



Case Map for  
Heizer & Render: Operations Management, 7e (Prentice Hall)

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Case Title	Source, Number, Length, Teaching Note	Geographical and Industry Setting, Company Size, Timeframe	Case Decision Issue
<b>PART ONE: INTRODUCTION TO OPERATIONS MANAGEMENT</b>			
<b>Chapter 1: Operations and Productivity</b>			
Mass Production and the Beginnings of Scientific Management	HBSP #391255 17p		Examines the coming of mass production (continuous and large-batch processes and those involving fabricating and assembling of interchangeable parts), and relates the beginnings of modern factory management to the needs and opportunities created by the new technology. Besides focusing on the interrelation of technology and management, it examines issues created by the responses of management and labor to the new machines and methods.
Taco Bell Corp.	HBSP #692058 31p TN available	United States, fast food, 1983-1991	John Martin, Taco Bell CEO, brings the company into line with its competitors through incremental change during the 1980s. In the early 1990s, he adopts breakthrough approaches to improve service levels while reducing prices, providing a distinct competitive advantage. Illustrates the power of breakthrough thinking in a service industry and demonstrates the importance of a coordinated, holistic approach to implementation.
<b>Chapter 2: Operations Strategy in a Global Environment</b>			
Komatsu Ltd.: Project G's Globalization	HBSP #398016 20p TN available	Japan, construction equipment	Describes the major strategic and organizational transformation at Komatsu aimed at changing it from a Japan-based producer of construction equipment to a truly global company with the ability to leverage its groupwide portfolio of resources and capabilities into a new, more diverse business base. Details efforts to build and acquire foreign operations, to specialize and integrate overseas units, to expand responsibilities of offshore operations, and to



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			localize management. Highlights the challenges of reconfiguring assets, redefining roles and relationships, and changing the people and processes used to manage the key offshore operation.
Southwest Airlines – 1993 (A)	HBSP #694023 29p	Dallas, TX, airlines, 1993	Southwest Airlines, the only major U.S. airline to be profitable in 1992, must decide which of two new cities to open, or to add a new long-haul route. Provides windows into Southwest's strategy, operations, marketing, and culture. Illustrates how an airline can simultaneously be a low-cost leader, service leader, and profit leader.
McDonald's Corp.	HBSP #693028 22p TN available	Global, fast food, 10,000 employees, 1992	McDonald's has over many years built an operating strategy based on consistency and quality through a limited product range. Competitive forces have drawn the company into a much wider variety of foods and services in order to maintain growth. Now, new competitors threaten to beat McDonald's at its own, original game. In addition, McDonald's faces unprecedented challenges in its environmental policy. The case teaches approaches and dangers arising from flexibility, and the identification of capabilities that support different types of flexibility. The integration of environmental concerns with operations strategy is also addressed.
Eli Lilly and Co.: Manufacturing Process Technology Strategy – 1991	HBSP #692056 18p TN available	Indianapolis, IN, pharmaceuticals, 1991	Outlines the evolution of Lilly's corporate manufacturing strategy during the 1980s. The corporate vice president of manufacturing must decide on the next phase of Lilly's strategy for the early 1990s, as well as to what extent and what role process development will play. Provides data outlining three different points in the product development process at which manufacturing process development might be initiated. Using learning curve concepts and data, students can estimate the economic costs and benefits associated with each. Illustrates process improvement's substantial impact in a capital-intensive industry, describes possible roles of manufacturing process technology in an industry that has viewed product R&D as its primary competitive advantage, illustrates phases through which manufacturing can evolve in pursuit of comparative advantage, and introduces students to a challenging and changing industry.
Australian Paper Manufacturers	HBSP #691041	Australia, pulp and paper, 1987-1990	Describes a company which has broken an unwritten cordial agreement among the three



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(A)	22p TN available		Australian paper manufacturers to split the domestic market three ways by market segment. The company invades another's "territory" with advanced technology and quality, and by using the other company's poor environmental record to protect itself against retaliation. The defender finds itself unable to respond by adding capacity as public pressure denies it the ability to add capacity and upgrade the technology. Having won a large share of the market, and having successfully introduced a new recycled paper product, the invader is now considering the financial, strategic, and ethical issues of further expansion.
Hitting the Wall: Nike and International Labor Practices	HBSP #700047 23p	U.S., Indonesia, Vietnam, footwear/sporting goods, 16,000 employees, 1991-1999	In the mid-1990s, Nike, one of the world's most successful footwear companies, is hit by a spate of alarmingly bad publicity. After years of high-profile media attention as the company that can "just do it," Nike is suddenly being painted as a firm that relies on low-cost, exploited labor in its overseas plants. Nike officials vigorously deny the charges, claiming that Nike has no control over the independent contractors who manufacture Nike shoes. But the activists will not retreat. Eventually, Nike must learn to deal with the activists' claims and with the web of conflicting data that surrounds the notion of a "fair" or "living" wage. Stimulates debate about appropriate wages in developing countries and how activists affect company decisions.
Regarding NAFTA	HBSP #797013 14p TN available	North America, meatpacking, auto, electronics, 1965-1994	In the aftermath of World War II, the countries of the industrialized world engaged in an unprecedented round of institution-building, through which historical barriers to international trade, especially tariffs, came tumbling down. The GATT has reshaped the environment of world trade to such an extent that international trade flows have exploded. Even as global trade has become more integrated, however, a second round of institutions – regional rather than global – has emerged. The most recent and largest of the major regional institutions, NAFTA, was signed in 1992 and took effect in early 1994. This case examines the effect of this radically new institutional context on three different firms, each representing a different industry and country. This case demonstrates the importance of regional institutions such as NAFTA and also the extent to which their impact and benefits vary widely across firms and industries.



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Toys "R" Us Japan	HBSP #796077 20p TN available	Japan, toys, 1991	Documents the American retailer's process of entry into the Japanese toy market. Discusses the history of Toys "R" Us in the United States as well as the history of the Japanese toy market, distribution, wholesaling, and retailing systems. Eager to enter the world's second largest toy market, Toys "R" Us executives begin in the late 1980s to formulate strategies for opening large discount toy stores in Japan. The company faces a series of setbacks due to Japanese store-size regulation, application procedures, and a long-standing multi-layered distribution system. Continued effort and the acceptance of a Japanese partner enable the company to prepare for the opening of a Toys "R" Us outlet in 1991. Faced with a lack of direct distribution deals and high land and labor costs, executives of Toys "R" Us Japan worry about the ultimate success of their new venture. This case examines differences between U.S. and Japanese retailing systems, and what these differences imply for U.S. firms hoping to enter the lucrative Japanese market.
Hewlett-Packard: Singapore (A)	HBSP #694035 18p TN available	Singapore, computers, 1970- 1991	In the over 20 years since Hewlett-Packard (HP) set up a manufacturing site in Singapore to produce calculators, HP has invested managerial talent and resources in developing its licensor into a technology development partner. The case details the growth of high-volume manufacturing capabilities and the setting up of an R&D facility. Various projects are described in which Singapore contributed an increasing amount of skill, leading up to an abortive attempt to completely co-develop a new printer. Singapore now feels ready to develop a printer on its own for the Japanese market, and the case poses the question of whether or not it is ready to do so. There is also an issue of whether the developers understand the Japanese market well enough to proceed. This case illustrates the enormous effort required to create a technology-development capability and the difficulties of doing so when the source and recipients of the knowledge are separated both geographically and culturally.
<b>Chapter 3: Project Management</b>			
Microsoft Office 2000	HBSP #600097 18p TN available	Seattle/Redwood, WA, software, 1999-2000	Describes the history of Microsoft's Office product suite. Discusses evolution of the Office 2000 project. Set at the end of the project when Steven Sinofsky, Office vice president, must decide upon the direction for the next version of



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			Office, as well as make changes to the process. Explores product development in software, Microsoft's "milestone" development process, resolving the "fuzzy front end," and responding to uncertain environments and radical incremental change.
We've Got Rhythm! Medtronic Corp.'s Cardiac Pacemaker Business	HBSP #698004 18p TN available	United States, health care, 10,000 employees, 1997	Illustrates how a new management team at Medtronic's Cardiac Pacemaker business reversed a steep decline in market share through adoption of certain management principles for new product development: clarity of strategy, aggregate project planning, reducing the number of projects to match development capacity, a platform/derivative product architecture, and others.
Chrysler and BMW: Tritec Engine Joint Venture	HBSP #600004 25p	U.S., Germany, U.K., Brazil, automotive, 1996-1997	Presents a gifted project leader, lacking in significant new product development experience. Highlights the issues and procedures related to defining the project strategy: organizing senior management approvals and support for creating a "heavyweight" team; aligning the disparate perspectives, interests, and biases of project members; and implementing best-practice tools for managing teams within the project. Creates a framework for establishing organizational design rules and key new product development processes, and also provides insights about models of leadership for new product development. Helps students construct a best-practice framework for new product development. Students should learn the critical role of senior management review and control, some of the ways in which managers deal with risk, why alignment of team members is so important, and the attributes of a heavyweight team manager.
BAE Automated Systems (A): Denver International Airport Baggage-Handling System	HBSP #396311 15p TN available	Denver, CO, engineering and construction, 365 employees, 1989-1994	Describes the events surrounding the construction of the BAE baggage-handling system at the Denver International Airport. It looks specifically at project management, including decisions regarding budget, scheduling, and the overall management structure. Also examines the airport's attempt to work with a great number of outside contractors, including BAE, and coordinate them into a productive whole, while under considerable political pressures. Approaches the project from the point of view of BAE's management, which struggles to fulfill its contract, work well with project management and other contractors, and deal with supply,



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			scheduling, and engineering difficulties.
Turner Construction Co.: Project Management Control Systems	HBSP #190128 20p TN available	New York, Philadelphia, construction, 1989	Focuses on Turner Construction Co.'s project management process and its supporting financial control system. After providing a brief overview of the company's structure and project work, the case gives a detailed description of its project management control system, the IOR system. In addition to explaining the mechanics of the IOR system, the case identifies the uses and benefits of the system from the perspectives of different level managers. Finally, the role of the IOR system as a decision support tool is illustrated through a specific dilemma on a project in progress. The primary teaching objective is to illustrate how a control system can be used interactively in an organization both to manage and to guide organizational learning.
<b>Chapter 4: Forecasting</b>			
Merchandising at Nine West Retail Stores	HBSP #698098 17p TN available	United States, footwear retailing, 1998	Describes the merchandising decision process (organization, structure, and incentives) at Nine West retail stores, a large footwear retailer in the United States. Also describes changes currently occurring at Nine West and thus provides a context in which students can recommend changes to the merchandising process and the structure of the merchandising organization.
New Technologies, New Markets: The Launch of Hong Kong Telecom's Video-on-Demand	HBSP (University of Hong Kong) #HKU011 19p TN available	Hong Kong, multimedia and telecommunications, 1998	In March 1998, Hong Kong Telecom's Interactive Multimedia Services (IMS) unit launched the world's first commercial Video-on-Demand (VOD) system. Worldwide interest resulted from the implementation of the world's first commercial VOD system – an expensive high-technology service for which consumer demand had yet to be proven – and from the launching of the first generation of interactive television (iTV) systems. In taking the new technology to market, how should IMS generate demand for the service, and how could it forecast technological adoption rates? What was the role of the government in regulating the new business environment? And what issues were associated with such large and long-term capital investments? This case asks students to examine the forecasting behind a new technology, discuss how to redefine business scope in a changing environment, and critically assess the concept of a "killer application" strategy in providing new IT services.
Sport Obermeyer Ltd.	HBSP #695022	U.S., Hong Kong, China, apparel, 100	Describes operations at a skiwear design and merchandising company and its supply partner.



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	21p TN available	employees, 1992	Introduces production planning for short-life-cycle products with uncertain demand and allows students to analyze a reduced version of the company's production planning problem. In addition, provides details about information and material flows that allow students to make recommendations for operational improvements, including comparisons between sourcing products in Hong Kong and China. Teaches students how to match supply with demand for products with high demand uncertainty and a globally dispersed supply chain.
L.L. Bean, Inc.: Item Forecasting and Inventory Management	HBSP #893003 5p TN available	Maine, direct marketing, 1991	L.L. Bean must make stocking decisions on thousands of items sold through its catalogs. In many cases, orders must be placed with vendors twelve or more weeks before a catalog lands on a customer's doorstep, and commitments cannot be changed thereafter. As a result, L.L. Bean suffers annual losses of over \$20 million due to stockouts or liquidations of excess inventory. Provides a context in which buying decisions that balance costs of overstocking and understocking when demand is uncertain are made and implemented on a routine basis.
Nestle Refrigerated Foods: Contadina Pasta & Pizza (A)	HBSP #595035 36p TN available	United States, food, 1990	Nestle Co.'s Refrigerated Foods Division has very successfully launched its Contadina brand pasta and sauces. The new product has achieved nearly \$100 million in sales in three years. The division is now considering an extension into the pizza line. This case provides a detailed look at the use of simulated test markets to forecast a new product's potential. Intended to provide students with an in-depth understanding of new product forecasting in consumer packaged goods.
<b>Chapter 5: Design of Goods and Services</b>			
The Ritz-Carlton Hotel Co.	HBSP #601163 31p	Washington, DC, hospitality, 2000	In just seven days, The Ritz-Carlton transforms newly hired employees into "Ladies and Gentlemen Serving Ladies and Gentlemen." The case details a new hotel launch, focusing on the unique blend of leadership, quality processes, and values of self-respect and dignity, to create award-winning service. Allows students to examine innovation and improvement in a service industry. Raises questions of when and how to innovate in a successful service operating system and the challenges of innovation for a brand built on customer experience. Teaching points include the role of leadership and values in creating a culture of service and the need to manage the



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			tension between standardized quality procedures and the cultivation of empowered employees who can customize each interaction to meet the needs of their customers.
Product Development at Dell Computer Corp.	HBSP #699010 21p TN available		Describes how Dell redesigned its new-product-development process after experiencing a major product setback and a significant decline in firm profits in 1993. Dell's new process is challenged during the development of a new line of portable computers when the incoming head of portables has to manage the risk of using a new technology. This case focuses on: 1) product development process design, 2) the costs and benefits of flexibility and structure in uncertain environments, and 3) managing development risk during and after a financial and market setback. Explores managerial issues in product development found in uncertain and risky environments. Allows students to discuss and quantify the cost and benefits of process flexibility.
Innovation at 3M Corp. (A)	HBSP #699012 23p TN available	United States, medical/surgical	Describes how 3M Corp. introduces and learns a new and innovative methodology called Lead User research to understand future customer and market needs. A team from 3M's Medical-Surgical Markets Division applies the Lead User methodology to the field of surgical infection control and discovers not only new product concepts but also a very promising new business strategy. Focuses on: 1) 3M's approach to the management of innovation and understanding market needs, 2) an in-depth description of the Lead User method and its potential as applied to the medical business, and 3) the managerial challenges of introducing novel methods into a successful organization. Explains how to introduce and conduct Lead User research to understand future customer and market needs. Allows students to discuss the potential of customer input in innovation strategy formulation.
CIBA Vision: The Daily Disposable Lens Project (A)	HBSP #696100 19p	Global, contact lenses, 1992	Examines CIBA Vision's decision of whether to launch a major new R&D initiative to develop a low cost, daily disposable contact lens, and how to organize such a project. One group of executives favors setting up a small, autonomous project team organizationally and geographically isolated from the company's existing R&D operations. This approach will enable focus, but poses serious issues concerning future



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			integration. Can be used to explore approaches to product development and operations in a global environment as well as approaches to building new organizational capabilities.
Apple Powerbook (A): Design Quality and Time to Market	HBSP (Design Management Institute) #994023 22p TN available	California, computers, 15,000 employees, 1989-1991	Examines the design of Apple's first notebook computer in a context of extreme time-to-market pressures that challenge Apple's "time-to-perfection" culture and functional organizational structure. Focus is on industrial design (ID), user testing, and mechanical design interaction in creating design alternatives, identifying user-centered themes that bring coherence to the design. Examines tensions between diverse concepts of product, competing priorities, and tradeoffs between design perfection and time-to-market.
BMW: The 7-Series Project (A)	HBSP #692083 20p TN available	Germany, automobiles, 1990	Explores BMW's decision about how to manufacture prototype vehicles. Historically, BMW's prototypes were handcrafted by highly skilled artisans in the company's shop. A proposal has been made to alter the process so that prototypes are made in a way that can better uncover potential problems that may arise during final production. While the new approach is expected to make production start-up of new models smoother and reduce quality problems, there is some concern within the company that it will lead to less flexibility to change (and improve) designs during the development cycle. Explores different ways of competing on quality in a luxury product segment and how the product development process affects each of these. A second objective is to examine the notion of a prototyping strategy and the role prototyping plays in linking development strategy and manufacturing strategy.
<b>Chapter 6: Managing Quality</b>			
Deutsche Allgemeinversicherung	HBSP #696084 12p TN available	Germany, insurance, 2,000, 1996	Describes the application of statistical process control in a service industry. In this case, Annette Kluck must decide how to adopt manufacturing-based principles to a service process ranging from customer account setup to legal services. Teaches statistical process control (p-charts) as well as service industry quality improvement.
Wainwright Industries (A): Beyond the Baldrige	HBSP #396219 15p	Missouri, automotive supplier, 300 employees, 1979-1996	Traces the growth of a small automotive supply company, focusing on its commitment to quality in 1981, and the evolution of its quality culture. Breakthrough programs that stress "trust and belief" in the workforce and commitment to



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			customers result in Wainwright winning the Malcolm Baldrige Award in 1994. Invites discussion of the meaning of quality and the assumptions that drive quality cultures. Also probes the leadership and change initiatives and encourages examination of the tensions that exist between the Baldrige criteria and ISO 9000 guidelines.
Romeo Engine Plant (Abridged)	HBSP #197100 10p	Michigan, automobiles, 1993	A newly reopened automobile engine plant has been organized along total quality and teamwork principles. The employees' job is to solve problems and ensure quality, not to watch parts being produced. New operating and financial systems have been installed to promote continuous improvement, waste elimination, and cost reduction activities. Illustrates employee empowerment and team problem-solving to achieve total quality management; and contrasts operational and actual costing systems with traditional labor and overhead variance reporting.
Motorola-Penang	HBSP #494135 18p	Malaysia, electronics, 2,750 employees, 1990-1993	S.K. Ko managed Motorola's Penang, Malaysia factory, producing telecommunications components and equipment. As a female manager of a multi-ethnic and labor-intensive plant in Asia, Ko faced a number of challenges. She had already promoted quality circles and quality competitions to meet Motorola's raised standards. Extensive training gave workers the skills to solve problems and to troubleshoot equipment. But Ko was skeptical of empowerment efforts at other Motorola sites that aimed for much greater worker participation in decision making. She thought empowerment inappropriate to the Asian context. She also thought that many operators would have trouble upgrading their skills as the world became more information intensive. Other Southeast Asian nations with lower labor costs were a competitive threat to Penang's labor-intensive processes. She envisioned Penang transformed by the year 2000 into a fully automated manufacturing operation and a design center for all of Motorola's Asian operations.
Measure of Delight: The Pursuit of Quality at AT&T Universal Card Services (A)	HBSP #694047 23p TN available	Florida, credit cards, 2,700 employees, 1989	AT&T's Universal Card Services has been extremely successful during its short lifetime. Dedicated to improving service quality and customer satisfaction, Chief Quality Officer Rob Davis and his Quality Team have designed and put into place an unusual measurement and compensation system based on more than 100 performance measures monitored and



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			communicated daily. This case links performance measurement and compensation policies to precepts of quality management.
Process Control at Polaroid (A)	HBSP #693047 17p	Waltham, MA, film, 1984-1985	Describes the initial efforts at a film production plant to shift from a traditional QC inspection mentality to a worker-based process control mentality. Students can prepare SPC charts, propose actions needed, and combine steps into an overall action plan. Teaches basic tools of quality and statistical process control.
GE: We Bring Good Things to Life (A)	HBSP #899162 23p B case #899163 TN available	Global; diversified; \$80 billion revenues; 222,000 employees; 1995	Jack Welch and the Corporate Executive Council of GE are faced with a decision about whether and how to implement a six sigma quality improvement effort in the context of many other initiatives already undertaken at GE in recent years. Teaching Purpose: To illustrate the complexity of managing change and the momentum that related and integrated initiatives can provide.
<b>Chapter 7: Process Strategy and Supplement on Capacity Planning</b>			
Product Development at Dell Computer Corp.	HBSP #699010 21p TN available	N/A	Describes how Dell redesigned its new-product-development process after experiencing a major product setback and a significant decline in firm profits in 1993. Dell's new process is challenged during the development of a new line of portable computers when the incoming head of portables has to manage the risk of using a new technology. This case focuses on: 1) product development process design, 2) the costs and benefits of flexibility and structure in uncertain environments, and 3) managing development risk during and after a financial and market setback. Explores managerial issues in product development found in uncertain and risky environments. Allows students to discuss and quantify the cost and benefits of process flexibility.
Massachusetts General Hospital: CABG Surgery (A)	HBSP #696015 21p TN available	Boston, MA, health care, 10,000 employees, 1994	Describes the efforts of a cross-functional team at Massachusetts General Hospital to reengineer the service delivery process (the "care path") for heart bypass surgery (CABG) in order to shorten hospital stays and lower costs while maintaining/enhancing the quality of care provided. Explores the diagnosis and improvement of service delivery processes in a high-quality, high-cost medical setting.
John Crane UK Ltd.: The CAD-CAM Link	HBSP #691021 24p	United Kingdom, engineering, 500 employees, 1990	Describes the improvement of manufacturing performance in a job shop through the application of a variety of techniques such as group



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	TN available		technology, manufacturing cells, and CAD-CAM. As well as exploring the limitations and merits of these methods, the case explores the conflict between computer-integration and shop-floor autonomy. The teaching objectives are to provide an understanding of computer techniques available in modern small-batch manufacture, sources of manufacturing improvement, and the implementation of computer-integrated manufacturing.
National Cranberry Cooperative (Abridged)	HBSP #688122 10p	Massachusetts, food processing, 1980	Describes the continuous flow process used to process cranberries into juice and/or sauce. Requires student to analyze process flows to determine where the bottlenecks are and to decide how, and whether, to expand capacity.
Align Technology, Inc.: Matching Manufacturing Capacity to Sales Demand	HBSP #603058 22p	US, Mexico, Pakistan Medical products, \$50 million revenues, 2001	Align Technology is a four-year-old medical products company that has invented a new product that requires new manufacturing processes. Demand for the new product has grown more slowly than initial forecasts predicted, and the cost structure is preventing the company from becoming profitable. The manufacturing process involves six different operations, located in California, Pakistan, and Mexico. The first dilemma requires downsizing the capacity until the demand grows. Increasing capacity in the future requires consideration of the time lags, costs, and incremental units of added capacity inherent in each of the six processes. Given the uncertainty of accurate sales forecasts as the company carries out new marketing initiatives, the manufacturing organization has been challenged to create a capacity plan to meet demand while lowering its fixed costs. Teaching Purpose: Analyzing and planning production capacity for a multiprocess and multilocation operation.
Samsung Heavy Industries: The Koje Shipyard	HBSP #695032 16p	Korea, shipbuilding, 1994	Describes the steps taken by Samsung Shipbuilding to develop its manufacturing capabilities using externally developed technologies. Having assimilated those technologies, it is now faced with a huge capacity expansion, in the form of a 1-million-ton dry dock, that threatens to overwhelm its systems and managerial methods. Teaching Purpose: Explores issues related to manufacturing improvement and "Murphy's Law"--the phenomenon of performance falling after major capital addition in manufacturing.



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<b>Chapter 8: Location Strategies</b>			
Filene's Basement	HBSP #594018 24p TN available	Boston, MA, retail discount store, 1,700 employees, 1993	Filene's Basement is in the process of deciding where, and if, to locate two new stores in its new Chicago area of operations. The existing Chicago area stores have been performing well, however, management is concerned with over-saturation of the market. At the time of the case, Filene's Basement has 49 stores in operation.
To Move or Not to Move: Cathay Pacific Airways	HBSP (University of Hong Kong) #HKU003 22p TN available	Hong Kong, airlines, 1991	Cathay Pacific's Data Centre, located in Hong Kong, had experienced an explosion and fire that disrupted normal business for 13 hours. In the search for a more secure location, the problems with finding suitable offices in Hong Kong were highlighted, while the benefits and advantages offered by other countries presented the company with the option of relocating the data center off-shore. Highlights the importance of information technology (IT) in allowing businesses to migrate some or all of their operations to previously inaccessible locations that provide a competitive advantage; and examines political, economic, technical, and organizational issues related to location selection.
Wriston Manufacturing Corp.	HBSP #698049 15p	Michigan, automotive, 1988	Wriston Manufacturing is a broad-line maker of components for the automotive industry. It has developed a network of nine plants as its product line has grown. Newer, higher-volume products tend to be made in newer, focused, high-volume plants, while older product lines tend to be assigned to the Detroit plant, the oldest one in the system. Because Detroit produces a wide variety of products, its overhead costs are very high. Management needs to decide whether to close the Detroit plant, or find a way to make it profitable. Helps students see that the cost structure of a plant is driven primarily by its mission – by the complexity or breadth of the product line it is asked to produce. Conventional accounting measures of profitability mask the reasons why complex plants have high costs.
Lenzing AG: Expanding in Indonesia	HBSP #796099 23p TN available	Indonesia, textiles, 1990	In 1994, Lenzing AG, the world's largest rayon manufacturer, is deciding whether to expand production in South Pacific Viscose, its Indonesian subsidiary. Indonesia is a booming market for rayon, but management still has some concerns about the expansion. First, for the plant to remain successful, Lenzing's downstream customers – textile producers – must also remain in Indonesia. Second, despite being located in an



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			area of tropical forests, the Indonesian plant has no local access to wood pulp, its most critical input. Finally, with the expansion, Lenzing would be increasing its exposure in a country that remains politically and economically uncertain. This case exposes students to issues surrounding expansion in a foreign country. In particular, it pushes them to consider how expansion at a particular site affects the company's competitive position with regard to both its upstream suppliers and downstream customers.
Ellis Manufacturing Co.	HBSP #682103 19p	Global, home kitchen appliances, 1981	Ellis finds itself in a weakening competitive position largely due to the lack of rationalization in its plants. Driven by a strong traditionally decentralized sales organization, Ellis finds that all plants want control over all product lines. As a result, overall economies of scale are not achieved and duplication of resources has weakened Ellis' cost position. Case gives enough data for students to make specific recommendations.
<b>Chapter 9: Layout Strategy</b>			
Toshiba: Ome Works	HBSP #696059 18p	Japan, electronics, 190,000 employees, 1995	In 1995, Toshiba was the market leader in portable computer sales worldwide. This case describes the assembly of portable notebook computers in Toshiba's Ome factory in Ome, Japan, providing insights into some of the reasons for Toshiba's success. In addition to describing production techniques such as dynamic line balancing, this case probes the nature of the Japanese workforce and the unique problems faced by Japanese businesses. Teaches best practices: design of efficient assembly operations, design of worker tasks; and analysis: belt driven assembly, cycle time, idle time, line balancing.
Mouawad Bangkok Rare Jewels Manufacturers Co. Ltd. (A)	HBSP #696056 21p	Bangkok, Thailand, jewelry production	Describes a jewelry production process in a small factory in Bangkok, Thailand. The process is complicated by two needs: accounting for precious stones and maintaining high quality. The traditional control system in the factory has been working reasonably well, but has added much overhead. The protagonist is charged with finding a better way to manage the challenges presented by this job shop. This case explores the factors that make production control challenging.
Copeland Corp.: Evolution of a Manufacturing Strategy – 1975-	HBSP #686089 3p TN available	Compressor manufacturing, 1975-1982	In the (A) case (#686-088), Copeland had to choose between focusing its Sidney plant by product line or by manufacturing process. Now that it has made that decision, a plant layout must



82 (B)			be selected from two alternatives.
<b>Chapter 10: Human Resources and Job Design</b>			
Deaconess-Glover Hospital (A)	HBSP #601022 24p	Boston, MA, health care, 200 employees, 1999	Chronicles the initial efforts to teach a health care organization to manage itself according to the principles of the Toyota Production System (TPS). TPS – though intensively studied over many years by outsiders – had been mischaracterized as a collection of production control tools such as kanban cards, andon cords, and pull systems. TPS is in fact an integrated approach to designing, doing, and improving the work of individuals and of groups working collaboratively to produce and deliver goods, services, and information. This case provides background on Deaconess-Glover Hospital and on its TPS teacher, John Kenagy. Describes how Kenagy observed the work done at the hospital to understand how the system worked. Ends with the question of what he should recommend to managers about their next step. Shows how to observe people directly in an organization to construct a "current condition" of how they actually do their work and how the system actually operates. The "current condition" description invariably differs from descriptions given verbally or presented in process-flow diagrams and organizational charts.
Eli Lilly: The Evista Project	HBSP #699016 24p TN available	Indianapolis, IN, pharmaceuticals	Describes the creation and operation of two heavyweight teams for new drug development and launch. The primary focus is on one of those two teams, Evista, although comparisons to the other team, Zyprexa, are included. Lilly must decide the next phase (post-launch) for managing Evista's rollout. This case explores operational realities of heavyweight development teams and their transition following product launch.
Southwest Airlines: Using Human Resources for Competitive Advantage (A)	HBSP (Graduate School of Business, Stanford University) #HR1A 24p TN available	United States, airlines, 12,000 employees, 1994	In 1994 both United Airlines and Continental Airlines launched low-cost airlines-within-an-airline to compete with Southwest Airlines. From 1991 until 1993 Southwest had increased its market share of the critical West Coast market from 26% to 45%. This case considers how Southwest had developed a sustainable competitive advantage and emphasizes the role of human resources as a lever for the successful implementation of strategy.
PPG: Developing a Self-directed Work Force (A)	HBSP #693020 18p	Kentucky, glass, 100 employees, 1991	PPG has built a state-of-the-art glass plant in Berea, Kentucky. The plant is pursuing the goal of a "self-directed workforce." The case describes



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	TN available		the progress to date and the unresolved issues faced by management. These include questions about shift rotation, promotion opportunities, employee evaluation and supervision, the role of employees in policy setting, and whether or not to introduce a system of peer review. Explores the process of creating a self-directed workforce, the underlying theoretical model, and the difficulties and tensions inherent in that approach.
Lincoln Electric Co.	HBSP #376028 30p TN available	Cleveland, OH, welding, 1975	Covers the strategy and management practices of the world's largest manufacturer of welding equipment. Discusses the compensation system and company culture, and the leadership style of management.
<b>Chapter 11: Supply-Chain Management</b>			
Supply Chain Management at World Co. Ltd.	HBSP #601072 21p TN available	Japan, apparel/retailing, 5,000 employees, 1999	Describes a supply chain with very quick (i.e., two week) response times and allows students to explore how such short response times are achieved. Allows students to explore why other supply chains, with much longer response times, might not be able to replicate this performance. Illustrates the need and value of response times to short-lifecycle product supply chains and how response times can be reduced through process and organizational changes.
Ford Motor Co.: Supply Chain Strategy	HBSP #699198 9p TN available	Dearborn, MI, automobiles, 370,000 employees, 1998	Describes Ford's examination of its supply chain to evaluate whether the company should "virtually integrate" on the Dell Computers model.
Tale of Two Electronic Components Distributors	HBSP #697064 21p TN available	United States, electronic distributors, 1995-1996	Discusses the role of distribution intermediaries in the electronic components industry, and describes operations at two of these distributors. Serves as a vehicle to discuss the functions provided by distributors in the channel. Lets students understand the differences between these distributors and discuss how each of them is going to deal with issues like consolidation and the rapid growth of the Internet. Also introduces students to the complexity of managing operations at a small distributor.
Sport Obermeyer Ltd.	HBSP #695022 21p TN available	U.S., Hong Kong, China, apparel, 100 employees, 1992	Describes operations at a skiwear design and merchandising company and its supply partner. Introduces production planning for short-life-cycle products with uncertain demand and allows students to analyze a reduced version of the company's production planning problem. In addition, provides details about information and material flows that allow students to make recommendations for operational improvements,



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			including comparisons between sourcing products in Hong Kong and China. Teaches students how to match supply with demand for products with high demand uncertainty and a globally dispersed supply chain.
Barilla SpA (A)	HBSP #694046 23p TN available	Italy, grocery, 7,000 employees, 1990	Barilla SpA, an Italian manufacturer that sells to its retailers largely through third-party distributors, experienced widely fluctuating demand patterns from its distributors during the late 1980s. This case describes a proposal to address the problem by implementing a continuous replenishment program, under which the responsibility for determining shipment quantities to the distributors would shift from the distributors to Barilla. Describes support and resistance within Barilla's different functional areas and within the distributors Barilla approached with the proposal. Allows students to analyze how a company can effectively implement a continuous replenishment system to both reduce channel costs and improve service.
<b>Chapter 12: Inventory Management</b>			
Pioneer Hi-Bred International, Inc.: Supply Management	HBSP #898238 15p TN available	Des Moines, IA, agribusiness, 5,000 employees, 1997	Depicts the supply-management practices – including planning, production, and distribution – at Pioneer Hi-Bred International, the world's leader in the genetically engineered hybrid crop seed industry. It reveals conflicting considerations in setting policies for production and distribution, including costs, customer service, vicissitudes of farm production, market uncertainties, and corporate culture. Students must determine what bears on the key issues – the size of the safety stock inventory and the level of overseas products – and specify the information that would be needed to arrive at a decision. Also permits consideration of the forces that could change supply management at Pioneer in years to come. This case allows students to consider the challenges in managing the production, inventory, and distribution functions in a large, complex agribusiness firm. It also demonstrates the role of inventory management in supply management, and its relationship to production, marketing, and customer service.
L.L. Bean, Inc.: Item Forecasting and Inventory Management	HBSP #893003 5p TN available	Maine, direct marketing, 1991	L.L. Bean must make stocking decisions on thousands of items sold through its catalogs. In many cases, orders must be placed with vendors twelve or more weeks before a catalog lands on a customer's doorstep, and commitments cannot be



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			changed thereafter. As a result, L.L. Bean suffers annual losses of over \$20 million due to stockouts or liquidations of excess inventory. Provides a context in which buying decisions that balance costs of overstocking and understocking when demand is uncertain are made and implemented on a routine basis.
Chaircraft Corp. – 1988	HBSP #689082 15p	Southeast, furniture manufacturing / distribution, 700 employees, 1988	Illustrates the difficulty of effective production planning and production control in a multistage production process affected by seasonal demand.
Blanchard Importing and Distribution Co., Inc.	HBSP #673033 11p TN available	Boston, MA, liquor wholesaling, 1972	Illustrates the two main types of errors resulting from use of the economic order quantity (EOQ) as a tool in production scheduling. Designed to permit class discussion to begin with a consideration of one common type of mistake, errors in calculation of the EOQ volume resulting from use of incorrect data for the input parameters of the formula. The analysis can then shift to a more general discussion of the second type of error, the misapplication of EOQ and reorder point (ROP) techniques to a given system. Class discussion can conclude with student recommendations of alternative techniques that may be better suited to the Blanchard operation than the EOQ/ROP method.
<b>Chapter 13: Aggregate Planning</b>			
MacPherson Refrigeration Ltd.	HBSP (Richard Ivey School of Business/UWO) #93D021 8p TN available		Linda Metzler, newly appointed production planning manager, is drafting an aggregate production plan for the company's refrigerators, freezers, and air conditioners for the next year. She has considered three plans. Students are asked to devise better plans and to evaluate the quantitative and qualitative factors favoring them. Ultimately, the use of linear programming to construct aggregate plans will be introduced.
Sport Obermeyer Ltd.	HBSP #695022 21p TN available	U.S., Hong Kong, China, apparel, 100 employees, 1992	Describes operations at a skiwear design and merchandising company and its supply partner. Introduces production planning for short-life-cycle products with uncertain demand and allows students to analyze a reduced version of the company's production planning problem. In addition, provides details about information and material flows that allow students to make recommendations for operational improvements, including comparisons between sourcing products in Hong Kong and China. Teaches students how to match supply with demand for products with high demand uncertainty and a globally dispersed



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			supply chain.
Chaircraft Corp. – 1988	HBSP #689082 15p	Southeast, furniture manufacturing / distribution, 700 employees, 1988	Illustrates the difficulty of effective production planning and production control in a multistage production process affected by seasonal demand.
Chaparral Steel (Abridged)	HBSP #687045 19p	Texas, steel, 1979	Examines a major capacity expansion proposal of Chaparral Steel, a steel minimill. Gives students the opportunity to evaluate the proposed expansion in the context of the competitive environment, market demand, technological choice, and the demands of a global industry. Also challenges them to analyze the proposal's implications for manufacturing strategy, technological innovation, market share, and company finances.
<b>Chapter 14: Material Requirements Planning (MRP) and ERP</b>			
Tektronix, Inc.: Global ERP Implementation	HBSP #699043 22p TN available	Pacific Northwest, electronics, 1993- 1998	Reviews Tektronix's implementation of an Enterprise Resource Planning (ERP) solution in its three global business divisions. This case tells the story of three implementations, each with its own character and requirements. Tektronix managers needed to synchronize the requirements of each division with the company's overall need to standardize business practices and its desire to adhere to a common business model across the enterprise. Details the difficulty of major business change in a mature business and technical environment.
Vandelay Industries, Inc.	HBSP #697037 16p TN available	United States, heavy equipment/software, 30,000 employees, 1996	An ICS consultant considers issues at the start of a full-scale implementation of SAP software for a large client. The Enterprise Resource Planning (ERP) software will integrate previously fragmented business processes, and so must be supported by the entire client organization. Discusses ERP basics, pros and cons of process reengineering and standardization, and change management issues.
Moore Medical Corp.	HBSP #601142 21p	Connecticut, medical supplies, \$124 million, 2001	Moore Medical, a distributor of medical supplies to practitioners, has relied on traditional customer channels such as catalogs, phones, and faxes to communicate product offerings, promotions, and availability, and to take orders. Attempting now to become a "bricks and clicks" distributor with a strong Internet presence, it has already made substantial investments in an eCommerce web site and in "back office" ERP software to improve the fulfillment performance of its four distribution centers. The ERP software has not lived up to expectations in all areas, and the



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			company must decide whether to invest in more modules for this system that might address its shortcomings. It must also decide whether to make an additional investment in customer relationship management software. Teaching Purpose: Examines the factors underpinning IT investment decisions. At the time of the case, Moore must decide whether it has "enough" of the "right kind" of IT. The decision is complicated by the fact that the company has recently made substantial IT investments that have impacted financial performance and caused organizational disruption. In addition, it is not clear that all of Moore's known issues related to customer retention and satisfaction will be addressed by the Customer Relationship Management (CRM) under consideration. Students preparing the case must understand this environment and formulate an IT investment program that makes sense within it.
Digital Equipment Corp.: The Endpoint Model (A)	HBSP #688059 14p TN available	Maine, Massachusetts, computers, 1,000 employees, 1986	Describes a comprehensive manufacturing strategy designed to reduce substantially the cycle time of orders (i.e. the time between the placement of an order by a customer and its delivery to the customer). To launch the strategy Digital has adopted manufacturing resource planning (MRP II). The case allows students to assess the pros and cons of the strategy, which requires rapid information flows and tight manufacturing discipline, the usefulness of MRP II, which integrates manufacturing with overall business plans, and the implementation process to date.
<b>Chapter 15: Short-Term Scheduling</b>			
The Patient Care Delivery Model at the Massachusetts General Hospital	HBSP #699154 23p TN available	Boston, MA, health care/hospital, 1999	Examines the implementation of a new patient care delivery model at Massachusetts General Hospital. Uses clinical and financial data to examine different choices for staffing non-physician health care professionals and to understand the challenges of managing change across multiple professions in the hospital environment. Recently promoted to senior vice president of Patient Care Services, Jeanette Ives Erickson must decide whether a model for patient care delivery is the best way to improve care and reduce costs in the midst of extreme budget pressures and a rapidly changing health care environment.
Southern Pulp and	HBSP	Alabama, pulp and	Describes a paper mill whose paper machines are



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Paper	#696103 10p	paper, 1996	a bottleneck in the operation. The causes include poor scheduling, lack of investment, and ineffective process control. The plant manager is charged with improving this situation fairly rapidly and has a number of proposals for change to choose from. Examines various aspects of computer integration, operations improvement, and implementation.
<b>Chapter 16: Just-in-Time and Lean Production Systems</b>			
Johnson Controls, Automotive Systems Group; The Georgetown, Kentucky Plant	HBSP #693086 23p TN available	Kentucky, automotive, 40,000 employees, 1993	Prior to the 1980s, auto-makers purchased individual seat components and built the seats alongside their auto assembly lines. This case describes how Johnson Controls, Automotive Systems Group blossomed when auto makers turned to outsourcing the complete seat set. Closely examines one plant that switched from just-in-time (JIT) delivery of seat sets to JIT assembly to serve a nearby Toyota Camry assembly operation. Exposes the challenge of dealing with growing seat variation and an opportunity of doubling the plant floor space at a separate site. The specific case question is how the plant should use this new space. Students who have been only exposed to the concept of JIT production will grasp not only how JIT is actually practiced but what it really entails.
Injex Industries	HBSP #697003 20p	Hayward, CA Injection molding for automotive industry, 250 employees, 1996	Injex Industries in Hayward, CA, supplies the New United Motor Manufacturing, Inc. (NUMMI)--a joint venture between General Motors and Toyota--with interior plastic door trim panels and garnish parts. Injex applies the methods of lean, just-in-time manufacturing through the Toyota Production System and improves quality and productivity significantly. NUMMI is Injex's only customer. The challenge is to keep inventory as low as possible, yet be able to react to production problems without seriously impacting their customer's production. A minor car model change means a significant change to the manufacturing processes. A major model change requires Injex to change many plastic injection molds for new design on the upcoming 1998 model with little time for production testing. While model changes cause adjustment crises, they appreciate the benefits of the streamlined manufacturing method. The general manager worries about serving only one customer, but reasons that new business would have to be substantial to justify setting up new



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			systems for other customers. Teaching Purpose: What are the advantages and disadvantages of having a single, very demanding customer?
MedSource Technologies	HBSP #603081 25p	US, medical devices, \$150 million revenues, 2001	Considers the issues facing Richard Effress, MedSource's chairman and CEO, as the firm approaches the Precision Cut project--the first test of MedSource's capabilities as an integrated, contract manufacturer in the medical device industry. MedSource Technologies was formed in 1999 by the simultaneous acquisitions of seven component manufacturing companies serving original equipment manufacturers in the medical device industry. The firm's model of integrated manufacturing aimed to leverage its expertise in manufacturing to become a single-source supplier of customized services in product design and development, rapid prototyping, component manufacturing, device assembly, and supply chain management.
<b>Chapter 17: Maintenance and Reliability</b>			
The Dana-Farber Cancer Institute	HBSP #699025 17p	Boston, MA, health care, 1995	Describes the death of a cancer patient in one of the nation's premier cancer treatment centers and examines the organizational and process characteristics that may have contributed to the medical error.
Workplace Safety at Alcoa (A)	HBSP #692042 22p TN available	Indiana, aluminum, 63,000 employees, 1991	Examines the challenge facing the managers of a large aluminum manufacturing plant in its drive to improve workplace safety. The CEO of the company has made safety a top priority. The plant has made good progress in reducing the injury rate, but now confronts the need to accelerate its improvement. Doing so requires the safety director to consider progress to date and analyze the opportunities for improvement, many of which involve fundamental changes in behavior at all levels of the organization. Progress has not been uniform throughout the plant and past approaches may not be adequate in meeting the challenge. As the case comes to a close, these issues come to a head because a superintendent wants to fire a supervisor who has failed to adhere to safety procedures. Designed to introduce students to the issues of safety in its operating context. Students have information available that allows them to analyze underlying causes and identify major opportunities for improvement. However, the interactions between safety and other dimensions of manufacturing performance are evident in developing and



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A Brush with AIDS (A)	HBSP #394058 8p TN available	Health care products, 1989	implementing a plan for improvement. A product manager at a health products company is responsible for marketing sharps containers, which hospitals use to store used needles in order to protect medical workers from being pricked with AIDS-contaminated needles. After hospitals report repeated instances of needles penetrating the container walls, she realizes the defective product poses a health hazard for medical workers. The product manager must decide whether or not to fix the containers when doing so would significantly decrease her profit performance for the year. The company mission statement stresses quality commitment to customers, but all compensation and advancement incentives are geared solely toward profit objectives. Gives students a chance to think about ethical dilemmas they are likely to face in the business world. Is a manager morally delegated to take active steps to protect the safety of his or her customers when neither the law nor the company is compelling him or her to do so?
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