Virtually every firm that has existed for many years has gone through one or more changes in business strategy that are significant enough to be called a “transformation.” Typically, the transformation process is precipitated by some external event that creates a crisis for the firm. If the management’s strategic response is successful, the firm will survive and may even prosper.

The Sealed Air Corporation provides a classic example. In the late 1980s, the company was faced with the prospect of losing its patent protection. Furthermore, the firm’s management realized that its manufacturing capabilities were not competitive with those of other firms in the industry. The managerial response was to embark on a program to improve manufacturing efficiency and product quality. To reinforce its managers’ commitment to its operating plans, the company chose to eliminate its cushion of equity capital and excess cash flow by borrowing almost 90% of the market value of its common stock and paying it out as a special dividend to shareholders. In so doing, Sealed Air’s management purposefully and successfully used the leveraged recapitalization to create an “internal crisis” that was designed to disrupt the status quo and promote radical internal changes. These changes included establishing a new set of corporate objectives, altering the firm’s compensation system, and reorganizing the manufacturing and capital budgeting processes.

But the changes at Sealed Air pale in comparison to the ongoing transformation process initiated by the Enron Corp. in the late 1980s. In a little over a decade, Enron’s management has turned a $200 million regulated natural gas pipeline operator into a $100 billion new-economy trading powerhouse (see Exhibit 1 for a chronology of major milestones in the evolution of Enron over this period). Today’s Enron Corp. is the leading power marketer in the world. And, reflecting management’s commitment to the continuous development of new businesses, the company is now applying the skills it used to

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EXHIBIT 1  ■ CHRONOLOGY OF SIGNIFICANT EVENTS IN THE HISTORY OF ENRON CORPORATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>Northern Natural Gas Company formed in Omaha, NE by three companies: North American Light &amp; Power, United Light &amp; Railways Co., and Lone Star Corporation.</td>
</tr>
<tr>
<td>1985</td>
<td>January 1, 1985 phased deregulation of natural gas markets initiated. Houston Natural Gas merges with InterNorth, a natural gas company based in Omaha, Neb., to form the modern-day Enron, an interstate and intrastate natural gas pipeline company with approximately 37,000 miles of pipe. Peruvian government nationalizes Enron pipeline system. Enron's interstate pipelines work to become open-access transporters to allow other entities to transport on our pipelines.</td>
</tr>
<tr>
<td>1986</td>
<td>Irwin Jacobs and Leucadia National Corporation accumulate over 15 percent of Enron’s shares before buyback agreement is reached.</td>
</tr>
<tr>
<td>1987</td>
<td>July 1, 1987 second phase of deregulation of the natural gas market initiated. October 1987 Enron discontinued its speculative oil and petroleum trading operations due to losses incurred during the third quarter. Florida Gas Transmission’s Phase I expansion is completed as a result of growing natural gas needs in Florida.</td>
</tr>
<tr>
<td>1988</td>
<td>Enron enters UK power market at the first signs of energy liberalization and is the first company to begin construction of a new power plant when the electric industry is privatized.</td>
</tr>
<tr>
<td>1989</td>
<td>Enron Gas Marketing commenced a program to acquire long-term supplies with which to serve firm, long-term markets under its “gas bank program.” Transwestern Pipeline Company is the first merchant pipeline in the U.S. to stop selling gas and become a transportation-only pipeline.</td>
</tr>
<tr>
<td>1990</td>
<td>Jeff Skilling hired as chairman of Enron Gas Services. Enron continues its efforts to move more of its merchant sales function into its non-FERC regulated gas companies such as Enron Gas Marketing. Enron Finance Corporation created.</td>
</tr>
<tr>
<td>1991</td>
<td>Enron Gas Services purchases and markets natural gas and also provides price risk management services to natural gas producers, gathers, processors and end-users as part of its physical molecule business.</td>
</tr>
<tr>
<td>1992</td>
<td>FERC Order 636 is issued, separating the merchant function from the transportation function and taking pipelines out of the business of buying and selling gas. Enron acquires Transportadora de Gas del Sur, establishing Enron’s first pipeline presence in South America.</td>
</tr>
<tr>
<td>1993</td>
<td>The world’s largest gas-fired heat and power facility (the 1,875 megawatt Teesside power plant) becomes operational. Teesside is the second largest project financing (after the Channel Tunnel) ever completed in the U.K.</td>
</tr>
<tr>
<td>1994</td>
<td>Enron North America trades its first electron.</td>
</tr>
<tr>
<td>1995</td>
<td>Enron Europe establishes a trading center in London and begins trading U.K. power and gas - marking Enron’s entry into the European wholesale market.</td>
</tr>
<tr>
<td>1996</td>
<td>The 826 MW Phase I of the Dabhol Power Project, a 2,450 MW power plant located south of Mumbai, India, achieves financial close and begins construction. It is the first power project in India to involve imported liquified natural gas (LNG) as a fuel source.</td>
</tr>
</tbody>
</table>

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*commencing in October 1985, the Federal Energy Regulatory Commission (FERC) issued Order 436 which significantly altered the marketing and pricing of natural gas.
*b. Enron Finance Corporation was formed to provide financing to natural gas producers to encourage increased production, to provide price hedging services to the natural gas industry, and secure new gas supplies. (Enron 10K, p. 9)
Sources: Enron web site, company press releases and 10Ks.

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2. Although Enron was formed through the merger of InterNorth and Houston Natural Gas Corporation in 1985, the origins of the firm can be traced back to 1930, when the Northern Natural Gas Company was organized in Omaha, Nebraska by three companies: North American Light & Power Co., United Light & Railways Co., and Lone Star Corporation.
 dominate the deregulated natural gas market to similar situations in the electric power market and, most recently, in the developing market for broadband.\(^5\)

The firm’s accomplishments have gained the respect of Wall Street and high praise from a variety of sources in the financial press. Exhibit 2 contains a listing of recent awards and rankings. For example, Enron has been selected as *Fortune Magazine’s Most Innovative Company* for six straight years, ranks 25th overall on *Fortune’s* list of *Most Admired Companies* (first among energy companies), and is one of the *100 Best Compa-

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5. Gary Hamel (in *Leading the Revolution* (Boston, MA: Harvard Business School Press, 2000)) quotes an Enron executive who exemplifies the energy created within Enron to create new businesses as follows: “We are always looking for the next elephant—the next huge business we can create. That’s what keeps us awake at night. Every new thing we do starts out with a completely unrealistic expectation.”
In this paper we describe for the first time the transformation of Enron from the perspective of the firm’s top management. We document the strategy used and its implementation in the words of CEO Ken Lay, President and COO Jeff Skilling, Vice Chairman Gene Humphrey, CFO Andy Fastow, and Director of Human Relations Cindy Olsen.4

EXHIBIT 2 ■ LISTING OF RECENT AWARDS AND RANKINGS OF ENRON CORPORATION

PANEL A. AWARDS


PANEL B. SIZE AND PERFORMANCE RANKINGS


1997  Assets—Top Oil and Gas Companies by Assets, Ranked #8 behind Exxon, Mobil, Chevron, Amoco, Shell, Texaco and ARCO. (Oil & Gas Journal, Oil & Gas Journal 200, September 7, 1998, p. 68.)

nies to Work for in America. The Financial Times also selected Enron as the Energy Company of the Year for 2000 and recognized the company as having made the Boldest Successful Investment Decision based on the company’s $100 million investment in EnronOnline.

In this paper we describe for the first time the transformation of Enron from the perspective of the firm’s top management. We document the strategy used and its implementation in the words of CEO Ken Lay, President and COO Jeff Skilling, Vice Chairman Gene Humphrey, CFO Andy Fastow, and Director of Human Relations Cindy Olsen.4

MARCHING TO THE BEAT OF A NEW DRUMMER

Enron’s transformation from regulated pipeline to competitive juggernaut resulted from the combined effects of a number of factors. The first of these involved the changes brought about by the deregulation of the natural gas market set in motion by the passage of the Natural Gas Policy Act (NGPA) of 1978. Shortages of natural gas during the 1970s led many gas pipeline companies to enter into long-term take-or-pay contracts that obligated them to purchase (take) a specific quantity of gas at a fixed price; and

4. Our interviews were completed on December 4, 2000. On December 13, 2000 Enron announced that Jeff Skilling would succeed Ken Lay as CEO.
if the amount of gas purchased fell below the minimum set in the contract, they were subject to deficiency payments. Simultaneously the pipeline companies resold the gas to local distribution companies (LDC) at equivalent prices with “minimum bill” provisions that mirrored the take-or-pay contracts. However, deregulation and limitations on industrial gas consumption imposed by the NGPA of 1978 quickly reversed the supply shortage and gas and gas prices fell dramatically. Then in 1984 the Federal Energy Regulatory Commission (FERC) issued Order No. 380 which declared the minimum bill contracts between pipelines and LDCs invalid. Stuck with penalties from the take-or-pay contracts for gas at above current market prices many pipeline companies, including Enron, incurred significant liabilities.

The second major catalyst for change encountered by Enron during this period came from the market for corporate control. In 1986 Irwin Jacobs began accumulating Enron shares in preparation for an apparent takeover attempt. Jacobs and Leucadia National Corporation accumulated over 15% of the shares before the company moved to end the possible takeover threat in October of 1986 by repurchasing the two blocks of shares at a premium price.

Finally, two unrelated catastrophes added to Enron’s financial problems during the period. In 1985, the Peruvian government nationalized one of Enron’s pipelines and, in 1987, Enron suffered substantial losses from its oil trading activities. The latter led Enron’s management to discontinue its speculative oil trading operations.

In sum, the combined effects of deregulation, the attempted takeover by Irwin Jacobs, the loss of the Peruvian pipeline to nationalization, and losses from the firm’s oil trading activities resulted in a “near death” experience for Enron. And it was that experience that led to top management’s decision to transform the company. Management decided that the firm’s future depended on launching a new unregulated business. The basic business strategy was to capitalize on opportunities arising out of newly deregulated markets. In the words of President and COO Jeff Skilling, Enron’s strategy was to “get in early, push to open markets, position ourselves to compete, and compete hard when the opening comes.”

The first incarnation of the new business model was the formation in 1989 of what Jeff Skilling referred to as a “gas bank.” Skilling developed the concept of a gas bank while working as a senior partner with McKinsey & Company in Houston. Under the new business model, Enron would intermediate between buyers and sellers of gas and lock in the spread between the buying and selling price as profit. The gas producers were “depositors” in this analogy to a commercial bank, and the consumers were the “borrowers.” Continuing the bank analogy, Enron would pool deposits (supply commitments) that could then be used to fund long-term commitments to gas buyers of 15 years or more.

The unregulated business proved to be a success from the start. The initial business consisted of providing long-term fixed price gas, which Enron was able to provide internally from Enron’s internal reserves. In 1988 the company had a “near death” experience following the very difficult 1986-87 period.

Mark Palmer, Vice President for Corporate Communications, Enron Corp.

In 1988 the company had a “near death” experience following the very difficult 1986-87 period.

Mark Palmer, Vice President for Corporate Communications, Enron Corp.

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6. Fortunately for Enron, its take-or-pay liabilities were less than many of its competitors, some of which ran up liabilities in excess of $1 billion.


Oil and Gas. However, Enron quickly moved to combine physical transactions with financial contracts in novel ways. For example, in 1989 negotiations with a Louisiana aluminum producer broke down when it tried to get fixed-price gas from Enron. The problem was that Enron’s costs to physically transport gas to the customer made the deal unattractive. Enron devised a solution involving the first natural gas swap agreement. The agreement called for the customer to buy gas locally, paying a floating price, and simultaneously purchase a swap from Enron in which Enron would pay the producer’s floating rates and the producer would pay Enron a fixed rate.

The new strategy posed two major problems that led to major structural changes in Enron’s organizational structure. First, unlike the commercial banking system, there was no deposit guarantee system for the gas bank. This meant that Enron had to design and implement a sophisticated asset-liability risk management system to manage its own liquidity. Second, the demands of the new, fast-paced trading environment created a need for a drastic upgrading of the caliber of Enron’s personnel.

Enron’s response to both these problems provides an excellent example of Michael Jensen and William Meckling’s fundamental insight that the structure of a corporation—that is, its delegation of decision-making and its performance evaluation and reward system—must be consistent with the business strategy. Specifically, neither Enron’s organizational structure nor its personnel were prepared for the demands of the new unregulated business. As a consequence, management changed the firm’s structure to suit the requirements of the new business strategy. This entailed reducing the number of layers of management from fifteen to four, thus moving decision-making authority closer to the individuals who possessed the “specific knowledge” necessary to make the best decisions. At the same time, it involved upgrading the capabilities of managerial talent and changing the firm’s human resource policies (notably, its performance review and reward systems) to reflect the greater demands of the new organizational structure.

CORPORATE RISK MANAGEMENT

To address the risks involved in carrying out its new gas bank business model, Enron developed a highly innovative and comprehensive approach to risk management. Historically, the first approach to risk management involved setting position limits expressed in terms of notional amounts a trading desk could hold at any point in time. The overall position limits for any institution were arrived at using experience, intuition, and estimates of potential losses.

The next step in the evolution of risk management techniques was the introduction of sensitivities of the values of different financial instruments to a one-unit move in the price level of the underlying financial instruments (for example, one basis point movement in interest rates, or one dollar move in the price of crude oil). The disadvantage of this approach is that it ignores the fact that the price curves seldom evolve in parallel shifts. Therefore, the next step was to replace the sensitivity approach with an estimate of value-at-risk (VaR) at an instrument level. This approach recognizes that price and interest rate curves change over time in more complicated ways than upward or downward parallel shifts. The next advance in Enron’s corporate risk management program has been the implementation of VaR at the portfolio level. This approach takes

If you ask an outsider what industry Enron is in they will say energy. If you ask an insider they will tell you that we are in the risk management business. We provide certainty of delivery and certainty of price.

Andy Fastow, CFO, Enron Corp.

10. See Bhatnagar and Tufano (1995, p. 4-6) for details.
12. The Enron case also illustrates the argument, made by James Brickley, Clifford Smith, and Jerold Zimmerman (see “The Economics of Organizational Architecture,” Journal of Applied Corporate Finance (summer, 1995)), that the optimal organizational structure for a firm will depend upon the combined influences of the firm’s external business environment (i.e., technology, markets, and regulation) and the business strategy selected by the firm. They specifically argue that deregulation causes firms to decentralize decision-making and to redesign their performance evaluation and reward systems to provide lower-level employees with the incentive to make the best use of their new decision rights.
into account relationships between different markets and measures the probability of a loss of a defined magnitude over a certain time period. Enron uses a combination of these tools in managing their risk exposure.

The main highlights of the Enron’s risk management system are as follows:

1. Enron has an enterprise risk management strategy that is under the direction of the chief risk officer (CRO), who reports directly to the firm’s CEO and board. The CRO provides a systematic oversight of all corporate risks. For example, in 1999 this involved transactions with roughly 8,000 counter parties involving some $20 billion in revenues, a staff of 150 risk management professionals, and a budget of more than $30 million.13

2. The company has access to its own unique source of price information for each commodity in which it makes a market. Every day each commodity’s trading desk posts a single forward price curve. For commodities such as natural gas that have a very liquid market, the forward curve is taken directly from market prices. In less liquid markets, however, the traders must make their own assessment of the forward curve. The important points to note here are that all traders use a single forward curve, and the assessment of forward prices is made by traders who are most knowledgeable about current market conditions. Finally, the CRO is responsible for validating the trader’s forward curves. This involves seeking outside verification for forward price estimates whenever possible and challenging the assumptions of the traders who construct these estimates. This provides a source of discipline to the traders who post prices.

3. For risk management purposes, transactions made by different units of the firm are classified and sorted into so-called books, i.e. portfolios of contracts that represent similar risks. For example, a transaction based on the price of natural gas at San Juan Permian Basin would be broken into a price transaction corresponding to the NYMEX/OTC market forward price curve and a basis component that corresponds to the difference between a location specific price and the NYMEX reference price. Both parts of the transaction will be recorded and hedged in separate books that are managed by different traders. It is important to note that the management of the firm’s risk exposure is assigned to those traders who, because of their specialized knowledge of market conditions, are most competent to perform the task.

4. The books are re-priced each night and used to produce reports showing the firm’s positions in the morning. Consequently, all transactions with non-affiliates are marked-to-market on a daily basis.14 This means that fluctuations in market prices are immediately made transparent as they are reflected in the value of the books daily. Under traditional historical-cost accounting, changes in the market values of the firm’s assets and liabilities become apparent only when a purchase or sale occurs, which may take months or even years. Thus, mistakes and poor fortune can be hidden from view for extended periods of time simply through inaction on the part of the firm’s management.

5. Enron has developed quantitative models to assess the price and credit risk of its positions. To evaluate price risk Enron pioneered the use of value-at-risk models in 1992 long before these models attracted widespread use. Specifically, the firm uses VaR measures that assume a one-day holding period and a 95% confidence level.15 In addition to market or price risk Enron is exposed to the potential credit risk of its more than 8,000 counter-parties. Thus, the company has developed a set of predictive models designed for use in assessing the future credit risk exposure of the company.16

6. The trading operation does not make bets on the direction of the market prices. The firm’s stated objective for its trading activities is to hedge deals originated by other units of the company or to offer derivative instruments (swaps, options, forward transactions) that are immediately hedged. Of course, in any trading operation that provides liquidity to the market, it is not always possible to have a perfectly matched book at the close of business each day. At Enron, managing the risk revenue in the year in which the contract is signed. The remainder of the margin (the loss reserve) less physical delivery costs is recorded over the life of the contract if nothing changes. Correspondingly these commitments to buy and sell gas give rise to assets and liabilities. Note that where the portfolio of assets and obligations is balanced with identical purchase and sale volume commitments, changes in the price of gas do not have an impact on the income statement.


14. This means Enron “books” a portion of the net present value of each hedged transaction at the time the contracts are initiated. This mark-to-market accounting practice is used by banks but few industrial concerns. In very simple terms, this is how it works. Enron contracts to deliver gas at $2.00/MMBtu for which it was paying $1.80/MMBtu. The present value of the $0.20/MMBtu difference (net of transportation costs and reserves set aside to protect against changes in the market value of Enron’s position) would be recognized as a source of discipline to the traders who post prices.


LEVERAGING HUMAN RESOURCES

The demands of the new fast-paced, trading environment created by the new unregulated business unit forced Enron to make major changes in its policies regarding human resources. The changes started in the Capital and Trade group in the early 1990s, and they have since spread throughout the corporation.

In a very general sense, the overriding objective of Enron’s human resource policy is the same as in any firm: “to attract and retain the talent needed to compete successfully in the firm’s new ventures.” There are three key features of Enron’s human resource policy that, if not unique, are at least quite different from the practice of most large public corporations:

1. a rigorous semi-annual review process used to identify the firm’s best talent;
2. compensation policies that are tightly linked to the performance review process; and
3. an open market for talent wherein employees are free to move from one business unit to another as needs arise.

The primary employee monitoring mechanism at Enron is the bi-annual performance review. This process begins with the selection of reviewers that the employee’s supervisor must approve. Once the individual reviews have been completed, they are passed on to a performance review committee (PRC) that ranks the employees at each managerial level (i.e., analyst, associate, managing director, vice-president, etc.) from highest to lowest. The ranked employees are then sorted into one of six performance categories: superior, excellent, strong, satisfactory, needs improvement and issues. (The Appendix contains definitions for each of the performance categories.) Compensation policies are linked closely to the results of the performance review, with incentive compensation standards set for each of the six performance categories. The range of incentive compensation Enron pays out to the various groups tends to be very steep by industry standards.

An important benefit of the stringent performance evaluation process is the ongoing identification of the best performers in the corporation. This information then facilitates the resource allocation process into new businesses, as the leaders of those efforts are able to quickly identify the quality of the talent available for recruiting into the new endeavor.

Enron not only allows employees to move freely about the firm but also encourages them to do so in very significant ways. For example, at senior management levels all job titles are portable and go with the individual, not the job. Perhaps more important is the “financial carrot” that goes along with moving toward good business opportunities. Enron typically provides the founding team of a new business with “phantom equity” whose value is tied to the success of the business.

President Jeff Skilling describes Enron’s personnel policies as “loose-tight.”

“Only two things at Enron are not subject to negotiation: the firm’s personnel evaluation policy and its company wide risk management program.”

17. Enron’s risk management policy seems broadly consistent with what Rene Stulz has described as “selective” as opposed to “full cover” hedging. This strategy involves hedging designed mainly to eliminate costly “lower-tail outcomes”—the kind that could rise to financial trouble—while often preserving the “upside” or the firm’s ability to exploit any comparative advantage it may possess in bearing other risks. See René M. Stulz, “Rethinking Risk Management,” Journal of Applied Corporate Finance Vol. 9 No. 3 (Fall, 1996), pp. 8-24.

18. For example, the skills and behaviors used as the basis for evaluating the performance of Vice President/Managing Director are the following: (i) innovation/entrepreneurship, (ii) communication/setting direction, (iii) teamwork/interpersonal, (iv) leadership/vision/values, (v) business instincts, and (vi) analytical/technical.

19. The final distribution is not fixed in advance, however, the company does have a preferred distribution of employees across the categories. L. M. Sixel (in “Enron rating setup irks many workers,” Houston Chronicle, January 25, 2001) reports that the allocation of employees across groups is 5% in the superior category, 30% excellent, 30% strong, 20% satisfactory, and 15% needs improvement or issues. She goes on to note that the potential downside to such a ranking scheme is that it may pit employees against one another, for relative performance dictates which group you fall into, not necessarily the quality of the level of performance.
The open market for personnel within Enron provides another unique source of value to the firm’s upper management—it helps guide their strategic allocation of financial capital. According to CEO Ken Lay, Enron “doesn’t have a formal strategic planning committee.” Instead, “ideas flow up from within the firm and it is top management’s responsibility to make sure that the money and resources of the corporation flow to the projects that attract our people.” This system of capital allocation works because people are allowed to move freely from one business unit to another provided they can convince the new unit to hire them. In this way the company’s human resources are continually reallocated to where the individual employees perceive the opportunities are greatest. Enron’s top management then allocates financial capital in accordance with how the company allocates its capital. And, to the extent that employees possess special knowledge of the company’s prospects that would be very difficult (expensive) to transfer to the firm’s top management, this capital allocation practice is consistent with Jensen and Meckling’s prescription that “decision rights” be delegated to the employees who possess the knowledge necessary to make the best decisions for the firm.

KEY FEATURES OF THE ENRON BUSINESS MODEL

Combining Physical Assets and Financial Instruments

By creating derivative contracts on energy commodities, Enron facilitates the transformation of cash flow streams from physical assets. For example, consider the problem faced by a power producer that operates a single burner power plant but wants to create a dual burner power plant so that it can choose the cheaper of two fuel alternatives (for example, natural gas and residual fuel oil). One way to accomplish this objective is to acquire the ability to use different fuels through investment in the necessary fixed assets. Alternatively, the owner of a single burner plant can use a financial solution that relies on the use of energy derivatives to transform the cash flows of a single burner plant into a synthetic dual burner capacity power plant. With this alternative, the owner buys the fuel required to run the single burner plant (say, gas) and also purchase an exchange option from Enron that allows the holder to pay the lower of either the gas price or the residual fuel price (in equivalent BTUs). This way, if the price of gas (on an equivalent BTU basis) rises above the price of the residual fuel, then the producer pays the lower of the two prices. Such a financial solution creates the flexibility of dual burner plant while avoiding potentially large investments in real assets as well as the need to develop business relationships and training internal staff to physically handle multiple fuels. Moreover, the availability of the financial solution also means that the investor can now compare the cost of upgrading the physical facility and incurring larger internal purchasing, handling and transaction costs with the costs of implementing the financial solution.

Focusing on Asset Optionality

Enron’s business model differs in a very critical way from that of other energy companies that traditionally invest heavily in fixed assets. Enron instead focuses on leveraging its investment in human capital. This is reflected in the firm’s strategic acquisition of assets that offer significant optionality. For example, the typical electrical utility builds and operates large electric power plants that require huge capital investments and earn modest returns. Enron, however, recognized that in a world in which electric markets are being deregulated and price swings are increasing, there is value to owning smaller “peak-load plants” that can be switched on and off as the price of power fluctuates.

In June of 1999 the company opened three gas-fired power plants in northern Mississippi and western Tennessee. These plants were less expensive to construct than conventional power plants but generate electricity at an incremental cost that is 50-70% higher than that of the most efficient plants. However when the cost per kilowatt-hour jumps from $40 to $7,000, as it did on June 25, 1999 in parts of the Midwest, even very inefficient plants can be profitable. Furthermore, to ensure the economic operation of these plants, they are controlled directly from the electric power-trading floor. In essence the

peaking plants represent a set of call options on electric power that can be exercised whenever the value of the electricity they produce exceeds the cost of producing it and the start-up costs of initiating production. For this type of plant the increased volatility in power prices that accompanied deregulation actually adds value.21

Organizing around a Network Strategy

Another key feature of Enron’s business model involves the explicit recognition of the value of a network strategy. Using networks Enron’s management accelerates its growth with minimal capital expenditures. Enron’s 1999 Annual report describes the firm’s network approach as follows:

Assets form the foundation of network businesses that sell up and down the value chain. Layered on top of our physical assets are: (1) strategic contractual relationships, which ensure us access to other people’s physical assets without owning them ourselves, and (2) our market-making ability, which allows us to draw on the most flexible, most efficient components to create higher-value products and services for our customers. (1999 Annual Report, p. 2)

Enron’s wholesale energy services business (Enron Wholesale) provides an example of how this network strategy works. Enron builds its wholesale businesses through the creation of networks involving asset ownership, contractual access to third-party assets, and market-making activities. Each market in which Enron Wholesale operates utilizes these components in a slightly different manner and is at a different stage of development. This network strategy has enabled Enron Wholesale to establish a leading position in its markets without making the huge investments required for physical ownership of many of these assets.

CONCLUSION: LESSONS LEARNED

This paper documents the Enron story spanning the firm’s modern day transformation from regulated gas pipeline company into the world’s leading power marketer. The genius of the transformation is evident in the firm’s recognition that the demands of the new unregulated environment radically changed the demands placed on both the organization and its personnel. Both these areas were effectively dealt with in the transformation of the firm, and the results bear this out.


The organizational structure that worked for Enron when it was a regulated gas pipeline company was not appropriate for the new unregulated power trading company. The new environment was characterized by rapidly changing market conditions that demanded decision makers possess highly specialized knowledge to respond effectively and in a timely manner. Recognizing this Enron moved quickly to hire, and delegate decision rights to, a cadre of new employees who could deal effectively with the demands of the trading environment. However, merely delegating decision rights to competent employees is not enough to ensure continued success. Specifically, where these decision makers do not bear the full consequences of their decisions they may take on more or less risk than the shareholders might wish. One has only to recall the results of Barings Bank’s rogue trader to be reminded of the dangers of delegation without adequate oversight.

To address the potential dangers of decentralized decision-making, Enron built an elaborate system of risk management controls for their traders. The objective of risk management is not to eliminate risk but to control it. This meant that Enron had to design a reward system that would encourage the type of innovative and entrepreneurial decisions that would succeed in the new trading environment.

What can be learned from the Enron experience that might be applied elsewhere? President and COO Jeff Skilling suggested that there is indeed much that can be learned from the Enron transformation and, given the right circumstances, others might also be able to follow their example. Specifically, Skilling offered the following words of advice:

1. First, there must be a real sense of urgency to stimulate genuine change in the organization. Enron’s initial transformation came on the heels of major upheaval in the natural gas industry as it was being deregulated. The forces of product market uncertainty, combined with an apparent takeover attempt by Irwin Jacobs, guaranteed the urgency required for Enron’s bold transformation.

2. Second, there must be an absolute commitment to change such that there is no going back. Many firms have attempted radical change only to turn back when the difficulty of the transition became obvious. The combination of deregulation of the natural gas market and the debts incurred in fending off a
takeover attempt left Enron with no choice but to move forward; there was no going back to the old business model.

3. Third, you must create an organizational architecture that unleashes the talent in the organization. This means that you must fundamentally change the reporting and compensation system so as to allow people to take advantage of their own ideas. Enron recognized that its new competitive business model required bright and energetic personnel with an entrepreneurial focus who could be entrusted with significant decision authority. The old hierarchical business structure of the regulated company did not fit the new business model and had to be overhauled.

4. Finally, it is absolutely crucial that you commit to a program of continuous recruiting of new talent and retaining that talent into the organization. The principal attributes of new hires should be a combination of intelligence and flexibility. Herein lies the source of the Enron's ongoing success. Enron leverages its people and delegates significant decision authority to them. The continued success of this highly decentralized organization is dependent on engendering a healthy level of competition within and among the firm's employees that can be balanced against the need for cooperation in each of the firm's business ventures. The constant stream of talented and motivated hires fuels competition and cooperation is encouraged through compensation schemes that tie the individual's pay to the performance of the company as a whole as well as the particular business unit where they are employed. Enron uses stock options and grants to accomplish the former and phantom stock to accomplish the latter.

■ VINCE KAMINSKI

is Director of Research at Enron Corp.

■ JOHN MARTIN

holds the Carr P. Collins Chair of Finance at Baylor University's Hankamer School of Management.

APPENDIX ■ ENRON RATING DESCRIPTIONS

<table>
<thead>
<tr>
<th>Performance Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPERIOR</td>
<td>Consistently goes above and beyond expectations. Role model for criteria. Very little need for growth and change at current level</td>
</tr>
<tr>
<td>EXCELLENT</td>
<td>Exceeds most expectations. Role model for most criteria. Further development needs are minimal.</td>
</tr>
<tr>
<td>STRONG</td>
<td>Meets most and exceeds some expectations. Role model for some criteria. Further development needed in some areas.</td>
</tr>
<tr>
<td>SATISFACTORY</td>
<td>Meets many but not all expectations. Demonstrates most of the criteria. Further development needs in many areas.</td>
</tr>
<tr>
<td>NEEDS IMPROVEMENT</td>
<td>Does not meet most expectations. Demonstrates some of the criteria. Further development necessary in most areas.</td>
</tr>
<tr>
<td>ISSUES</td>
<td>Has significant performance issues. Does not demonstrate most of the criteria. Must make changes or termination likely.</td>
</tr>
</tbody>
</table>