

SOLUTIONS MANUAL

CHUCK WILLIAMS

MGMT²

STUDENT EDITION

WHAT'S INSIDE:

An innovative approach to
teaching and learning

Principles of Management

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Chapter 2: History of Management

Pedagogy Map

This chapter begins with the learning outcome summaries and terms covered in the chapter, followed by a set of lesson plans for you to use to deliver the content in Chapter 2.

- [Lesson Plan for Lecture \(for large sections\)](#) on page 4
 - [Lesson Plan for Group Work \(for smaller classes\)](#) on page 6
 - [Lesson Plan for Biz Flix \(video\)](#) lesson plan on page 7
 - [Lesson Plan for Management Workplace \(video\)](#) lesson plan on page 8
 - [Assignments with Teaching Tips and Solutions](#) begin on page 10
-
- √ [Case assignment](#) – ISG Steelton – Frederick Taylor’s experiments
 - √ [Management Decision](#) – Scripted service
 - √ [Management Team Decision](#) – Conflict resolution
 - √ [Practice Being a Manager](#) – Observing history
 - √ [Take Two Video assignment](#) – *In Good Company*
 - √ [Take Two Video assignment](#) – Original Penguin
 - √ [Review Questions](#)
 - √ [Additional activities and assignments](#)

Highlighted Assignments

What Would You Do?

Management Decision

Management Team Decision

Develop Your Career Potential

Take Two – Biz Flix

Take Two – Management Workplace

Key Points

Frederick Taylor’s original research is made more accessible by casting college students with summer jobs at the steel mill, in the role of the workers Taylor used in his pig-iron studies.

A manager faces the tough decision of whether to create a script for his service employees to follow

The student team must use peer review to decide how to handle an employee who broke a company policy.

Students begin scanning the press to get a sense of where management is going (theories in practice and theories on the horizon).

The clip from *In Good Company* shows Carter Duryea (played by Topher Grace) giving employees a pep talk about corporate synergy.

At Original Penguin, Chris Kolbe has used a nontraditional, hands-on management style.

Supplemental Resources

Course Assessment

PowerPoint slides with lecture notes

PowerPoint slides with video and lecture notes

Test Bank

Where to Find Them

IRCD

IRCD and online

IRCD

IRCD in Examview and Word; online in Word

Learning Outcomes

1 The Origins of Management

Management as a field of study is just 125 years old, but management ideas and practices have actually been used since 6000 B.C.E. From ancient Sumer to sixteenth-century Europe, there are historical antecedents for each of the functions of management discussed in this textbook: planning, organizing, leading, and controlling. However, there was no compelling need for managers until systematic changes in the nature of work and organizations occurred during the last two centuries. As work shifted from families to factories, from skilled laborers to specialized, unskilled laborers, from small, self-organized groups to large factories employing thousands under one roof, and from unique, small batches of production to large standardized mass production, managers were needed to impose order and structure, to motivate and direct large groups of workers, and to plan and make decisions that optimized overall company performance by effectively coordinating the different parts of organizational systems.

2 Scientific Management

Scientific management recommended studying and testing different work methods to identify the best, most efficient ways to complete a job. According to Frederick W. Taylor, the father of scientific management, managers should follow four scientific management principles. First, study each element of work to determine the “one best way” to do it. Second, scientifically select, train, teach, and develop workers to reach their full potential. Third, cooperate with employees to ensure implementation of the scientific principles. Fourth, divide the work and the responsibility equally between management and workers. Above all, Taylor felt these principles could be used to align managers and employees by determining a “fair day’s work,” what an average worker could produce at a reasonable pace, and “a fair day’s pay,” what management should pay workers for that effort. Taylor felt that incentives were one of the best ways to align management and employees.

Frank and Lillian Gilbreth are best known for their use of motion studies to simplify work. Whereas Taylor used time study to determine “a fair day’s work,” based on how long it took a “first-class man” to complete each part of his job, Frank Gilbreth used film cameras and microchronometers to conduct motion study to improve efficiency by eliminating unnecessary or repetitive motions. The Gilbreths also made significant contributions to the employment of handicapped workers, encouraging the government to rehabilitate them, employers to identify jobs that they could perform, and engineers to adapt and design machines they could use. Henry Gantt is best known for the Gantt chart, which graphically indicates when a series of tasks must be completed to perform a job or project, but he also developed ideas regarding pay-for-performance plans (where workers were rewarded for producing more but were not punished if they didn’t) and worker training (all workers should be trained and their managers should be rewarded for training them).

3 Bureaucratic and Administrative Management

Today, we associate bureaucracy with inefficiency and red tape. Yet, according to German sociologist Max Weber, bureaucracy—that is, running organizations on the basis of knowledge, fairness, and logical rules and procedures—would accomplish organizational goals much more efficiently than monarchies and patriarchies, where decisions were based on personal or family connections, personal gain, and arbitrary decision making. Bureaucracies are characterized by seven elements: qualification-based hiring; merit-based promotion; chain of command; division of labor; impartial application of rules and procedures; recording rules, procedures, and decisions in writing; and separating managers from owners. Nonetheless, bureaucracies are often inefficient and can be highly resistant to change.

The Frenchman Henri Fayol, whose ideas were shaped by his 20 plus years of experience as a CEO, is best known for developing five management functions (planning, organizing, coordinating, commanding, and controlling) and 14 principles of management (division of work, authority and responsibility, discipline, unity of command, unity of direction, subordination of individual interests to

the general interest, remuneration, centralization, scalar chain, order, equity, stability of tenure of personnel, initiative, and *esprit de corps*). He is also known for his belief that management could and should be taught to others.

4 Human Relations Management

Unlike most people who view conflict as bad, Mary Parker Follett believed that it should be embraced and not avoided, and that, of the three ways of dealing with conflict (domination, compromise, and integration), the latter was the best because it focuses on developing creative methods for meeting conflicting parties' needs.

Elton Mayo is best known for his role in the Hawthorne Studies at the Western Electric Company. In the first stage of the Hawthorne Studies, production went up because the increased attention paid to the workers in the study and their development into a cohesive work group led to significantly higher levels of job satisfaction and productivity. In the second stage, productivity dropped because the workers had already developed strong negative norms. The Hawthorne Studies demonstrated that workers' feelings and attitudes affected their work, that financial incentives weren't necessarily the most important motivator for workers, and that group norms and behavior play a critical role in work behavior.

Chester Barnard, president of New Jersey Bell Telephone, emphasized the critical importance of willing cooperation in organizations and said that managers could gain workers' willing cooperation through three executive functions: securing essential services from individuals (through material, nonmaterial, and associational incentives), unifying the people in the organization with a clear purpose, and providing a system of communication. Barnard maintains that it is better to induce cooperation through incentives, clearly formulated organizational objectives, and effective communication throughout the organization.

5 Operations, Information, Systems, and Contingency Management

Operations management uses a quantitative or mathematical approach to find ways to increase productivity, improve quality, and manage or reduce costly inventories. The manufacture of standardized, interchangeable parts, the graphical and computerized design of parts, and the accidental discovery of just-in-time management were some of the most important historical events in operations management.

Throughout history, organizations have pushed for and quickly adopted new information technologies that reduce the cost or increase the speed with which they can acquire, store, retrieve, or communicate information. Historically, some of the most important technologies that have revolutionized information management were the creation of paper and the printing press in the fourteenth and fifteenth centuries, the manual typewriter in 1850, cash registers in 1879, the telephone in the 1880s, time clocks in the 1890s, the personal computer in the 1980s, and the Internet in the 1990s.

A system is a set of interrelated elements or parts that function as a whole. Organizational systems obtain inputs from the general and specific environments. Managers and workers then use their management knowledge and manufacturing techniques to transform those inputs into outputs, which, in turn, provide feedback to the organization. Organizational systems must also address the issues of synergy, open versus closed systems, and entropy.

Finally, the contingency approach to management precisely states that there are no universal management theories. The most effective management theory or idea depends on the kinds of problems or situations that managers or organizations are facing at a particular time. This means that management is much harder than it looks.

Terms

bureaucracy
closed system

Gantt Chart
integrative conflict resolution

scientific management
soldiering

compromise
contingency approach
domination
entropy

motion study
open systems
organization
rate buster

subsystem
synergy
system
time study

Lesson Plan for Lecture

Pre-Class Prep for You:

- Prepare syllabus.
- Bring PPT slides.

Pre-Class Prep for Your Students:

- Buy book.

Warm Up

Begin Chapter 2 by leading students through this series of questions:

- “How long have there been managers?” (since the late 1800s)
- “So if managers have only been around since the late 19th century, does that mean the origin of management dates also to that time?” (yes/no)
- “Explain.”

(If a blackboard is available, begin to write their ideas on it so that a cumulative definition can be derived.)

Content Delivery

Lecture slides: Make note of where you stop so you can pick up at the next class meeting. Slides have teaching notes on them to help you as you lecture.

Topics

PowerPoint Slides

Activities

In the Beginning

- 1 The Origins of Management
 - 1.1 Management Ideas and Practice throughout History
 - 1.2 Why We Need Managers Today

- 1: History of Management
- 2: In the Beginning
- 3: Management throughout History
- 4: Why We Need Managers Today

The Evolution of Management

- 2 Scientific Management
 - 2.1 Frederick Taylor
 - 2.2 Frank & Lillian Gilbreth
 - 2.3 Henry Gantt

- 5: Evolution of Management
- 6: Scientific Management
- 7: Frederick W. Taylor
- 8: Taylor’s 4 Principles
- 9: Frank & Lillian Gilbreth
- 10: Motion Studies
- 11: Modern Ex. Of Time-Motion Theory
- 12: Gantt Chart

Ask the class to give specific examples of each of these types (using titles).

<p>3 Bureaucratic and Administrative Management</p> <p>3.1 Max Weber</p> <p>3.2 Henri Fayol</p>	<p>13: Bureaucratic Management</p> <p>14: Aim of Bureaucracy</p> <p>15: Administrative Management: Fayol</p>	
<p>4 Human Relations Management</p> <p>4.1 Mary Parker Follett</p> <p>4.2 Elton Mayo</p> <p>4.3 Chester Barnard</p>	<p>16: Human Relations Management</p> <p>17: Mary Parker Follett</p> <p>18: Constructive Conflict & Coordination</p> <p>19: Constructive Conflict & Coordination</p> <p>20: Hawthorne Studies: Mayo</p> <p>21: Cooperation & Acceptance: Barnard</p> <p>22: Cooperation & Acceptance: Barnard</p>	
<p>5 Operations, Information, Systems, and Contingency Management</p> <p>5.1 Operations</p> <p>5.2 Information</p> <p>5.3 Systems</p> <p>5.4 Contingency</p>	<p>23: Operations, Information, Systems, Contingency</p> <p>24: Operations Management Tools</p> <p>25: Operations Management Tools</p> <p>26: Whitney, Monge, Olds</p> <p>27: Information Management</p> <p>28: Systems Management</p> <p>29: Biz Flix: <i>In Good Company</i></p> <p>30: Contingency Management</p> <p>31: Contingency Management</p>	<p>Launch the video in slide 29 and use questions as a springboard for discussion.</p>

Adjust lecture to include the activities in the right column. Some activities should be done before introducing the concept, some after.

Special Items

Spark a quick discussion by asking students to respond to the following statement:

“Efficiency is exploitation: The studies and techniques developed by Taylor and Gilbreth simply enabled employers to get more work out of their employees.”

Make sure students back up their answers.

Conclusion and Preview

Assignments:

1. Tell students to be ready at the next class meeting to discuss or answer questions on the [Management Decision “Scripted Service”](#).
2. If you have finished covering Chapter 2, assign students to review Chapter 2 and

read the next chapter on your syllabus.

Remind students about any upcoming events.

Lesson Plan for Group Work

Pre-Class Prep for You:

- Set up the classroom so that small groups of 4-5 students can sit together.

Pre-Class Prep for Your Students:

- Bring book.

Warm Up

Begin Chapter 2 by leading students through this series of questions:

- “How long have there been managers?” (since the late 1800s)
- “So if managers have only been around since the late 19th century, does that mean the origin of management dates also to that time?” (yes/no)
- “Explain.”

(If a blackboard is available, begin to write their ideas on it so that a cumulative definition can be derived.)

Content Delivery

Lecture on The Origins of Management (Section 1)

Break for the following group activity:

“Scientific Management”

Divide the class into small groups, and give students roughly 5 minutes to review the What Would You Do? case that opens the chapter. Have students come to an agreement about how they would get the work done (the metal moved) and why they think that method would work.

Have groups share their work with the whole class.

Lecture on Scientific Management (Section 2)

Before lecturing on next section, do the following activity:

“Gantt Charts”

Put the class back into small groups. Give each group a blank Gantt chart, and have them create the chart using a one of the projects below. Make sure ALL groups use the same project so that you can compare ideas across groups after the work is complete.

- Planning a campus fundraiser for the end of the semester
- Mapping out a research project that is due at the end of the semester
- Plan a formal birthday party for a friend or relative

Have groups share their work with the class.

Lecture on Bureaucratic and Administrative Management and Human Relations Management (Sections 3 and 4)

Lecture on Operations, Information, Systems, and Contingency Management (Section 5)

Special Items

Spark a quick discussion by asking students to respond to the following statement:

“Efficiency is exploitation: The studies and techniques developed by Taylor and Gilbreth simply enabled employers to get more work out of their employees.”

Make sure students back up their answers.

Conclusion and Preview

Possible Assignments:

1. Have students work through the [Management Decision, “Scripted Service”](#), at the end of the chapter. To check the work is done, you can either require written answers, or let students know that the next time the class meets, you will call on one of them to present his or her work.
2. Have students do the [Develop Your Career Potential, “Know Where Management Is Going.”](#) Require them to bring in the article and the concept list to the next class meeting. If your class is small enough, spend 5 minutes having students share their results at the beginning of class as a warm-up to the next lecture. Ask a student who has an article based on the content you are going to cover to present last.
3. If you have finished covering Chapter 2, assign students to review Chapter 2 and read the next chapter on your syllabus.

Remind students about any upcoming events

Additional activity

Out-of-Class Project: “Peer Review.” Each group of 4-5 students should work through the Management Team Decision at the end of the chapter. The case deals with developing peer review systems for conflict management and gives the example of a convenient-store employee who foils a robbery, breaking a company policy against heroism. Students will need to draft guidelines for a peer-review process, make a decision using that process, and then determine if peer review was the most appropriate method for deciding the outcome in the case.

Video Lesson Plan – Biz Flix

Because they are so short, the Biz Flix videos are best used to supplement your lesson plan. They are designed to illustrate the content rather than convey all the chapter concepts.

Segment Summary: In Good Company

In Good Company is a 2004 film featuring Dennis Quaid in the role of Dan Foreman, an advertising sales executive at a top publication. After a corporate takeover, Dan is placed under a supervisor half his age named Carter Duryea (played by Topher Grace). In this scene, Duryea is leading an employee meeting and discussing the benefits of corporate synergy. (In fact, the film was originally titled *Synergy*).

Pre-Class Prep for You:

- Preview clip from *In Good Company*.
- Determine how you want to show the video. The clip can be launched from PowerPoint slide 29 in Chapter 2, or from the DVD that goes with the book.
- Make sure you have all of the equipment

Pre-Class Prep for Your Students:

- Bring book.

needed to show the video to the class.

Warm Up Poll the class to see who has seen the movie *In Good Company*. Ask a student who has seen it to give a brief summary to the class. Consider asking students who have seen it to predict which scene they think you will show.

If no one has seen the movie, tell students the movie stars Dennis Quaid as an advertising sales director who has been demoted and placed under the authority of a new director nearly half his age (played by Topher Grace, who plays Eric Forman in *That 70's Show*).

View While watching the clip, instruct students think about whether what Duryea is describing constitutes synergy as defined in the text.

**You may need to show the clip 2 times so that students can a) understand the action in the clip and b) absorb how the clip relates to the chapter content.*

Ask students if what Duryea describes constitutes synergy. If students answer “yes”, ask them, “Why?”; if “no”, then “Why not?” Challenge students to explain their reasoning.

Show the clip one last time.

Follow Up Direct students’ attention to the fact that the clip involves a company that is evidently part of a large conglomerate. Ask students. “Is synergy possible for smaller companies, or even for large companies that are not part of multifaceted conglomerates?”

Video Lesson Plan – Management Workplace

Management Workplace videos can support several in-class uses. The video for this chapter can support an entire 50-minute class and can be used as a springboard into the group lesson plan. The Management Workplace video for Chapter 2, on Original Penguin, is 8.43 minutes long. Below are several activities from which you can choose to illustrate a few chapter concepts through the video.

Pre-Class Prep for You:

- Preview segment on Original Penguin. Topics covered in the video work best with learning points 2-5.
- Review lesson plan.
- Make sure you have all of equipment needed to show the video to the class, including the DVD and a way to project the video.
- Chalk board, white board, or overhead.

Warm Up **Intro:** Open with discussion of management theories discussed in sections 2-5. Create a chart with headings for each type of management theory. Ask students to list the elements of the theories. *[This process can be quickened by assigning students the chart completion as a prior homework assignment. *Chart attached – see below.]*

Ask students if they think it is possible for multiple historic theories to be at play in a single company. For example, can a company use bureaucratic management techniques *and* the administrative management theory of Henri Fayol?

View The clip is 8.43 minutes long. Chris Kolbe regenerated Perry Ellis’ Original Penguin division basically from scratch, initially with only two employees. He

Pre-Class Prep for Your Students:

- Read Chapter 2 before class.
- Bring book.
- *Complete Management Theory chart if assigned.*

says he started as a micro manager, making all decisions. As his staff grew, he eventually became a macro manager. Watch video.

Instruct students to make notes of the management theories referred or alluded to in the video.

Follow Up (In Class) **Intro:** Open discussion by asking students if they saw one or several management theories in practice in the video.

Activity: Ask students to call out elements that they saw in the video or can assume from the video. Write a list on the board if available.

Use the chart created earlier to determine which management theory or theories are at work at Original Penguin.

Spark discussion by asking students if Chris Kolbe’s management style would work in other organizations. Why or why not? Give examples.

Follow Up (After Class) with assignment *Assign students to answer question 1 from the end of the video clip:*
As the organization has grown from just three employees, Chris Kolbe has had to delegate more decisions to others. How important is this transition to Original Penguin’s success as a learning organization? Explain.

You can check the work by having students write out a response, or tell them that you will randomly call on one of them to present their answers during the next class period.

ELEMENTS OF MANAGEMENT THEORIES

Scientific	Bureaucratic	Administrative
Taylor	Qualification-based hiring	Planning
Determine “one best way”	Merit-based promotion	Organizing
Scientific selection/training	Chain of command	Leading
Ensure implementation	Division of labor	Controlling
Divide work	Impartial rules/procedures	
Gilbreth	Recording rules	
Motion studies	Procedures	
Industrial psychology	Written decisions	
Laws for workers	Separate managers/owners	
Gantt		
Gantt task chart		
Performance pay plan		
Worker training		
Human Relations Theory	Operations	Information
Follett	Quantitative approach	New technology development
Interrelated organization	Mathematical approach	
Coordination of key people	Increase productivity	
Coordination in early stages	Improve quality	
Coordination as continuing process	Manage inventories	

Mayo: Hawthorne Studies

Worker feelings/attitudes

Worker motivation

Group norms/behaviors

Barnard

Cooperation w/incentives

Clear organizational objectives

Effective communication

Systems

Parts function as whole

Transform inputs to outputs

Feedback

Modification and Improvements

Contingency

No universal theory

Analyze problem

Fix problem

Assignment Teaching Tips and Solutions

Case Assignment - What Would You Do?

ISG - STEELTON

International Steel Group, Steelton, Pennsylvania. As the day shift supervisor at the steel plant, you summon the six college students who are working for you this summer doing whatever you need done (sweeping up, sandblasting the inside of boilers that are down for maintenance, running errands, etc.). You walk them across the plant to a field where the company stores scrap metal leftovers. The area, about the size of a football field, is stacked with organized piles of metal. You explain that everything they see has just been sold. Metal prices, which have been depressed, have finally risen enough that the company can earn a small profit by selling its scrap.

You point out that railroad tracks divide the field into parallel sectors, like the lines on a football field, so that each stack of metal is no more than 15 feet from a track. Each stack contains 390 pieces of metal. Each piece weighs 92 pounds and is about a yard long and just over 4 inches high and 4 inches wide. You tell the students that, working as a team, they are to pick up each piece, walk up a ramp to a railroad car that will be positioned next to each stack, and then neatly position and stack the metal for shipment. That's right, you repeat, 92 pounds, *walk* up the ramp, and *carry* the metal onto the rail car.

Anticipating their questions, you explain that a forklift could be used only if the metal was stored on wooden pallets (it isn't), if the pallets could withstand the weight of the metal (they would be crushed), and if you, as their supervisor, had forklifts and people trained to run them (you don't). In other words, the only way to get the metal into the rail cars is for the students to carry it. Based on an old report from the last time the company sold some of the metal, you know that over an eight-hour shift workers typically loaded about 30 to 31 pieces of metal parts per hour. At that pace, though, it will take your six students six weeks to load all of the metal, and the purchasing manager who sold it says it must be shipped in two weeks.

So, without more workers (there's a hiring freeze) and without forklifts, all of the metal has to be loaded by hand by these six workers in two weeks. But how do you do that? What would motivate the students to work much, much harder than they have all summer? They've gotten used to a leisurely pace and easier job assignments. Motivation might help, but motivation will only get so much done. After all, short of illegal steroids, nothing is going to work once muscle fatigue kicks in from carrying those 92-pound pieces of metal up a ramp all day long. So, what can you change about the way the work is done to deal with the unavoidable physical fatigue? If you were the supervisor in charge, what would you do?

Sources: J. Gillespie and H. Wolle, "Report on the Establishment of Piecework in Connection with the Loading of Pig Iron, at the Works of the Bethlehem Iron Co., South Bethlehem, PA," 17 June 1899, Taylor Collection, Stevens Institute of Technology,

Hoboken, N.J., Files 32A and 32J; J. Hough and M. White, "Using Stories to Create Change: The Object Lesson of Frederick Taylor's 'Pig-Tale,'" *Journal of Management* 27 (2001): 585–601; E. Locke, "The Ideas of Frederick W. Taylor: An Evaluation," *Academy of Management Review* 7 (1982): 14–24; A. D. Stajkovic and F. Luthans, "A Meta-Analysis of the Effects of Organizational Behavior Modification on Task Performance, 1975-1995," *Academy of Management Journal* 40, no. 5 (1997): 1122–1149; A. D. Stajkovic and F. Luthans, "Behavioral Management and Task Performance in Organizations: Conceptual Background, Meta-Analysis, and Test of Alternative Models," *Personnel Psychology* 56 (2003):155-194; F. W. Taylor, *The Principles of Scientific Management* (New York: Harper, 1911); F. Taylor, "The Principles of Scientific Management," address before the Cleveland Advertising Club, 3 March 1915; Manuscript from the Taylor Collection, Stevens Institute of Technology, reprinted in S. Tsuneo and D. Wren, *Intellectual Legacy of Management Theory*, ser.2, pt. 2, vol. 2 (London: Pickering and Chatto, 2002, 387-441; C. Wrege and R. Hodgetts, "Frederick W. Taylor's 1899 Pig Iron Observations: Examining Fact, Fiction, and Lessons for the New Millennium," *Academy of Management Journal* 43 (2000): 1283-1291; D. Wren, *The History of Management Thought*, 5th ed. (New York: Wiley, 2005).

What Really Happened? Solution

ISG - STEELTON

In the opening case, you learned that six college students had summer jobs working for a supervisor at International Steel Group in Steelton, Pennsylvania. Their task, over the next two weeks, was to load thousands of 92-pound pieces of metal onto nearby railroad cars for shipping. Unfortunately, since the metal pieces were stacked individually and not on pallets, it wouldn't be possible to use a forklift to load them. Likewise, because of a hiring freeze, the supervisor didn't have the option of hiring more workers. In other words, the only way to get the metal parts into the rail cars was for the college students to load them by hand. Previous experience with this task indicated that workers typically carried 30 to 31 metal parts per hour up the ramp into a rail car. At that pace, it would take the six college students six weeks to load all of the metal. Unfortunately, however, the purchasing manager who sold the metal had already agreed to have it all loaded and shipped within two weeks. Your job as a supervisor was to figure out how to solve this dilemma.

That general scenario is actually based on one of the most famous cases in the history of management, the pig iron experiments, which were conducted by Frederick W. Taylor, the father of scientific management, at Bethlehem Steel in Bethlehem, Pennsylvania, in 1899. Bethlehem Steel had 10,000 long tons (a long ton is 2,240 pounds) of pig iron on hand. Each pig was 32 inches long, approximately 4 inches high and 4 inches wide, and weighed, on average, about 92 pounds. After the price of a long ton of pig iron rose from \$11 to \$13.50 per ton, the company sold all 10,000 long tons of pig iron and used work crews to load it onto rail cars for shipping. And, like our college students in the opening case, the laborers at Bethlehem Steel had the job of carrying 92-pound pieces of pig iron up a steep plank and loading them onto a railroad car. Over the course of a 10-hour day, the average laborer could load about 12.5 tons, or 304 to 305 pieces, of pig iron per day; in other words, 30 to 31 pieces per hour. Based on a study analyzing the workers and how long it took them to complete each step involved in loading pig iron, Taylor and his associates, James Gillespie and Hartley Wolle, determined that the average laborer should be able to load 47.5 tons, or 1,156 pieces, of pig iron per day, or 115 to 116 pieces per hour over a 10-hour day. Nearly four times as much! Of course, the question was how to do it. Taylor wrote: "It was our duty to see that the... pig iron was loaded on to the cars at the rate of 47 tons per man per day, in place of 12.5 tons, at which rate the work was then being done. And it was further our duty to see that this work was done without bringing on a strike among the men, without any quarrel with the men, and to see that the men were happier and better contented when loading at the new rate of 47 tons than they were when loading at the old rate of 12.5 tons."

Let's find out what really happened and see what steps Frederick W. Taylor and his associates took to try to achieve this goal.

So, without more workers (there's a hiring freeze) and without forklifts, it all has to be loaded by hand by these six workers in two weeks. But how do you do that? What would motivate them to work much, much harder than they have been all summer? After all, they've gotten used to the leisurely pace and job assignments.

One of Taylor's strongest beliefs was that it was management's responsibility to pay workers fairly for their work, or as Taylor would put it "a fair day's pay for a fair day's work." In essence, in an age of labor

unrest when managers and workers distrusted, if not hated, each other, Taylor was trying to align management and employees so that each could see that what was good for employees was also good for management. Once this was done, he believed that workers and managers could avoid the conflicts that he had experienced at Midvale Steel. And one of the best ways, according to Taylor, to align management and employees was to use incentives to motivate workers. Taylor wrote that "...in order to have any hope of obtaining the initiative of his workmen the manager must give some special incentive to his men beyond that which is given to the average of the trade. This incentive can be given in several different ways, as, for example, the hope of rapid promotion or advancement; higher wages, either in the form of generous piecework prices or of a premium or bonus of some kind for good and rapid work; shorter hours of labor; better surroundings and working conditions than are ordinarily given, etc., and, above all, this special incentive should be accompanied by that personal consideration for, and friendly contact with, his workmen which comes only from a genuine and kindly interest in the welfare of those under him. It is only by giving a special inducement or 'incentive' of this kind that the employer can hope even approximately to get the 'initiative' of his workmen."

So, what kind of incentives did Taylor provide the laborers who were loading pig iron onto the rail cars? Taylor increased worker's pay by 61 percent, from \$1.15 a day to approximately \$1.85 a day, contingent on loading 47.5 tons of pig iron. While that may not sound like much today, imagine if you were offered a 61% increase in pay. For example, since the average business college graduate earns a starting salary of about \$40,000 a year, imagine being offered a \$24,000 increase in pay. Would that increase motivate you? How much harder would you be willing to work for a 61% increase in pay? Here's what Taylor wrote regarding the motivating power of money for Henry Knolle (called "Schmidt" in Taylor's book), who was one of the pig iron handlers: "We found that upon wages of \$1.15 a day he had succeeded in buying a small plot of ground, and that he was engaged in putting up the walls of a little house for himself in the morning before starting to work and at night after leaving. He also had the reputation of being exceedingly 'close,' that is, of placing a very high value on a dollar. As one man whom we talked to about him said, 'A penny looks about the size of a cart-wheel to him.'" When asked whether he wanted to earn \$1.85 per day, what Taylor called a "high-priced man," Knolle, who had immigrated to the United States, responded, "Did I vant \$1.85 a day? Vas dot a high-priced man? Vell, yes, I vas a high-priced man." Taylor wrote: "And throughout this time he [Knolle] averaged a little more than \$1.85 per day, whereas before he had never received over \$1.15 per day, which was the ruling rate of wages at that time in Bethlehem. That is, he received 60% higher wages than were paid to other men who were not working on task work." In fact, the pay increase could be even larger or smaller depending on how much each worker loaded each day. For example, worker Simon Conrad averaged 55.1 tons per day and thus received an average of \$2.07 per day. Likewise, worker Joseph Auer averaged 49.9 tons per day and received an average of \$1.87 per day. Were all workers able to make more money under this incentive system? No, and Taylor indicated that only about one in eight workers was capable of that level of performance at this task. For some, the work was too physically taxing [more on that below], and they were allowed to return to the guaranteed daily wage of \$1.15 per day. But, when Taylor's incentive system was used with workers who were physically capable of performing the job (and Taylor's third principle of scientific management indicates that managers should select workers on the basis of their aptitude to do a job well) the amount of pig iron loaded per day typically increased by a factor of three or four.

In the long run, was Taylor right about the motivating power of money? Yes and no. Yes, in that numerous studies over the last 100+ years show that when financial rewards are clearly tied to performance, they significantly increase individual performance. Do financial rewards work all of the time? No. But, as you'll learn in Chapter 13 on motivation, linking financial rewards to individual performance increases performance 68% of the time in general and 84% of the time in manufacturing settings, such as at Bethlehem Steel. So, how was Taylor wrong about the motivating power of money? Well, to the extent to which the results of the pig iron experiments were considered representative, it should be noted that few others have been able to achieve the quadrupling of performance that was associated with financial incentives in Taylor's pig iron experiments. On average, using individually based financial incentives increases performance "just" 23% to 30%. However, 23% to 30% is still a large increase in performance, and you'll see few companies ignore management ideas that can bring about such large improvements.

And while motivation might help, motivation will only get so much done. After all, short of illegal steroids, nothing is going to work once muscle fatigue kicks in from carrying those 92-pound parts up a ramp all day long. So, what can you change about the way the work is done to deal with the physical fatigue that can't be avoided from this kind of work?

Another of Taylor's controversial proposals was to give rest breaks to workers doing physical labor. We take morning, lunch, and afternoon breaks for granted, but in Taylor's day, factory workers were expected to work without stopping. If they were being paid for 10 hours of work, then they should be working for those 10 hours. When Taylor said that breaks would increase worker productivity, no one believed him. Given the prevalent beliefs of the time, people just didn't comprehend how time spent not working, such as rest breaks, could actually lead to more work getting done. In short, people believed that if you worked fewer minutes, you'd get less done, not more.

However, Taylor understood that especially with physical labor, rest was necessary. (Today we know that rest breaks are needed for all kinds of work.) Taylor wrote: "When a laborer is carrying a piece of pig iron weighing 92 pounds in his hands, it tires him about as much to stand still under the load as it does to walk with it, since his arm muscles are under the same severe tension whether he is moving or not." He further said: "It will also be clear that in all work of this kind it is necessary for the arms of the workman to be completely free from load (that is, for the workman to rest) at frequent intervals. Throughout the time that the man is under a heavy load the tissues of his arm muscles are in process of degeneration, and frequent periods of rest are required in order that the blood may have a chance to restore these tissues to their normal condition." Taylor referred to the fatigue that physical work generated as the law of heavy laboring. He explained: "Practically all such work consists of a heavy pull or a push on the man's arms, that is, the man's strength is exerted by either lifting or pushing something which he grasps in his hands. And the law is that for each given pull or push on the man's arms it is possible for the workman to be under load for only a definite percentage of the day. For example, when pig iron is being handled (each pig weighing 92 pounds), a first-class workman can only be under load 43% of the day. He must be entirely free from load during 57% of the day. And as the load becomes lighter, the percentage of the day under which the man can remain under load increases. Thus, if the workman is handling a half-pig, weighing 46 pounds, he can then be under load 58% of the day and only has to rest during 42%. As the weight grows lighter the man can remain under the load during a larger and larger percentage of the day, until finally a load is reached which he can carry in his hands all day long without being tired out."

Here's Taylor's explanation of how rest breaks were actually used with the pig iron loaders: "Schmidt [the laborer, Henry Knolle] started to work, and all day long, and at regular intervals, was told by the man [one of Taylor's associates] who stood over him with a watch, 'Now pick up a pig and walk. Now sit down and rest. Now walk—now rest,' etc. He worked when he was told to work, and rested when he was told to rest, and at half-past five in the afternoon had his 47.5 tons loaded on the car." Taylor further explained: "Practically the men were made to take a rest, generally by sitting down, after loading ten to twenty pigs. This rest was in addition to the time which it took them to walk back from the car to the pile. It is likely that many of those who are skeptical about the possibility of loading this amount of pig iron do not realize that while these men were walking back they were entirely free from load, and that therefore their muscles had, during that time, the opportunity for recuperation."

Some academicians are critical of Taylor with respect to the short-term effects of rest breaks, pointing out that the pig iron laborers could only work at most for two or three consecutive days at these high levels (i.e., four times the normal workload) before having to take two or three days off to recover from the cumulative physical fatigue of this difficult job. However, under Taylor's plan the workers weren't penalized or exploited because of this. During the two or three days "off" from the high load/high payment plan, they simply moved a smaller number of pig irons under the regular pay plan under which they were guaranteed \$1.15 per day. It can be assumed that during these "off" days, the workers recovered from their heavier work days by only moving the typical 12.5 tons of pig iron per day. Furthermore, even though the physical demands of the work made it likely that most of the workers spent no more than half of their time on the high load/high payment plan, they were able to move so much more pig iron tonnage under that incentive plan (compared to the standard \$1.15 plan) that the overall average cost of handling a ton of pig iron dropped by slightly more than half, from \$0.072 to \$0.033 per ton. However, workers benefited as well, earning somewhere between 30% and 60% more money, depending

on the percentage of days they worked under the high load/high payment plan and how much pig iron they were able to load on those days.

In the end, what can we take away from Taylor's pig iron experiments? This excerpt from a 1915 speech he made to the Cleveland Advertising Club can help us put them into the proper perspective:

Most people think scientific management is chiefly handling pig-iron. I do not know why (laughter). I do not know how they have gotten that impression, but a large part of the community has that impression. The reason I chose pig-iron for the first illustration [of scientific management] is that if you can prove to any one that the strength, the effort of those four principles when applied to such rudimentary work as that, the presumption is that it can be applied to something better. The only way to prove it is to start at the bottom and show these four principles all along the line.

Basically, Taylor's pig iron experiments were intended as a demonstration of the power of his four principles of scientific management, shown below.

- First:** Develop a science for each element of a man's work which replaces the old rule-of-thumb method.
- Second:** Scientifically select and then train, teach, and develop the workman, whereas in the past he chose his own work and trained himself as best he could.
- Third:** Heartily cooperate with the men so as to insure all of the work being done in accordance with the principles of the science which has been developed.
- Fourth:** There is an almost equal division of the work and the responsibility between the management and the workmen. The management takes over all the work for which they are better fitted than the workmen, while in the past almost all of the work and the greater part of the responsibility were thrown upon the men.

In short, if those principles could work extremely well in basic jobs, such as heavy manual labor, then what results might they produce with even more complex tasks and jobs? Taylor summarizes what we should learn as follows.

It is no single element, but rather this whole combination, that constitutes scientific management, which may be summarized as:

- Science, not rule of thumb.
- Harmony, not discord.
- Cooperation, not individualism.
- Maximum output, in place of restricted output.
- The development of each man to his greatest efficiency and prosperity.

Sources: J. Gillespie and H. Wolle, "Report on the Establishment of Piecework in Connection with the Loading of Pig Iron, at the Works of the Bethlehem Iron Co., South Bethlehem, PA," 17 June 1899, Taylor Collection, Stevens Institute of Technology, Hoboken, N.J., Files 32A and 32J; J. Hough and M. White, "Using Stories to Create Change: The Object Lesson of Frederick Taylor's 'Pig-Tale,'" *Journal of Management* 27 (2001): 585-601; E. Locke, "The Ideas of Frederick W. Taylor: An Evaluation," *Academy of Management Review* 7 (1982): 14-24; A. D. Stajkovic and F. Luthans, "A Meta-Analysis of the Effects of Organizational Behavior Modification on Task Performance, 1975-1995," *Academy of Management Journal* 40, no. 5 (1997): 1122-1149; A. D. Stajkovic and F. Luthans, "Behavioral Management and Task Performance in Organizations: Conceptual Background, Meta-Analysis, and Test of Alternative Models," *Personnel Psychology* 56 (2003):155-194; F. W. Taylor, *The Principles of Scientific Management* (New York: Harper, 1911); F. Taylor, "The Principles of Scientific Management," address before the Cleveland Advertising Club, 3 March 1915; Manuscript from the Taylor Collection, Stevens Institute of Technology, reprinted in S. Tsuneo and D. Wren, *Intellectual Legacy of Management Theory*, ser.2, pt. 2, vol. 2 (London: Pickering and Chatto, 2002, 387-441); C. Wrege and R. Hodgetts, "Frederick W. Taylor's 1899 Pig Iron Observations: Examining Fact, Fiction, and Lessons for the New Millennium," *Academy of Management Journal* 43 (2000): 1283-1291; D. Wren, *The History of Management Thought*, 5th ed. (New York: Wiley, 2005).

Close-ended assignment

ISG Steelton

A day-shift supervisor at an International Steel Group plant in Steelton, Pennsylvania is informed that the company's collection of scrap-metal has just been sold. The metal is stored in a football-field-sized area, divided by parallel sets of railroad track such that stacks of metal are no more than 15 feet from a track. Each stack contains 390 pieces of metal. Each piece of metal is about 3 feet long, 4 inches high, 4 inches wide, and weighs 92 pounds. The metal must be moved into railroad cars for shipping.

A few challenges present themselves here. First, the metal must be moved manually. There are no forklifts, and even if there were, there aren't any people properly trained to operate them. Further, the piles of steel would be too heavy for wooden forklift pallets in the first place. The supervisor has six college students on staff for the summer, and due to a hiring freeze, no more can be acquired. Their work so far has been relatively light. Based on an old report from a similar project, workers could typically load about 30 pieces per hour during an 8-hour shift. At that rate, the current project would take six weeks to finish. The purchasing manager who sold the scrap needs it packed and shipped in two.

The supervisor must deal with two major difficulties. First, if the work crew is going to pick up the pace to get the job done, they will need some serious motivation. Even with sufficient motivation, however, physical fatigue is inevitable. Therefore, something must be done to make the labor more manageable.

This case is based on the pig iron experiments run by Frederick Taylor, the father of scientific management, in 1899. In a similar setup, through observing the loading process, Taylor determined that each laborer should actually be able to move about 115 bars of pig iron an hour in a 10-hour work day—nearly four times as much! At the same time, he was able to do this in an age of labor unrest leaving his men happier and more content while working at this higher production rate.

Taylor strongly believed in offering his workers fair pay. He wrote, “the manager must give some special incentive to his men,” if he is to gain their initiative. Thus, Taylor began by offering his workers a 60% pay increase, if they could meet the 115 bar loading quotas. Given these incentives, some men could move even more and were paid accordingly.

Not all men could do this, however. Physical limitations did not always allow it. In Taylor's day, workers paid for 10 hours were expected to work 10 hours straight. Taylor realized that especially with physical labor, fatigue would be an issue, thus, Taylor introduced work breaks. When the cumulative fatigue of heavier days added up, the men were given “off” days, working for base pay at the lower rate. Through Taylor's system, handling costs for pig iron dropped by almost half, while workers earned 30-60% more.

1. Frederick Taylor's pig iron experiment is a case study in _____.
 - a. bureaucratic management
 - b. constructive conflict
 - c. scientific management
 - d. administrative management
 - e. the Hawthorne Studies

ANS: C

Scientific management involves the thorough study and testing of work methods to identify the best, most efficient ways to complete a job. Taylor used this method in the pig iron experiment to maximize his workers' output while keeping them happy and satisfied. See Section 2.1 Father of Scientific Management: Frederick W. Taylor.

2. In Taylor's day, workers hired for a 10-hour day were expected to work 10 hours straight. Through systematic study of the work process, Taylor discovered that giving workers periodic work breaks would _____.
 - a. reduce the number of bars each laborer moved
 - b. allow workers to periodically recuperate from their work, enabling them to work at greater capacity and meet the projected quotas

- c. indulge their lazy impulses by working less
- d. reduce the weight of the bars the men were carrying
- e. do nothing at all

ANS: B

Taylor's studies indicated that when given frequent rest breaks, especially in the case of physical labor, workers' production outputs greatly increased. See Section 2.1 Father of Scientific Management: Frederick W. Taylor.

- 3. Taylor's rest breaks are an example of which scientific management principle?
 - a. Develop a science to determine the one best way of doing the work.
 - b. Scientifically select, train, teach, and develop workers to their full potential.
 - c. Cooperate with workers to ensure implementation of the scientific principles.
 - d. Divide the work equally between the management and the workers.

ANS: A

Taylor's studies indicated that rest breaks greatly improved worker production outputs in comparison to outputs under the old rule-of-thumb method of making workers work straight through their shifts. See Section 2.1 Father of Scientific Management: Frederick W. Taylor.

- 4. Taylor believed that incentives were an excellent means of motivating workers. One of his most effective methods, _____, offered workers pay bonuses corresponding to increased production.
 - a. piece rate incentives
 - b. a fair day's work
 - c. motion study
 - d. *The Theory of Economic and Social Organization*
 - e. integrative conflict resolution

ANS: A

With piece rate incentives, work pay is tied directly to how much workers produce. In the pig iron experiment, Taylor offered workers a 60% pay increase if they could meet his projected quotas of 115 bars per hour. See Section 2.1 Father of Scientific Management: Frederick W. Taylor.

- 5. Taylor's scientific management method increased worker production by offering pay incentives and giving workers rest breaks. Which of the following methods might Taylor also have used to increase individual worker production in the pig iron experiments?
 - a. time study
 - b. motion study
 - c. Gantt charts
 - d. descriptive geometry
 - e. integrative conflict resolution

ANS: B

Taylor's system already employed a form of time study, in which Taylor calculated the amount of work a single man could produce in a given period of time with breaks, then offered corresponding pay incentives. Motion studies are particularly useful for manual labor. In the pig iron experiments, motion studies could help analyze the motions involved in moving the steel and eliminate the unnecessary or repetitive ones. See Section 2.2 Motion Studies: Frank and Lillian Gilbreth.

- 6. Taylor's work-based pay incentives and work breaks are examples of the products of the leadership function. Leadership is one of the managerial functions of_____.

- a. bureaucratic management
- b. constructive conflict
- c. motion studies
- d. systems management
- e. administrative management

ANS: E

Henri Fayol developed theories of administrative management. As we learned in Chapter 1, Fayol identified five major managerial functions that factored into a manager's administrative ability, upon which, Fayol claimed, the success of most enterprises rested. See Section 3.2 Administrative Management: Henri Fayol.

7. Increased pay rates for workers achieved along with increased production rates and lower expenses confirmed Taylor's assertion that _____.
- a. a fair day's work deserved a fair day's pay
 - b. rest breaks were necessary to getting the work done
 - c. the interests of management coincide with those of the workers
 - d. workers were inherently lazy
 - e. with very small incentives, workers could be used to dramatically decrease a company's scrap

ANS: C

Taylor offered his workers compensation commensurate with their productivity. As a result their production increased in ways beneficial to the company, thus indicating that attending to the interests and well being of the worker could actually improve company productivity. See Section 2.1 Father of Scientific Management: Frederick W. Taylor.

8. In a case study of one of his workers, Taylor wrote, "He worked when he was told to work, and rested when he was told to rest, and at half-past five in the afternoon had his 47.5 tons loaded on the car." Which of the four steps of scientific management is this an example of?
- a. Develop a science to determine the one best way of doing the work
 - b. Scientifically select, train, teach, and develop workers to their full potential
 - c. Cooperate with worker to ensure implementation of the scientific principles
 - d. Divide the work equally between the management and the workers

ANS: C

By assigning a manager to the worker to instruct him in his task, the manager ensures that the method and the scientific principles are properly implemented and the worker has what he needs to do the job. As a result, the worker was able to reach his daily work quota. See Section 2.1 Father of Scientific Management: Frederick W. Taylor.

9. Frederick Taylor sought to find the "one best way" of performing a task. Identify one method that might be used to determine the one best way of doing a particular task.
- a. motion study
 - b. synergy
 - c. the contingency approach
 - d. the Hawthorne Effect
 - e. bureaucracy

ANS: A

By applying motion study to brick laying, Frank Gilbreth identified the particular motions involved in the

process, then eliminated ones that were unnecessary or repetitive. This helped increase productivity. See Section 2.2 Motion Studies: Frank and Lillian Gilbreth.

10. Taylor developed a method of loading the bars and would give that plan to an overseer. Based on that plan, the overseer would then instruct the worker on when to work and when to rest. This is an example of _____, one of the main elements in a bureaucracy as described by Max Weber.
- qualification-based hiring
 - merit-based promotion
 - chain of command
 - division of labor
 - impartial application of rules and procedures

ANS: C

In the chain of command, each job occurs within a hierarchy, in which each position reports and is accountable to a higher position. Thus, the overseer receives his orders from Taylor, and the worker receives his from the overseer. The worker is accountable to the overseer to follow his instructions, and when the work is completed, the overseer reports back to Taylor. See Section 3.1 Bureaucratic Management: Max Weber.

Management Decision

SCRIPTED SERVICE

Purpose

The purpose of this exercise is for students see that historical management theories are still informing how work is organized and assigned today. Scripted speech is an example of how Frederick Taylor's principles of scientific management and the standardization of manufactured parts and products have been appropriated by the service industry. Everyone (or nearly everyone) encounters scripted speech every day. Scripted interactions are a part of our common experience, from the derided "Do you want fries with that?" to the ubiquitous "Have a nice day."

Setting It Up

This exercise can be used as an individual assignment, a group assignment, or a hybrid of the two. Students can turn in individual assignments for a grade. Groups can present their work in class. Alternatively, you can have students complete the bulk of the work on their own. Then, in class, divide students into groups of 4 to 5 members each and have them share their work (their scripts, the reasons that motivated them to write it how they did, and whether they would implement it).

SCRIPTED SERVICE

Questions

- 1. Which historical management technique best describes scripted service speech and scripted employee behaviors? Explain your choice.**

The trend toward establishing best practices, or standardized employee language and behavior, are most arguably the descendants of Frederick Taylor's scientific management theories. Taylor was interested in finding the one best way of doing a job and then committing employees to complete the work in that manner. That way, Taylor was able to eradicate variability, ensure reliable work, and increase productivity. Scripted speech falls under Taylor's first principle: Develop a science for each element of a man's work. Customer interactions constitute the element being analyzed to determine the best way to conduct them. According to Taylor's second principle, workers should be trained in this science, which is definitely occurring with scripted service encounters. The case mentions the routine that servers at Olive

Garden restaurants are supposed to memorize and execute during every shift. Taylor's third principle involved management support of employees to ensure work is carried out according to the science. In the context of service encounters, managers might enlist secret shoppers to verify employees are following the predetermined script. For example, a cashier at Claire's Boutique might be required to direct customers' attention to the fact that the bracelets in boxes by the register are 3 for \$5 in the hopes that the customers' will add some bracelets to their purchase before the clerk has completed the sale.

2. Do you implement a customer-encounter script at your bakeries? Why or why not?

Students' answers will vary. Reasons to implement a service script at the bakeries include the ability of the script to function as a training tool for new hires, further assurance that those new hires will have appropriate interactions with customers, and the ability to systematically try to increase sales by suggestion selling (for example, by asking if customers need any bread, want to buy dessert for tonight's meal, etc.). Reasons students may choose not to write a service script for the bakeries include pursuing a differentiation strategy from the bigger retailers and foodservice providers, allowing employees to exercise some control over how they do their jobs, the difficulty of monitoring if employees are following or deviating from the script.

One way around the strictures of a script would be to create guidelines for customer interactions. For example, the owner could coach employees to say hello to customers when they enter the bakery; if the customer is a long-time patron of the bakery and the employee knows the person, to ask how the customer is doing and engage in personal conversation for a moment; and to thank customers for their business and tell them you hope to see them again soon.

3. Imagine that you have decided to implement a script for your frontline employees. Write the service script for bakery clerks.

Students will have different ways of approaching the script. Some may simply make a list of the things an employee needs to do during each interaction; others may actually time each part of the script, like the Olive Garden example in the case itself. Ask students to postulate the ultimate results of implementing their scripts, which will force them to clarify their thinking. What was the rationale behind creating their scripts as they did? Assembling small groups in which students share their scripts and discuss their reasoning may reveal to students the differences between intentions and eventual consequences.

Management Team Decision

PEER REVIEW FOR CONFLICT RESOLUTION

Purpose

The purpose of this exercise is for students to think about how to use peer review panels in the workplace to resolve problems and make decisions.

Setting It Up

Divide your students into teams of 4 to 6 members. As a warm-up, you may wish to ask if anyone in the class has worked at a convenient store, and if so, if he or she has even been a victim of a store robbery. You may also wish to consult the articles that were the inspiration for this exercise: M. Clark, "A Jury of Their Peers: Giving Employees a Say in Resolving Each Other's Workplace Disputes Can Pay Big Cultural Dividends," *HRMagazine*, January 2004, 54-60; A. Cybulski, "People's Court: Operators Are Taking a Second Look at Peer Review to Resolve Workplace Conflicts," *Restaurant Business*, 15 September 1997, 43-46.

Questions

1. Which historical management theory gives the best justification for implementing peer review systems? Which theory would not support peer reviews?

Students will most likely reply that Mary Parker Follett's theory of integrative conflict resolution is the best justification for peer review. She believed the best overall outcome could be achieved by management and employees from different areas of the organization coordinating their efforts to resolve problems in an integrative way. Because peer-review systems can pull panelists from a wide-variety of job descriptions, share decision-making power (Follett's "power-with" idea), and focus on control of the facts rather than the personalities, peer-review is definitely justified by Follett's theories.

In addition, students might indicate that bureaucratic management provides justification for peer-review panel in as much as peer review seeks to enforce rules in a consistent manner. That like bureaucracy, which is defined as the exercise of control based on knowledge, expertise, or experience, peer-review participants might be in the best position to understand the facts related to an incident. Bureaucracy, however, has for one of its tenets a strictly formed hierarchy and chain of command, which run counter to the more egalitarian idea of peer-review.

Likewise, students might answer that Barnard's theories of cooperation provide justification for peer review, since he postulated that it is workers who ultimately give managers their authority. As such, managers who involve employees, clearly formulate objectives, and provide incentives for desired behaviors will induce willing cooperation from employees.

Operations and information management theories focus on processes rather than on the human aspects of work. So do scientific and administrative management, which are more concerned with the organization of work and the functions of management.

2. Do you implement a peer review process in the convenience store scenario? Explain your decision.

Reasons students might choose to implement a peer review process include the following:

- Employees generally find resolutions handed down by peers to be credible and acceptable.
- Peer review is practical and cost effective.
- Peer review keeps the conflict resolution in the family, so to speak, and keeps it out of the courts or mediation.

Students might decide against implementing peer review systems for the following reasons:

- High employee turnover would require constant training of new panelists.
- Complex work environments may make panels ineffective in deciding certain issues.
- Ongoing training and time away from work can mean that the costs of running such a program are too high to be reasonable.
- Managers lose a measure of control in the outcome of the decision and ultimately in the formation of the corporate culture, of which rules and policies are an expression.

3. Regardless of your decision from question 2, works as a team to draw up guidelines for a peer-review process. What would you need to consider if you were to create a review panel? For example, do you need to set restrictions on the ratio of employees to managers on the panel? Will there even be managers on the panel? How many years of service should an employee have to participate? Should the panel include a mix of employees from different departments?

Companies need to consider many issues before implementing a peer-review program. For example, if an organization has trouble giving up control of decision making, it would not be a good candidate for a peer-review process. In other words, the more hierarchical an organization's structure, the less likely it would be a good fit for peer review. Another issue to consider is the status of the company's labor relations. Peer-review processes can be seen as a union-avoidance tactic. Whereas unions are considered external representatives of employees' concerns, a peer-review system might be construed as a management tool to replace that representation. Before implementing peer-review systems, companies also need to consider the boundaries it will establish for the panel. Without a well-defined scope, review

panels might be perceived as “running the company,” which could have a negative impact on management control.

Before instituting peer review, companies need to assess the responsibility of their employees. Does the company have a workforce made up of responsible people? Do the employees really care about the business? Are managers and employees capable of working together to solve problems? Typically, a peer-review panel does not include managers. In fact, panels generally offer employees a way to voice disagreement with management decisions. For example, when a waitress at Hooters was fired for automatically adding a gratuity to a check (against the restaurant’s policy but in accordance with an order from a former supervisor), she appealed to a peer jury. The peer jury found her claim had merit and rehired her.

Review your students’ list of issues and make sure they have thought of things like time, effort, maintenance, training, corporate culture, corporate structure, panel structure, and legal implications.

- 4. Now, following the guidelines you established in question 3, imagine that your team is the review panel for the convenience store clerk who foiled a robbery. Discuss the situation and come to a decision regarding the outcome. Do you fire the employee, warn the employee, or commend his actions?**

Students’ answers will vary. In the actual case, the peer-review panel fired the employee because he clearly violated a strictly enforced and widely known company policy against heroism. The panel sided with management because they understood it was a rule violation; they considered the employee’s story one of bravado rather than bravery.

Practice Being a Manager

OBSERVING HISTORY TODAY

The topic of management history may sound like old news, but many of the issues and problems addressed by Max Weber, Chester Barnard, and other management theorists still challenge managers today. *How can we structure an organization for maximum efficiency and just treatment of individuals? What is the basis for, and limits to, authority in organizations?* It is rather amazing that these thinkers of the late 19th and early 20th centuries generated such a wealth of theory that still influences our discussion of management and leadership challenges in the 21st century. This exercise will give you the opportunity to draw upon some ideas that trace their roots back to the pioneers of management thinking.

Preparing in Advance for Class Discussion

Step 1: Find an observation point. Identify a place where you can unobtrusively observe a group of people as they go about their work. You might select a coffee shop, bookstore, or restaurant.

Step 2: Settle in and observe. Go to your selected workplace and observe the people working there for at least 20 minutes. You should take along something like a notebook or PDA so that you can jot down a few notes. It is a good idea to go during a busy time, so long as it is not so crowded that you will be unable to easily observe the workers.

Step 3: Observe employees at work. Observe the process of work and the interaction among the employees. Consider some of the following issues:

- Identify the steps that employees follow in completing a work cycle (for example, from taking an order to delivering a product). Can you see improvements that might be made, particularly steps that might be eliminated or streamlined?
- Observe the interaction and mood of the workers. Are they stressed? Or are they more relaxed? Does it seem to you that these workers like working with each other?
- Listen for signs of conflict. If you see signs of conflict, is the conflict resolved? If so, how did the workers resolve their conflict? If not, do you think that these workers suppress (bottle up) conflict?
- Can you tell who is in charge here? If so, how do the other workers respond to this person’s directions? If not, how does the work group sort out who should be doing each task, and in what order?

Step 4: Consider what you saw. Immediately after your observation session, look through this chapter on management history for connections to your observations. For example, do you see any signs of the “Hawthorne effect”? Would Fredrick Taylor approve of the work process you observed, or might he have suggested improvements? What might Chester Barnard’s theory have to say about how the workers you observed responded to instructions from their boss? Write a one-page paper of bullet-point notes describing possible connections between your observations and the thinking of management pioneers such as Mary Parker Follett.

Class Discussion

Step 5: Share your findings as a class. Discuss the various points of connection you found between pioneering management thinkers and your own observations of people at work. Are some of the issues of management timeless? If so, what do you see as timeless issues of management? What are some ways in which work and management *have changed* since the days of the management pioneers?

TEACHING NOTES – PRACTICE BEING A MANAGER

Exercise Overview and Objective

In this exercise, students will spend some time (20 minutes minimum) observing people at work. The objective of this exercise is for students to see—in a live context—the problems and challenges that interested management thinkers of the past. One of the most basic starting points for understanding the field of management is simply to observe *people at work*. Observation was the starting place for such pioneers as Fredrick Taylor, Charles Barnard, and Max Weber. And it is the starting place for many of today’s most influential management scholars. Also, this exercise should help students understand that historical contributions were made by pioneering individuals who wrestled with questions and issues that continue to challenge management thinkers today.

Assign Step 1 at least one class session prior to the session in which you would like to complete this exercise. You may want to allow more time, as the observation requires students to identify an appropriate site and unobtrusively observe work there for at least 20 minutes. You may want to explain “unobtrusive.” Students should be able to naturally observe the work at this site for at least 20 minutes without drawing attention to themselves or otherwise changing the natural flow of work. Some good examples are given in the instructions to Step 1:

- Bookstore
- Coffee Shop
- Restaurant

These worksites are places where patrons commonly hang out and enjoy a latte or browse the bookshelves. You may want to caution students not to attempt to spy on anyone and/or to misrepresent themselves to a security guard, manager, etc. It is ethical to observe work/workers in public spaces but a serious ethical violation to spy on workers in private spaces and/or to misrepresent one’s intentions. Students may want to number or otherwise identify workers (e.g., Worker 1, Manager, and Worker 2). Students should use a shorthand (e.g., W-2 for Worker 2) to ease note taking. Discourage students from using real names or other means of personal identification and from recording anything of a sensitive/private nature. Instead of capturing the word-by-word dialogue of two workers gossiping about a third worker, simply record “W-1 and W-2 in private conversation for 3 minutes.”

Announce that students should read the bullet items in Step 3 before they arrive at their place of observation. This will help them to know what they are watching for and also to better organize their observation notes. Finally, remind student that Step 2 instructs them to take along whatever they need to take notes (e.g., notepad, PDA).

The one-page paper (see Step 4) should be completed as soon after the observations as possible. It is best if students plan to write this paper immediately after their observations.

In-Class Use

Class discussion should follow the submission of the papers. Some instructors prefer to read the papers and discuss them in a subsequent session. Other instructors prefer to discuss the findings on the day the papers are submitted. Either approach is fine here, so long as the time lag between student observations and class discussion is kept to a minimum.

The class discussion may proceed in a linear fashion through the major sections of the chapter, with discussion of connections to the student observations by section. Alternatively, you may want to lead a non-linear discussion of students' observations/connections. In either case, discussion should aim to:

- Share the experience of observing people at work—what might observation contribute to our understanding (vs., say, reading about a particular workplace)?
- Identify at least a few of the timeless themes in management study. (See the questions in Step 4 of the exercise related to the Hawthorne effect, Chester Barnard's theory of authority, etc.)
- Identify at least a few of the ways in which work and management may have changed since the era when studied by the pioneers in management thought (e.g., shifts in communication driven by email, computer networks)

Develop Your Career Potential

KNOW WHERE MANAGEMENT IS GOING

This assignment is designed to encourage students to begin tracking management trends and theories on a daily basis. As patterns emerge, students will better be able to anticipate shifts in management ideas prompted by changes in the complex general and specific environments.

Organizing the Discussion

Students are given four tasks: finding a press article that discusses some of the topics covered in the book (all chapters); writing a brief summary of that article; researching unfamiliar terms; situating the material in the context of the history presented in Chapter 2 (if possible).

One way to use this activity in class starts by having each student give a single-sentence description of his or her article and identify the periodical in which it was published and the date. Doing this, students will be able to listen for recurring themes and think about them in a temporal fashion. Then, write or project the table of contents on the board. Ask students to raise their hand when you call out a chapter to which they think their article relates. Students may raise their hand more than once, depending on the article they read. Alternatively, after students give their brief summaries, you can simply indicate which chapters seem to be more frequently represented. Divide the students into groups based on the chapters to which their articles most closely relate. In small groups, have each student share his or her brief summary and how they think the subject of the article relates to the management theories presented in the chapter. Ask each group to think about implications of the articles or conclusions they can draw about how their topic is evolving in the real world. For example, if a group of students chose articles on teams and teamwork, can it draw any conclusions about challenges (or lack thereof) companies seem to be facing when implementing teams?

Another way to organize the discussion is to ask students about the connections they made between management history and current management news. Ask if, based on their article, they think historical management theories are relevant for today's workforce. If they answer yes, have them say why. If they answer no, ask them to explain why not.

Remind students that most business periodicals have sections related to management. *The Wall Street Journal* has features titled "Cubicle Corner," "In the Jungle," "Work and Family," and others that focus on management issues. *Fortune* has regular features like "Ask Annie," and *Fast Company* includes a column called "Corporate Shrink" and an interview with a manager called "What I Know Now."

Take Two – Biz Flix

IN GOOD COMPANY

1. Does Carter Duryea’s explanation of synergy reflect the discussion of synergy in Section 5.3?

It does. Carter is describing how subsystems of a single parent company can integrate various aspects of their products and services to increase the sale, exposure, and overall performance of the parent. His discussion of synergy weaves together elements from the advertising division of his sports magazine with the editorial (content) division and sister cereal and cell-phone companies. The energy of his presentation indicates his belief that by integrating these elements, his advertising sales division will be able to increase ad placements and revenues and offer greater exposure for sister companies. This is an example of the $1 + 1 = 3$ formula mentioned in the text.

2. What potential downside with Carter’s plan does Dan identify during the meeting? Do you agree with Dan or Carter?

Dan raises the issue that swapping sports factoids for ad pages could be construed as cheating. In other words, the number of ad pages sold would be inflated because of these inter-company exchanges. Students who agree with Dan might cite unfair competition as a reason, or they may find the idea of forcing a company into an arrangement for the purposes of overarching synergy to be counterproductive or offensive. Students who agree with Carter may consider synergy to be nothing more than integrating and taking advantage of all assets, and therefore increasing corporate return on investment (return on assets).

3. What kind of system is Carter Duryea describing in the clip? Explain.

Carter is describing an open system, or a system that can sustain itself only by interacting with its environment, on which it depends for survival. Because the majority of Carter’s speech references various subsystems within the media and consumer-products conglomerate for which he works, students might be tempted to say he is describing a closed system, which the text defines as being able to sustain itself without interacting with its environments.

Carter does, however, mention the competitive environment during the portion of his speech regarding Krispity Krunch cereal, which indicates he is describing an open system. The only thing that will set Krispity Krunch apart from the competing cereal, which tastes identical, will be the sports factoids supplied by the magazine and printed on the Krispity Krunch cereal box. During the same part of the speech he recognizes the sociocultural elements of his environment when he mentions “Joe couch potato” and his interest in sports trivia.

Take Two – Management Workplace

ORIGINAL PENGUIN

1. Where does Chris Kolbe’s authority come from? How do his ideas about authority compare to those of Mary Parker Follett?

Follett said, “There is an increasing tendency to let the job itself, rather than the position occupied in a hierarchy, dictate the kind and amount of authority.” This means that authority is based on knowledge and experience, not position. Kolbe characterizes his leadership style as casual, not using a lot of offices or secretaries. Kolbe bases his authority on performance, commitment, and dedication to the way he approaches things, not a hierarchical status. He communicates directly with people, and they take him seriously. He also tries to achieve a balance of fun and seriousness and a balance between exercising authority and allowing employees to make decisions.

2. Kolbe likes to use one-on-one communication with his employees. Is this a good idea? Why or why not?

Kolbe does not like to schedule a lot of large meetings because he feels they can be stifling. This also gives him the opportunity to engage people in their individual work and offer them personal feedback on their projects. This has a positive effect on employees. Marketing Manager Laura Bellafronte says that Kolbe is approachable, he listens, and that he's open to ideas. These kinds of things make employees feel comfortable working for him and will inspire them to perform better.

3. Chester Barnard claimed that managers need to encourage workers' willing cooperation through incentives. How does Kolbe do this?

Kolbe motivates his employees by making them comfortable in their work environment and bringing them into the broader picture of what the company is doing. This can inspire them by offering them a personal stake in the company's work.

Pushing people to excel, giving them a sense of ownership of their work, and giving them a strong sense of purpose are things that Kolbe offers his employees.

One kind of incentive Barnard suggests is an associational incentive. Associational incentives are opportunities for employees to work with people they like or to be more directly involved in key events or processes in the organization. Kolbe does this by engaging his employees in the broader picture and giving them a sense of ownership of their work. Barnard also suggested that by formulating an organization's purpose and objectives, executives can unify people by making clear what needs to be accomplished. Kolbe's direct style and one-on-one communication helps him communicate purpose and objectives to his employees.

Review Questions

1. Why do modern companies need managers?

Different from cottage industries and craftsmen, modern companies employ thousands of workers (unskilled, skilled, and professional) who produce both standardized and customized products and services. As a result, managers are needed to impose order and structure, to motivate and direct these large groups of workers, and to plan and make decisions that optimize overall company performance by effectively coordinating the different parts of complex organizational systems.

2. How are historical management ideas and practices related to the topics you will study in this textbook?

Each management theorist presented in Chapter 2 has left his or her imprint on modern management study. Therefore, throughout this book, you will experience the extensions of many of their theories. Henri Fayol's classic management functions—distilled down to planning, organizing, leading, and controlling—provide the underlying architecture for the contents of the book. Frederick Taylor's scientific management theories have implications for issues of job design and specialization covered in Chapter 9; teamwork covered in Chapter 10; and compensation covered in Chapter 11. Henry Gantt's contributions are evoked in Chapter 6 on planning and decision making, and Mary Parker Follett's work resurfaces in the section on group decision making and managing conflict, and in Chapter 15 on communication. Elton Mayo's work informs Chapter 10 on managing teams, and Chester Barnard's theories can be seen in Chapter 9 on designing organizational structures. Systems management is covered in Chapter 3, information management in Chapter 17, and operations management in Chapter 18.

As you can see, the early management theories are still providing a foundation on which the modern study of management is being built.

3. Explain the contributions of Taylor, the Gilbreths, and Gantt to the theory of scientific management.

In contrast to “seat-of-the-pants” management, scientific management recommended studying and testing different work methods to identify the best, most efficient ways to complete a job. According to Frederick W. Taylor, the father of scientific management, managers should follow four scientific management principles. First, study each element of work to determine the “one best way” to do it. Second, scientifically select, train, teach, and develop workers to reach their full potential. Third, cooperate with employees to ensure implementation of the scientific principles. Fourth, divide the work and the responsibility equally between management and workers. Above all, Taylor felt these principles could be used to align managers and employees by determining a “fair day’s work,” what an average worker could produce at a reasonable pace, and “a fair day’s pay,” what management should pay workers for that effort. Taylor felt that incentives were one of the best ways to align management and employees.

The husband and wife team of Frank and Lillian Gilbreth are best known for their use of motion studies to simplify work. While Taylor used time study, how long it took a “first-class man” to complete each part of his job, to determine “a fair day’s work,” Frank Gilbreth used film cameras and microchronometers to conduct motion study to improve efficiency by categorizing and eliminating unnecessary or repetitive motions. The Gilbreths also made significant contributions in rehabilitating and employing handicapped workers, encouraging the government to rehabilitate them, employers to identify jobs that they could perform, and engineers to adapt and design machines they could use. Lillian Gilbreth, one of the first contributors to industrial psychology, originated ways to improve office communication, incentive programs, job satisfaction, and management training. She also convinced the government to enact laws regarding workplace safety, ergonomics, and child labor.

Henry Gantt is best known for the Gantt chart, which graphically displays when a series of tasks must be completed to perform a job or project, but he also developed ideas regarding pay-for-performance plans (where workers were rewarded for achieving higher levels, but not punished if they didn’t) and worker training (all workers should be trained and their managers should be rewarded for training them).

4. Compare bureaucratic and administrative management.

German sociologist Max Weber is credited with the development of bureaucracy and bureaucratic management theories. That is, running organizations on the basis of knowledge, fairness, and logical rules and procedures rather than on the basis of nepotism, the prospects for personal gain, and arbitrary decision making. Bureaucracies are characterized by seven elements: qualification-based hiring; merit-based promotion; chain of command; division of labor; impartial application of rules and procedures; recording rules, procedures, and decisions in writing; and separating managers from owners. Nonetheless, bureaucracies are often inefficient and can be highly resistant to change.

Administrative management was the brainchild of Frenchman Henri Fayol, who argued that the success of an organization depended more on the administrative ability of its leaders than on their technical ability. Out of that postulate, Fayol developed 5 management functions (planning, organizing, coordinating, commanding, and controlling) and 14 principles of management (division of work, authority and responsibility, discipline, unity of command, unity of direction, subordination of individual interests to the general interest, remuneration, centralization, scalar chain, order, equity, stability of tenure of personnel, initiative, and *esprit de corps*). He is also known for his belief that management could and should be taught to others.

5. Explain the principles of Mary Parker Follett’s human resource management.

Unlike most people who view conflict as bad, Mary Parker Follett, the mother of modern management, believed that conflict could be a good thing, that it should be embraced and not avoided, and that, of the three ways of dealing with conflict (domination, compromise, and integration), the latter was the best because it focuses on developing creative methods for meeting conflicting parties’ needs. Follett also used four principles to emphasize the importance of coordination where leaders and workers at different levels and in different parts of the organization directly coordinate their efforts to solve problems and produce the best overall outcomes in an integrative way. Her work added significantly to modern understandings of the human, social, and psychological sides of management.

6. What lessons did we learn from the Hawthorne studies? Summarize Barnard’s contributions on cooperation and acceptance of authority.

The Hawthorne Studies conducted at the Western Electric Company occurred in two stages. In the first stage of the Hawthorne Studies, production went up because the amount and quality of attention paid to the workers in the study and their development into a cohesive work group led to significantly higher levels of job satisfaction and productivity. In the second stage, productivity dropped because the workers had already developed strong negative norms, in which individual rate busters who worked faster than the rest of the team or cooperated with management were ostracized or “binged.” The Hawthorne Studies demonstrated that workers’ feelings and attitudes affected their work, that financial incentives weren’t necessarily the most important motivator for workers, and that group norms and behavior play a critical role in behavior at work.

Chester Barnard emphasized the critical importance of willing cooperation in organizations and said that managers could gain workers’ willing cooperation through three executive functions: securing essential services from individuals (through material, nonmaterial, and associational incentives), unifying the people in the organization by clearly formulating the organization’s purpose and objectives, and providing a system of communication. Finally, although most managerial requests or directives will be accepted because they fall within the zone of indifference, Barnard maintains that it is more effective to induce cooperation through incentives, clearly formulating organizational objectives, and effective communication throughout the organization. Ultimately, he says, workers grant managers their authority, not the other way around.

7. Discuss the contributions of Whitney and Monge to operations management.

Operations management uses a quantitative or mathematical approach to find ways to increase productivity, improve quality, and manage or reduce costly inventories. Eli Whitney invented the concept of interchangeable parts, which ultimately led to companies being able to standardize products and produce them in mass quantities. Efficient standardization, however, would not have been possible without the contributions of Gaspard Monge, who developed and outlined techniques for proportional rendering of three-dimensional objects. Monge’s drafting techniques are the foundation of modern computer-aided drafting and manufacturing capabilities.

8. How do companies use systems management to make sense of organizational and environmental complexity?

Organizational systems obtain inputs from the general and specific environments. Rather than viewing one part of an organization as separate from the other parts, a systems approach encourages managers to look for connections between the different parts of the organization. The systems approach also forces managers and workers to view their organization as part of and subject to the competitive, economic, social, technological, and legal/regulatory forces in their environment. Managers then use knowledge gained from those understandings to create products and services, which are then consumed by persons or organizations in the environment. Then, those consumers provide feedback to the organization, allowing managers and workers to modify and improve their products or services.

9. Identify the major milestones in the history of managing information.

Historically, some of the most important technologies that have revolutionized information management were the use of horses in Italy in the 1400s, the creation of paper and the printing press in the fourteenth and fifteenth centuries, the manual typewriter in 1850, vertical file cabinets for storage of information, the telegraph in the 1860s, cash registers in 1879, the telephone in the 1880s, time clocks in the 1890s, the personal computer in the 1980s, and the Internet in the 1990s.

10. Explain contingency management.

The contingency approach to management precisely states that there are no universal management theories. The most effective management theory or idea depends on the kinds of problems or situations that managers or organizations are facing at a particular time. This type of management is much harder than it looks and because managers must look for key contingencies by spending more time analyzing problems and situations before they take action to fix them.

Assignments and Activities

“Management Who’s Who.” Many business college students are no doubt aware that business colleges are named after historical figures. Chapter 2 situated Joseph Wharton (University of Pennsylvania) and Alfred Sloan (Massachusetts Institute of Technology), but who was Amos Tuck (Dartmouth), M. J. Neeley (Texas Christian), Max M. Fisher (Ohio State) or McDonough (Georgetown) or Cox (Southern Methodist). Use the Internet to locate a recent ranking of business colleges. Pick ten schools that are not named for their institution (like Columbia School of Business and Harvard Business School). Continue to use the Internet to find out who the colleges are named for and those persons’ contribution to business, management, or business education.

“Explore Project Management Software.” Go to the Web site for Microsoft Project at <http://office.microsoft.com/en-us/FX010857951033.aspx>. and investigate some of the features of the software. If a free trial is available, consider downloading it to manage your individual and group projects for this semester. Does the software seem easy to navigate? Consider researching competing project management software to find out what users and technology specialists are saying about the various programs.

“Bureaucratic Management.” The word “bureaucracy” conjures up a host of word associations, and some have interesting histories. Use the Internet to find the origins of the following terms: red tape, Peter principle, Parkinson’s Law. Do any of them relate to management, or are they all sociological in nature?

“Information Management.” Go to the web site of *CIO* magazine at www.cio.com and peruse the current edition. What topics are covered in the issue? Why do you think they are of interest to chief information officers? Read a sampling of articles to see what direction information management is taking today.

“Cheaper by the Dozen.” Go to the library and check out *Cheaper by the Dozen*, written by Frank Gilbreth, Jr. and his sister Ernestine Gilbreth Carey about their parents, specifically their father Frank Gilbreth. Read a few chapters (or the whole book if it intrigues you). What management theories are described in what you read? How did the Gilbreths apply their theories in their family situation? Conversely, how did their family situation inspire new management ideas?