

Shell Chemical Thinks Growth

Seven Years to Double U.S. Sales

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At the same time, he has set an ambitious goal to double Shell Chemical's sales in the next seven years. "If we look at the history of [Shell Oil], we see the chemical company as being pretty static over the past 10 years, and not the growth we would have hoped for." The aim of doubling the company "is a very different mindset from the recent past," van der Veer says.

Van der Veer's arrival coincides with a series of changes within the Royal Dutch/Shell group worldwide. Even after Royal Dutch/Shell bought full control of it in 1984, Houston-based Shell Oil has maintained a certain autonomy—partly because of concerns about product liability and taxation—and was excluded from the McKinsey-led reorganization launched last year. Recognizing global customers' desire to deal with a single supplier, however, and to counter what is seen by Shell's competi-

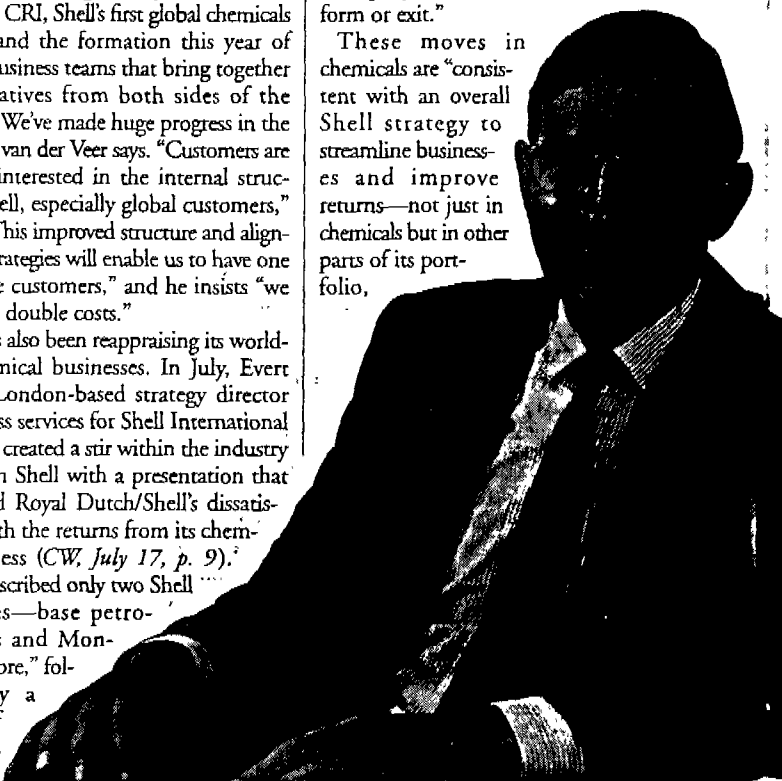
tors as a major handicap for Shell worldwide, Shell's U.S. and European chemical operations have been cooperating more closely.

Among the company's milestones are the 1995 formation of Montell, the worldwide polypropylene market leader, with Montedison; the launching in early 1995 of catalyst maker CRI, Shell's first global chemicals venture; and the formation this year of product business teams that bring together representatives from both sides of the Atlantic. "We've made huge progress in the past year," van der Veer says. "Customers are not very interested in the internal structure of Shell, especially global customers," he says. "This improved structure and alignment of strategies will enable us to have one face to the customers," and he insists "we don't have double costs."

Shell has also been reappraising its worldwide chemical businesses. In July, Evert Henkes, London-based strategy director for business services for Shell International Chemical, created a stir within the industry and within Shell with a presentation that underlined Royal Dutch/Shell's dissatisfaction with the returns from its chemical business (*CW*, July 17, p. 9). Henkes described only two Shell businesses—base petrochemicals and Montell—as "core," followed by a group of businesses in the "sustain

and enhance" category, including ethylene oxide and ethylene glycol, polyethylene terephthalate (PET), and solvents. However, several businesses in which Shell has leading market positions—including higher olefins, thermoplastic elastomers (TPEs), and epoxy resins—were classified as "transform or exit."

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Van der Veer: Productivity improvement and globally competitive businesses.

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All these changes, says Rob Harvan of consulting firm Bonner and Moore (Houston), demonstrate that there is "a reinvigorated culture in Shell" that is trying to come to grips with a certain complacency that had grown up within the world's biggest petrochemicals company. Harvan sees evidence of the complacency in a slowdown of technological development at Shell and of growth in its specialty businesses in the past decade.

The strategy that van der Veer talks about ties in with these changes. "To get a new mindset for the people here, we have to make very visible how serious we're going to be about growth," he says. That has been framed in the top management organization that he put in place in February. Peter de Leeuw, former v.p./marketing and chemical sales, is now v.p./growth. Alongside him are heads of Shell's four businesses, renamed "strategy directors": Gerald Syler, base chemicals; Tom Cattarin, intermediates and solvents; Dale Holecck, polymers; and Larry Wheeler, in charge of Shell Oil's Saudi petrochemicals joint venture with Saudi Basic Industries at Al-Jubail, which represents just under 5% of Shell Chemical's sales. The strategy directors "are the drivers of the company," says van der Veer, "with globally coordinated strategies."

FLANKED. These positions are flanked in a matrix structure by operational functions—marketing, sales, R&D, and manufacturing—"who can concentrate on operational excellence," van der Veer says. The job cuts are 95% complete. "Instead of a slow process that makes everybody unhappy, we have had a lot of voluntary severances and very limited layoffs," he says. "It's better to have that behind you. We've taken out more than one [organizational] layer, and sometimes three."

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The blueprint is being applied in Shell Chemical's basic chemicals operation. Two small refineries—Louisiana Land's Mobile, AL unit and St. Rose Refining Co.'s St. Rose, LA unit—bought during the past year represent captive units that enable Shell Chemical to focus on paraffinic cracker feeds to optimize chemicals production rather than on feeds from refineries devoted to gasoline production.

Meanwhile, Shell is debottlenecking olefins production. Van der Veer describes the company's ethylene production as the "tree trunk" from which the branches of the business grow. At Deer Park, TX, 200 million lbs/year of new capacity started up in April, with another 200 million lbs/year scheduled to come onstream by the start of 1998. At Norco, LA, an additional 400 million lbs/year of capacity is due onstream in the fourth quarter. The additional 800 million lbs/year will bring Shell's total ethylene capacity to 5.25 billion lbs/year, exceeded in North America only by Dow Chemical and Nova. At 320 million gal/year, Shell Chemical is the top U.S. benzene producer.

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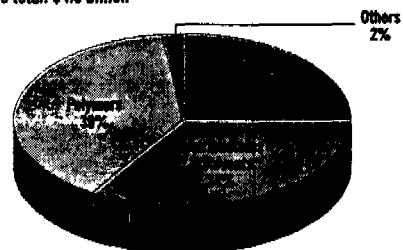
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In polymers, substantial investment is under way in PET bottle resin, which is help-

SHELL CHEMICAL'S PORTFOLIO

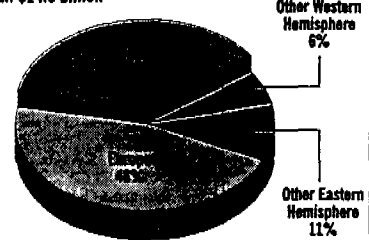
1995 total: \$4.8 billion



Source: Shell Oil (Houston).

SHELL'S U.S. SHARE*

1995 total: \$14.6 billion



*Shell Chemical's share of Royal Dutch/Shell's total chemical sales. Source: Shell International (London).

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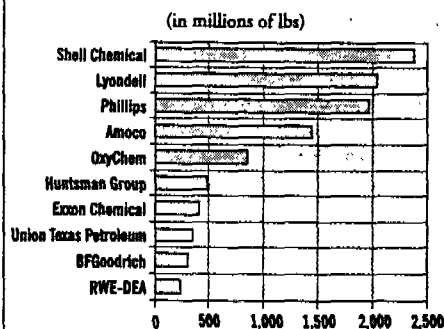
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ETHYLENE MARKET MUSCLE



"U.S. ethylene surpluses based on 1996 capacity. Source: CMAI (Houston).

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positions in chemical solvents such as isopropyl alcohol and methyl ethyl ketone, it is hard to see how the company can achieve much growth there given that environmental pressures put a ceiling on demand. Export sales of these products are healthy, however.

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SHELL CHEMICAL'S RESULTS

	(in millions of dollars)				
	1991	1992	1993	1994	1995
Sales	\$3,378	\$3,354	\$3,687	\$4,075	\$4,841
Income from ongoing operations	163	93	220	223	704
Capital expenditures	199	424	319	343	422
Employees	5,500	5,185	4,957	5,000	5,665 ¹

¹ Increase is due to internal Shell Oil reorganization assigning employees to Shell Chemical who had been part of Shell Oil service functions. Source: Shell Oil (Houston).

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SEPTEMBER 18, 1996

Benlate DF Litigation

Fourth Ruling Against DuPont

DUPONT CANNOT STEM A RECENT SPATE of unfavorable rulings in Benlate DF fungicide lawsuits. Early this month a Hawaii state judge ruled that the company had withheld evidence that might have shown that Benlate was contaminated with the weed killer sulfonylurea (SU). That marks the fourth time since January 1995 that a judge has found DuPont guilty of legal misconduct in Benlate cases.

The current ruling is based on testimony in a July 1993 Benlate hearing in Hawaii in which a DuPont attorney claimed that the company had no "ongoing" tests of possible SU contamination; however, the judge agreed with plaintiffs that DuPont withheld early test data contracted to a California lab that might have influenced the \$4.35-million settlement.

DuPont says the latest ruling mirrors the finding last year of a Georgia judge, who fined the company \$115 million for alleged-

ly withholding the same test data (CW, Sept. 6, 1995, p. 18).

"Former plaintiffs who voluntarily settled their Benlate cases more than three years ago now seek more money from DuPont based on allegations of scientific and legal misconduct that are untrue," according to a company statement.

STILL HOPEFUL. DuPont is appealing the Georgia case and looks to a favorable outcome to remedy the other misconduct rulings, including another one from a Hawaii court in January 1995 and one from a Miami court just two months ago.

In other Benlate litigation, last June a Miami judge awarded \$4 million to a woman who claimed that exposure to Benlate during her pregnancy caused her son to be born without eyes. DuPont is also appealing that verdict.

—JUDY STRINGER

CMA 175143

SEPTEMBER 18, 1996

Audit Privilege

EPA, States Battle over Immunity

ALTHOUGH MORE THAN 18 STATES HAVE PASSED AUDIT PRIVILEGE BILLS that give immunity to companies that voluntarily disclose non-compliance found during environmental audits, the measures apparently do not have EPA's sanction. According to the Washington Legal Foundation, EPA says it will revoke state-delegated authority over air, water, or hazardous waste programs where the agency deems a state's immunity bill might weaken enforcement of a federal program.

This year Michigan, New Hampshire, South Dakota, and South Carolina passed audit privilege bills, joining 14 states that have enacted similar legislation (CW, Nov. 1, 1995, p. 34); however, the state bills do not protect companies against federal agencies or

courts. EPA defends its policy, promising to waive or reduce penalties for violations discovered in an audit, but it reserves the right to consider each case individually.

Earlier this year EPA instructed its regional offices to review state audit protection laws before approving state air programs. The Washington Legal Foundation says many states have felt the impact of that directive—including Colorado, Idaho, and Texas, which have had approval for state-run federal waste and air permit programs withheld or declined. EPA has been allegedly pressuring states considering immunity bills not to enact them. The foundation is calling for the adoption of a federal policy to protect audit information. Federal legislation on audit privilege was introduced in the Senate last May but failed to gain support (CW, May 29, p. 13).

—JUDY STRINGER

FOR BASF, BIG IS STILL BETTER

SEPTEMBER 16, 1996

Restructuring and becoming 'transnational,' the huge, integrated company still believes in huge, integrated plant sites

Patricia L. Layman
C&EN London

In 1932, two German industrial firms—chemicals producer BASF (Badische Anilin und Soda Fabrik at that time) and electricity company AEG—began a collaboration that culminated in the first tape recorder, introduced in 1935 at the Berlin radio exhibition. Last month, BASF signed a letter of intent to exit the magnetic tapes business by selling its magnetic products operations to Turkish electronics company RAKS.

The business isn't a big part of BASF—only about 3% of total sales in 1995 of the company that topped C&EN's Global Top 50 list this year. But the decision to shed some of its history is a dramatic indication that the German chemicals giant is grappling with the thorny challenge of reshaping itself to capitalize on the strengths in its tightly integrated portfolio.

"Magnetics were originally close to our core competencies—pigments, coatings, and plastics," Jürgen Strube, chairman of BASF, tells C&EN. "But in the 1980s, the business changed dramatically. It is now driven by consumer electronic equipment manufacturers. Therefore, [BASF's magnetics unit] is better off in the hands of a company focusing on these businesses."

Although the magnetics business had been losing money over the past few years, and management was sometimes criticized for not bailing out earlier, the exit took time, Strube says. "We have struggled very hard to turn the business around. And we have done so, so other partners could be attracted to the business. It is difficult to find a partner interested in a company posting losses, but if it is doing better than breakeven, someone might be interested."

Besides, he adds, the employees in the business "had made sacrifices in the past." That dictated that the company's exit from

the business could not be abrupt.

The magnetics sale fits in with guidelines the company has established for underperforming businesses and assets. The company has established deadlines for making such assets attractive to BASF over the long-term, he says; if it becomes clear they cannot meet the deadlines, and that they would receive better care from someone else, BASF is willing to let the business go.

Another example is BASF's pending sale of most of its holding in German potash producer Kali & Salz to Potash Corp. of Saskatchewan (PCS) (C&EN, Sept. 9, page 8). "Potash is not a core business of BASF, but it is of PCS—this deal will help them go global," Strube says. European antitrust authorities have expressed some concern about the purchase, but Strube believes the deal ultimately will go through: "We are convinced the question can be resolved. The sales and market position of PCS is in North America and Asia, and Kali & Salz is in Europe. The real competitors to any European producers are the C.I.S. [former Soviet Union], Israel, and Jordan."

Such global concerns are playing an increasingly important role in shaping the companies of the chemical industry. As Strube puts it, "We are following and serving our customers. We must identify opportunities arising from the decisions of our customers. What kinds of companies, for example, are establishing a base in China? Should BASF establish a base there, too, or will those customers be satisfied [with being] supplied with imports?"

The company must then ask itself, he continues, "Do we really want to invest so much in country A or B? Or would that be an accumulation of risks so big we don't want to? Are the rewards big enough? It is not top-down analysis, but a bottom-up demand from our customers" that shapes the company's decision on what its priorities will be.

Also contributing to the priority setting, Strube adds, is the implication for raw materials. "We don't want to be raw materials driven—for example, to say that we need a cracker in each major market," he

says. "Rather, we ask ourselves what markets will be served? What do they mean to our portfolio structure? What do we need in raw materials? All those questions are tied together."

Such questions become particularly important when the company begins considering a major investment, such as the one it is negotiating for China. BASF's earliest investments in China, in the beginning of this decade, were small and scattered—dependent, Strube says, on the desires and locations of the company's joint-venture partners.

Since then, however, BASF's historic preference for large, integrated sites has come to the fore in its proposals for a major petrochemicals complex in Nanjing, near Shanghai, worth some \$4 billion—a sum that has raised eyebrows in the financial analyst community.

Strube doesn't envision "Ludwigshafen 2," a duplication of its highly integrated and intertwined, massive headquarters complex. "Ludwigshafen cannot be repeated," he states. "There are 131 years of development in the chemical industry there, it simply cannot be repeated." He cites BASF's integrated site in Antwerp, Belgium, as an appropriate model for the Chinese site.

Integration is particularly important—and valuable—to BASF, Strube contends. He refers to the concept of "verbund"—basically translated, a compound or association, but in context, much more. "It does not mean just integrated production units. It also involves know-how sharing; integrated energy management; and synergies in logistics, distribution, and infrastructure as well as in raw material supply and waste management," he says.

And although financial analysts often criticize the company's integrated dependence upon "heavy chemicals"—of the major German chemical producers, it is the least diversified into areas such as pharmaceuticals and health care—BASF remains convinced of the soundness of this approach.

As Strube argues, "We believe that in logistics, infrastructure, and energy management alone, BASF profits from an integration bonus worldwide of at least 1 billion deutsche marks [about \$675 million] every year." He cites an example: In Antwerp, BASF has "optimized energy management in our 50 plants. Despite our energy-intensive processes, and due to our energy recovery systems, we need almost no fossil fuels to generate process steam."

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Shell reorganizes to better focus its portfolio on global markets

Patricia L. Layman, C&EN London

At the beginning of the year, Anglo-Dutch oil and chemicals giant Royal Dutch/Shell pulled into place a newly reorganized structure that abolished its former complex matrix of regional, functional, and business-sector organizations. Instead, the corporation settled on four overall businesses—exploration and production, oil products, gas and coal, and chemicals—which, in turn, guide a number of operating companies.

For the chemicals operation, as for the others, the past year has been preoccupied with the reorganization, says Evert Henkes, director of strategy and business services. Henkes is, in effect, the successor to the corporation's former chemicals coordinator. Chemical sales totaled about \$15 billion in 1995. The newly organized operation is only now coming up for air and is ready to discuss with the outside world the reorganization that has given Shell Chemical a dozen operating businesses—ones the company is now in and wants to stay in. The chemicals operation also includes a research structure that debuted in April, one that Shell Chemical hopes will make its efforts more coordinated and effective.

A five-person business committee now leads Shell Chemical, with responsibility for Shell Chemicals Europe, petrochemicals outside Europe, specialties, research and technical services, and strategy and business services. They, in turn, work with the teams running the operating businesses, which range from basic petrochemicals to fine chemicals.

Shell Chemical has roughly sorted those businesses into three categories, which are, according to Henkes—"leadership" businesses, "new" businesses, and "businesses not currently meeting requirements."

In the leadership category, Shell places a variety of units, including styrene, propylene oxide, ethylene oxide and ethylene glycol, polyethylene terephthalate (PET), catalysts, and hydrocarbon and chemical solvents.

"These businesses," says Henkes, "we must sustain and enhance." An example he cites is Basell, the 50-50 joint venture in styrene and propylene oxide with BASF in Moerdijk, the Netherlands. "This will be a handsome world-scale operation," he says. "There is no intention of this joint venture being global; it is just a manufacturing, single-site venture. We will be the operator. This is a very focused manufacturing joint venture. BASF will market its half of the production, as we will ours."

As for PET, he notes, "depending on what parameter you measure, we are second or third globally. Until last year, the business was attractive not just for growth but for margins; today, growth [is still strong], but the margins are not attractive. We must look at the cycles, and make sure we can make an acceptable return."

One problem he sees is increasing capacity worldwide: With the new PET capacity coming on-line from various producers worldwide, he says, "we will drop down in the rankings. To sustain our position, must we build more capacity, adding to a capacity spiral? It is a conundrum we must continue to evaluate. Are there ways to achieve leadership—for example, in cost or quality—to allow us to have an acceptable return in margins at the trough of the cycle? Part of the examination of the options we have is feedstocks. We have a lot of *p*-xylene, but it's in the wrong place and is the wrong sort," he points out, although he adds,

"that doesn't mean we can't change that. I would rather not get into purified terephthalic acid. But, we won't preclude any option if it is the way to get cost advantage and enjoy the growth PET has got."

New businesses are being found, selected, and developed, Henkes suggests. Examples are Carilon polyke-

tone, which will be supported by a new plant opening in the U.K. this August, and Corterra, a polytrimethylene terephthalate carpet fiber, for which a plant will come on-stream in Mount Pleasant, W.Va., in the third quarter of this year.

According to Henkes, "The criteria for these businesses are [that they have] fast, positive, and material impact [on Shell's sales and earnings]." Fast is important: The Carilon project, for example, had languished for nearly a decade before the company finally threw its weight behind de-

veloping it. "It is important to reduce the time from discovery of the molecule to market," he says. "We want few and large, not a ragbag of products. Our strength is dealing with large units on a low-cost basis, not in niche marketing."

The company has developed a new process for methyl methacrylate, and, Henkes says, it is discussing commercialization with a potential partner. Additionally, he says, "we would expect

to make an investment in another Carilon plant outside Europe and would expect to announce that by year-end." The next plant, he adds, will be larger than the U.K. plant, which will have a capacity of 44 million lb per year.

The company's answer to "underperforming" businesses, he says, is relatively simple: Transform them or exit them. For example, it is changing its marketing strategy in thermoplastic elastomers to emphasize its Kraton special grades. It has already exited the crop protection chemicals business, selling that unit in 1993.

Shell's polyvinyl chloride (PVC) business has been reorganized and re-engineered over the past couple of years, he says, and the company has developed better relations with customers and suppliers. "Rovin, our joint venture with Akzo Nobel, is a leader in the industry," Henkes says. "In that way, being in the PVC business, we are maximizing shareholder value. But it's a lousy business, right now," it's in a cyclical downturn. "Pa-

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tience is a factor," he continues. "In this consideration, we are not a short-term operator. We will have to continue to evaluate the business."

In epoxy resins, he concedes, "we are a leading producer, but up to now, we haven't managed well on a global basis. We need to optimize what we have globally. What we have on a local or regional basis might not make sense." He says Shell looked at what Ciba and Sandoz might do with their epoxy resins and "concluded that getting together might not be acceptable to various regulatory authorities. We will go with organic growth," that is, growth through the company's own efforts rather than through acquisitions in this area.

Shell's latest venture to be announced is another effort to transform an underperforming business, petroleum additives. In a 50-50 venture, Shell and Exxon Chemical will combine their oil additives businesses, with start-up planned in 1997. The model for the additives joint venture, says Henkes, will be Montell—Shell's 50-50 polymers joint venture with Italy's Montedison. "It will have its own R&D, and future patents will belong to the venture. Current relationships with the parent companies already are on an arm's length basis, and this will continue. There will be no competing additives business in either of the parents." Lubrizol will probably remain the number one petroleum additives supplier, he notes, "but we won't be too much behind."

In all the company's businesses, an increasing emphasis is internationalization. "We want to become a global company. To become a global company, however," he adds, "you don't need a plant in each country—you need it in a logical location, serving customers best. You operate wherever it makes sense. We have no geographic bias at all."

The company is working to build what he sees as "truly global product business teams. We have 12 of these," for each of the basic product areas that compose Shell Chemical.

These product areas lie in the three main chemical divisions that Royal Dutch/Shell has traditionally drawn in its financial reporting: base chemicals, industrial products, and polymers.

Base chemicals, by the company's definition, include the lower olefins ethylene, propylene, and butadiene/butylenes; aromatics; styrene and co-

product propylene oxide; and methyl *tert*-butyl ether. They accounted for some 19%, or \$2.77 billion, of Shell's net chemical sales in 1995.

Industrial chemicals, which contributed \$4.17 billion or 29% of 1995 net chemical sales, include hydrocarbon and oxo-solvents; higher olefins, such as the C₆–C₂₀ range produced by the company's Shell Higher Olefins Process; detergent intermediates and surfactants; and ethylene oxide and derivatives.

Shell's polymers businesses made up a full half of the company's net chemical sales, or \$7.33 billion, in 1995. This segment includes such compounds as polyvinyl chloride, polystyrene, thermoplastic elastomers, and new specialty polymers such as Carilon polyketone.

The remaining share of Shell's net chemical sales, \$309 million, came from a miscellany of operations, including catalysts and the oil additives that are being put into the joint venture with Exxon. Fine chemicals are also part of this small portion, a collection of intermediates that sit uncomfortably with the company's core ethylene-based businesses and that Shell would probably not mind selling or putting into a joint venture.

The teams responsible for these areas are made up of representatives from the various geographic units—for example, for Europe, North America, and other regions. The teams also include representatives from key manufacturing sites and from research and technology. These semiformal units, Henkes says, "are mandated to maximize the group's global shareholder value. It is still in the early days, and we're going up the learning curve with this. These teams will advise the business committee on all strategic issues on that product."

The teams are one way to cope with the disadvantages of decentralization. "One strength we think we have had in the past is decentralization, and we want to keep that," he says. "The operating units remain self-standing, but with a stronger sense of alignment" across geographical boundaries than before. As the company has moved toward this global emphasis, he adds, even the historically prickly relationship with Shell in Houston has become much closer. "It behooves us all to have that sense of alignment."

"We are reintroducing the concept, the

word into our vocabulary, of growth. We are not just looking at costs. Increasing profitability and growth will lead to increased shareholder value. Our goal has been: For sustainable higher level of profitability, you must have growth."

That growth will be underpinned by an ambitious capital spending plan through the end of this decade. The company has announced it will spend some \$7.5 billion through 2000 on chemical projects. Included are various petrochemical projects in Singapore, the Shell/BASF venture in Moerdijk, additional PET capacity in the U.S. and Mexico, and ethylene expansion in the U.S.

In addition, Shell has been negotiating over the course of nine years for a \$6 billion refinery and petrochemical project in southern China. Says Henkes, "It is as important for China as it is for us to make sure we all get it right." However, the impression is left that pragmatism may finally overwhelm patience. He adds: "I would expect we would make a decision with [Chinese officials] one way or the other by the end of the year. There are opportunities we can't let go by to get our fair share of the growth in Asia because of delays in China." □