intangible benefits.

Cost Summary

The program cost categories shown in Figure 4.3 included the consulting fees for the learning needs assessment, program design and development, learning delivery, and program evaluation. Printing and

Figure 4.2. Data Collection Plan

Program: PolyWrighton Work Engagement Program			Responsibility:	
Level	**Broad program objectives**	**Measures/data**	**Data collection methods**	
1 Reaction	Program content receives favorable ratings from participants. Participants plan to apply the learning on the job.	Program content receives average favorable rating of 4 out of 5 for relevance and importance. 80% of participants identify planned actions.		
2 Learning	Learn to effectively apply the five self-coaching skills of self-managing, reflecting, acting consciously, collaborating, and evolving. Learn to foster motivational work environments that increase engagement.	Participants demonstrate successful completion of program learning objectives outlined in the facilitator and participant guides. Self-assessment Work engagement	Observations of performance, guided discussions, questioning, and assignments Skill development journals Pre/post self-assessment profile UWES	
3 Application	Apply the five self-coaching skills at work. Foster motivational work environments that increase engagement.	Self-assessment Work engagement	Questionnaires UWES	
4 Impact	Reduce product waste and rework. Increase work engagement.	Percent controllable waste and rework generated by the production business unit. Work engagement	Organizational records/ databases UWES	
5 ROI	Target ROI 15%	Comments: ROI = (Net Program Benefits ÷ Program Costs) x 100		

Source: Adapted from Patricia P. Phillips and Jack J. Phillips, *The Value of Learning: How Organizations Capture Value and ROI and Translate Them into Support, Improvement, and Funds* (San Francisco: Pfeiffer, 2007).

	Date:		
	Data sources	**Timing**	**Responsibility**
	Participants	End of each session during the program	Facilitator
	Facilitator Participants Participants Direct reports of participants	Throughout the 90-day learning program Day 0, Day 90 Day 0, Day 45, Day 90	Facilitator
	Participants Direct reports	3 months after program completion	Program manager
	Business unit manager Direct reports	8 months after program compared to pre-program 6 months	Program manager

Figure 4.3. Data Analysis Plan

Data items	Methods for isolating the effects of the program/process	Method for converting data to monetary values	
Percent controllable waste Percent controllable rework Work engagement	Participant and management estimates Trend analysis	Percent controllable waste times $245,000 Percent controllable rework times $35,000 Work engagement not converted to a monetary value	

Source: Adapted from Patricia P. Phillips and Jack J. Phillips, *The Value of Learning: How Organizations Capture Value and ROI and Translate Them into Support, Improvement, and Funds* (San Francisco: Pfeiffer, 2007).

supplies, participant salaries, facilities, and travel were also planned costs of the program. In actuality, all fees and expenses were waived, leaving only the cost of participant salaries for PolyWrighton to bear. However, to provide the most conservative ROI figure for decision-makers, all costs were included in the calculation.

Evaluation Results

Level 1, Reaction Results

The four participating immediate managers from the production unit completed reaction questionnaires at the end of each of the seven learning sessions. The areas surveyed were content relevance to the job, content importance to job success, intent to use the material on the job, facilitator effectiveness, material effectiveness, likelihood the participant would recommend the program to others, and overall satisfaction. Participants rated these items on a scale of 1 (strongly disagree) to 5 (strongly agree). They also indicated planned actions. Evaluation targets were set for a mean rating of 4 out of 5 points for content relevance and importance, and at least 80 percent of participants' identifying planned actions. The targets set for content relevance and importance

	Cost categories	Intangible benefits	Communication targets for final report
	Consulting fees (needs assessment, program design and development, learning delivery, and program evaluation) Printing and supplies Participant salaries Facilities Facilitator travel	Increased work engagement Employee satisfaction Improved teamwork and communications Better decision-making	Management Participants Training Human resources

and for planned actions were met. Content relevance and importance scored mean ratings of 4.16 and 4.07, respectively. Also, all participants developed plans to apply what they learned during the program.

Level 2, Learning Results

Production unit managers were taught the self-coaching skills of self-managing, reflecting, acting consciously, collaborating, and evolving during seven learning sessions over 90 days. Facilitator observations, participant self-assessments, and UWES measurements of the participant's direct reports were used to evaluate learning.

The pre- and post-program self-assessment profile asked participants to rate how consistently they practiced 25 specific work behaviors anchored to the five skills. Each behavior was rated on a scale of 1 (never) to 5 (always). Administered at Day 0 of the learning intervention, the pre-program self-assessment mean score for all 25 behaviors was 105.0 points. The Day 90 self-assessment mean score was 107.6 points. An increase of 2.6 points for the mean, though statistically inconclusive, suggests the possibility that at least a modest amount of learning occurred during the program. The project team deemed this number acceptable, given that the learning was designed to become

participant self-directed and to continue after the formal intervention ended. This evolution from facilitated instruction to self-coaching required that learning be evaluated as it was practiced on the job. With this in mind, work engagement levels would help evaluate participant skill acquisition during the intervention.

Taken in the context of the organizational setting, work engagement readings of the production test group and maintenance control group line employees provided additional insight into the participants' on-the-job skill development. A highly disruptive plant fire that occurred toward the end of the learning program produced a significant gap between these two groups—a slight drop in production work engagement compared to a much steeper decline in maintenance.

A thorough assessment of the situation found that the fire should have had no more of an adverse impact on maintenance (control group) compared to production (test group). According to the senior HR manager, the lead training manager, and the business unit and line managers at PolyWrighton, both groups experienced the same extended period of excessive overtime and intense physical labor. Although work engagement was more negatively affected in maintenance than in production, no apparent reason could be identified. This may suggest that the production immediate managers had been better equipped to deal with the plant fire and its consequences than their maintenance business unit counterparts. In other words, the five skills possibly helped keep the production unit from being as negatively affected.

Level 3, Application Results

Self-assessments suggested the self-coaching participant managers from production appeared to be applying their newly acquired knowledge and skills more frequently at Day 180, with a mean score of 112.6, than they were at Day 90, with a mean score of 107.6. Work engagement in both business units was on the increase three months after the intervention, but production maintained a higher response from its direct reports than did maintenance. Managers at PolyWrighton have suggested that the gain in the nonintervention maintenance group was probably the result of supervisory changes made during that period.

Barriers to Application

Engaged leadership by the lead manager in production and closer communication among all managers in that business unit prevented any notable barriers to application.

Enablers to Application

Production unit leadership was a driving force in enabling the transfer of learning by the participating managers to the job. The lead manager participated in the learning intervention and practiced the five skills alongside her direct reports, the four line managers. Also, regular meetings of these managers to discuss application of the five skills, and an improved system of tracking unit performance initiated by these managers, supported the continued use and development of the learning.

Level 4, Business Impact Results

The business impact measures included production's controllable rework and waste, summarized in Table 4.2. Also measured were production's work engagement levels compared to those of the maintenance unit. Work engagement data were not converted to monetary values but were treated as intangible benefits.

Pre-intervention monthly percentage and cost averages, based on data collected during the eight-month period preceding the intervention, projected trends for controllable waste and rework through the end of the eight-month period following the intervention. A linear trend line returned the projected percentages shown in Table 4.2. The projected trend values through the end of the post-intervention period were 0.0 percent for rework and 1.5 percent for waste.

All rework and waste data, the cause of which was not assignable to the production business unit, were treated as outliers and removed from calculation of the pre- and post-intervention eight-month averages. PolyWrighton management made the final determination of which data points would be treated as outliers. Examples of causes not assignable to production included new product specifications, ongoing technical issues stemming from the plant fire recovery, an unexpected

Table 4.2. Production Controllable Rework and Waste

	Pre intervention 8-month average[1,2]		Projected trend[3]		Post intervention 8-month average[4,2]				
	%	Value	%	Value	%	Value	% change[5]	Average monthly cost[6,7]	12-month cost projection[8,7]
Controllable rework[9]	2.69	$94,000	0.0	$0	1.87	$65,450	+1.87	+ $65,450	+ $786,400
Controllable waste[10]	0.73	$178,850	1.5	$367,500	.22	$53,900	-1.28	- $313,600	- $3,763,200
	Total Program Benefits (Controllable Waste and Rework Combined)[11]							- $248,150	- $2,977,800

		Impact estimate (%)[13]	Confidence (%)[14]	Adjusted estimate (%)[15]	Total benefit adjusted for impact[12]
Isolation of impact on total program benefits		50.0	85.0	42.5	$1,265,565

[1]Pre-intervention monthly percentage and cost averages are based on the data collected during the 8-month period preceding the intervention.
[2]Data points, whose causes were not assignable to the Production business unit, were treated as outliers and removed from the calculation of the pre- and post-intervention 8-month averages. PolyWrighton management made the final determination of which data points would be treated as outliers. Examples of causes not assignable to Production included new product specifications, ongoing technical issues stemming from the plant fire recovery, an unexpected line freeze attributable to severe weather, and worse-than-usual supplier material shortages.
[3]The projected trends are based on the pre-intervention percent waste and rework data collected during the 8-month period preceding the intervention. A linear trend line, generated in Microsoft Excel and extended through the end of the post-intervention period, returned the projected percentages shown. The dollar values referenced in notes 9 and 10 were then multiplied by the trend percentages to return the projected values.
[4]Post-intervention monthly percentage and cost averages are based on the data collected during the 8-month period following the intervention.
[5]Percent change is the post-intervention percentage minus the projected trend percentage for both controllable rework and waste.
[6]Average monthly cost is the post-intervention value minus the projected trend value for both controllable rework and waste.
[7]Negative values represent PolyWrighton cost avoidances.
[8]Average monthly cost multiplied by 12 months for both controllable rework and waste.
[9]$35,000 is the monetary value of 1 percent of controllable rework per total product produced. Monetary values provided by PolyWrighton.
[10]$245,000 is the monetary value of 1 percent of controllable waste per total product produced. Monetary values provided by PolyWrighton.
[11]Total benefit before factoring in participant and management impact estimates corrected for confidence error.
[12](12-month total program benefit expressed as a positive value) x (adjusted estimate expressed as a decimal value) = (total benefit adjusted for impact): $2,977,800 x 0.425 = $1,265,565.
[13]Combined manager and participant estimate of the intervention's impact on improvement.
[14]Combined manager and participant confidence of their estimate of the intervention's impact on improvement.
[15]Combined adjusted impact estimate based on combined manager and participant estimate and confidence.

line freeze attributable to severe weather, and worse-than-usual supplier material shortages. Controllable rework during the pre-intervention period averaged 2.69 percent. At a cost of $35,000 for every 1 percent, pre-intervention rework averaged $94,000 per month. The projected trend value through the end of the post-intervention period was 0 percent for rework. The post-intervention monthly average for rework, however, was 1.87 percent, for a cost of $65,450.

Controllable waste during the pre-intervention period averaged 0.73 percent. At a cost of $245,000 for every 1 percent, pre-intervention waste averaged $178,850 per month. The projected trend value through the end of the post-intervention period was 1.5 percent for waste, or $367,500. The post-intervention monthly average for waste was $53,900, based on 0.22 percent. The difference between the post-intervention average and the projected trend represented an average monthly cost decrease of $313,600 for product waste.

Combined, the cost of rework and savings on waste totaled an average monthly cost savings of $248,150, before factoring in participant and management impact estimates and correcting for confidence error, for a total projected annual cost savings of $2,977,800.

Isolation

Also shown in Table 4.2, the combined participant and management estimates of the impact of the intervention on business results, corrected for estimate error, were used in conjunction with the trend analyses of controllable waste and rework. In this case, the 12-month total program benefit, expressed as a positive value of $2,977,800, multiplied by the adjusted estimate of the intervention's impact on program benefits, expressed as a decimal value of 0.425, returned an annual cost avoidance of $1,265,565 before expenses. This is the total benefit, adjusted for impact, before subtracting total program costs.

Data Conversion to Money

PolyWrighton provided standard monetary values for waste and rework. The company estimated the value of 1 percent of rework at $35,000, and 1 percent of controllable waste at $245,000. The aver-

age monthly percentages were multiplied by these values to determine monetary value.

Program Costs

The learning intervention was provided free of charge to the company, but the estimated cost for the program was calculated at $253,761. Although the firm's actual cost for the intervention was $3,360, this study provided the more conservative ROI calculation to allow PolyWrighton managers to make a better-informed decision when considering whether to extend the intervention to the other 13 business units.

Level 5, ROI

The total projected annual benefit adjusted for impact, before subtracting total program costs, was $1,265,565. The $1,265,565 benefit less the program cost of $253,761 was $1,011,804. The net benefit of $1,011,804 divided by the total program cost of $253,761 was 3.99. Multiplied by 100, the Level 5 ROI calculation was 399 percent.

$$\frac{\$1{,}265{,}565 - \$253{,}761\ 100}{\$253{,}761} = 399\%$$

Intangible Benefits

The researchers studied work engagement throughout the intervention plus six months afterward. Work engagement is a positive psychological state of mind that researchers have linked to employee satisfaction and superior job performance. Higher levels of work engagement are associated with positive feelings of individual well-being (vigor); a strong sense of commitment to the organization, its mission, goals and objectives (dedication); and the employees' full concentration and involvement with the work itself (absorption). Work engagement is measured by the frequency an employee experiences the three psychological substates of vigor, dedication, and absorption at work. The self-coaching skills taught during the learning program were intended to help the participating production managers create and sustain a more favorable environment for work engagement

to positively affect employee motivation and performance. A series of statistical tests examined work engagement in production and maintenance units using the UWES in a quasi-experimental research design.

An independent sample t-test for differences between the production (test group) and maintenance (control group) means was not statistically significant at Day 0 of the intervention; the difference between the two groups' work engagement was too small to matter. However, the gap between these two business units had widened considerably by the end of the intervention. By Day 90, mixed-design analysis of variance statistical testing indicated that the difference between production and maintenance work engagement was statistically significant and powerful. Further, Cronbach's alpha testing showed the statistical reliability of the UWES was high. Given the organizational context, including a disruptive plant fire during the final 30 days of the study, the intervention can perhaps be seen as more preventive in nature. That is, it may be that the production managers learned to handle the high-stress situation more effectively than their maintenance counterparts.

By Day 270, six months after the intervention, work engagement in both business units was on the rise. Managers at PolyWrighton indicated the gain in the nonintervention maintenance group was probably the result of key supervisory changes made after the plant fire that occurred in the last 30 days of the intervention. The post-intervention gap continued to narrow, and production maintained high enough levels of work engagement to remain statistically significant at Day 180 and Day 270. In essence, production managers held that increased work engagement led to greater employee satisfaction, improved teamwork and communications, and better decision-making.

Communication Strategy

Results Reporting

Face-to-face meetings with members of the PolyWrighton management team, the participants, the training function, and the director of

human resources ensured the results were fully understood and reconciled prior to issuing the final written report.

Stakeholder Response

PolyWrighton had a positive reaction to the results and requested the intervention extend to the thirteen remaining business units.

Program Improvement

Stakeholders remained engaged throughout the entire data collection, analysis, and reporting process and offered suggestions to improve future iterations of the learning intervention. PolyWrighton agreed to collaborate with the design team to reduce the 90-day learning period, without sacrificing quality and transfer of skills to the job.

Lessons Learned

Process Learning

Researchers should conduct additional research into interventions, particularly in the context of organizational settings and individual business units. For instance, exploring a wider variety of applications for the UWES, including longitudinal studies that link work engagement to tangible business results indicators, may prove useful in assigning monetary values to calculate ROI. Also, using intervention research to move toward a more common and practical engagement construct that links the preconditions, psychological factors, behavioral outcomes, and business results may enhance the evaluation of such interventions in an organizational setting.

The study confirmed that practitioners should first take the time and effort to assess relevant business and learner needs in the context of organizational objectives and environmental conditions before selecting an intervention. In this case, the self-coaching learning intervention was designed to meet the needs of PolyWrighton and to link program objectives and measures to meaningful business outcomes. The integration of measurement and evaluation into the intervention from the start proved invaluable because it helped shape a more successful

implementation. Finally, interventions firmly grounded in research are more likely to succeed.

Organizational Response

Organizational response was favorable and positive. The key element in the overall success of the project was the highly engaged leadership by PolyWrighton managers to ensure the intervention was implemented on the job, as intended. Regular team meetings in the production unit enhanced communications among participating managers, and an element of accountability for implementing the self-coaching skills on the job were leadership-driven enablers of success.

Questions for Discussion

1. How critical do you think the business alignment and forecasting plan in Figure 4.1 was to the success of the program? Explain.
2. Given the time invested in the program, would it be practical to try it in your organization? Why was it successful at PolyWrighton?
3. How might the close coordination with the PolyWrighton stakeholders serve as a model for implementing similar interventions in other organizations?
4. Besides the UWES and self-assessment profiles taken three months after the termination of the program, how would you have measured on-the-job implementation of the five skills? Explain.
5. Guiding Principle No. 8 states that "Avoid use of extreme data items and unsupported claims when calculating ROI." How would you relate that principle to the elimination of non-assignable outliers from the production unit's waste and rework calculations? What about the use of the estimated total cost instead of the actual amount paid for the intervention? Explain.
6. The authors state that a key element in the overall success of the project was the highly engaged leadership by PolyWrighton managers to ensure the intervention was implemented on the job, as intended. In what ways do you believe that level of involvement affected the outcome, and how can it be nurtured in other organizations, where the environment is not as user-friendly?