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American Hospital Supply Corporation: The ASAP System (A)

"The computer is at the heart of our success," said Karl D. Bays, chairman and chief executive officer of American Hospital Supply Corporation (AHSC) in early 1985, describing the importance of information systems to the company. AHSC had 1984 sales of $3.5 billion and net earnings of $238 million. Virtually all of the 7,500 short-term general hospitals in the United States bought at least some of their supplies from AHSC's list of over 135,000 products. Some 5,400 of these hospitals entered their orders through AHSC's online purchasing system, ASAP.

With an estimated 25% to 30% share of the fragmented hospital supply market, AHSC had increased its sales an average of 13% per year from 1978 to 1983; profits after tax rose an average of 18% per year over the same period (see **Exhibit 1**). By 1984, however, the health care industry was in the midst of dramatic changes that impacted AHSC. Fixed-rate reimbursement from the government-sponsored Medicare program, which paid for 40% of all hospital patient days, had made hospitals much more cost-conscious. Businesses and insurers were also exerting pressure to cut health care expenditures, which by 1984 had risen to some $360 billion—more than 10% of the nation's GNP. Hospital admissions fell to 36.2 million in 1984 from their 1982 peak of 37.9 million, while the average hospital stay shortened from 7.2 to 6.7 days. The total number of hospitals had declined from its peak in 1980, although the number of beds had increased slightly.

Supplies were receiving considerably more attention than in the past; they made up an estimated 10% to 15% of hospital costs, while the logistical expenses associated with supplies made up another 20% to 30%. In this difficult environment, AHSC had been able to increase 1984 sales only 4% over 1983. After-tax earnings rose 12%, due largely to a lower tax rate, while operating earnings fell 8%.

For the future, AHSC expected continued change in the health care system. Aggregate demand for care would likely increase, but more slowly than in the past, and consumers would exert more choice. More and more care would be moved outside of hospitals to "alternate sites" (such as doctors' offices and walk-in emergency and surgical centers), and health maintenance organizations (HMOs) would continue to proliferate. At the same time, hospitals would enter into less traditional markets, such as occupational health and "wellness" programs—sometimes in partnership with physicians, nurses, and other providers. AHSC intended to focus on reducing its operating expenses and on increasing its sales, particularly of products that it manufactured in-house. Research and development and an active acquisition program were important links in the company's competitive strategy.

This case was prepared as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

The future role of information systems was somewhat less clear. Could ASAP, which had contributed so much to the company's progress over the past 20 years, continue to play a leading part? Could the company build other strategically important systems for the new competitive environment? Or were information systems now to be primarily support for AHSC's other activities?

Company Background and Strategy

After its founding in 1922 by Foster G. McGaw, AHSC grew slowly, expanding from its original base near Chicago to include a few regional offices by the end of World War II. In the postwar era, AHSC began for the first time to manufacture supplies and to distribute them. The company also expanded into the sale of prepared intravenous (IV) solutions and products and other similar patient care items. During the rapid expansion of the health care industry in the initial years of Medicare, AHSC grew as well; its sales reached $1 billion in 1975 and $2 billion in 1979, due partially to the acquisition of other distributors and manufacturers. By 1984 the company had more than four million square feet of manufacturing space and almost 150 distribution centers worldwide. AHSC-manufactured items made up some 46% of sales and 83% of net profits. The company was organized into sectors according to type of customer: hospital and laboratory, medical specialty, and international.

The hospital and laboratory sector provided products for general and specialized patient care, including IV solutions, surgical drapes and gowns, gloves, syringes, and other items, and instruments, chemical reagents, and other products and services for biomedical and industrial laboratories. Hospitals accounted for about two-thirds of AHSC's sales; the company could provide virtually everything a hospital needed except pharmaceuticals, x-ray gear, and other heavy medical equipment. AHSC made about 25% of its sales to laboratories. Medical specialties developed, manufactured, and marketed devices and drugs to physicians and related specialists, primarily in surgery and critical-care medicine. Medical specialty products included diagnostic equipment, surgical instruments, heart valves, and blood-collection systems. AHSC served international markets through wholly owned subsidiaries, joint ventures, and independent distributors. International business accounted for roughly 10% of sales.

AHSC faced competition from other broadline manufacturers (including Johnson & Johnson and Baxter Travenol), from hundreds of local and regional distributors, and from specialist firms (such as Baxter Labs, Pfizer, and SmithKline Beckman). AHSC promoted its nationwide coverage, broad product line, high service level, and the local presence provided by a 2,700-person field sales force. The company's employees tended to be relatively young—Bays himself had become president of the company at age 36—and well-educated. AHSC's culture was characterized by promotion from within, a willingness to take risks, and a strong emphasis on ethical behavior.

AHSC's strategy for the future included increased emphasis on self-manufactured products, on the alternate-site market, and on sales to corporate accounts. Some $700 million was to be invested between 1983 and 1989 on research and development, primarily for products that promoted more cost-effective health care. Almost $1 billion would be spent over the same period on improved facilities for manufacturing and distribution. Acquisitions reflected the key strategy of more manufacturing as well as moving AHSC into the physicians' office and home care markets. Corporate agreements with large hospitals and large multihospital chains gave customers competitive pricing, limits on price increases, and cash bonuses in return for purchasing certain volumes of products. These corporate agreement customers were also eligible to receive consulting services designed to help them control their costs. With some observers predicting that consolidation would soon sweep through the hospital industry, leaving the survivors combined into groups and allied with insurers, physicians, and home health care agencies, AHSC's corporate buying program was expected to play an increasingly important role.

The Role of Information Systems

Traditionally, AHSC's products had been sold by its field salespeople, who worked from their homes and called directly on hospitals and other organizations. Until 1964, orders were generally taken in person by the salesperson, who would then mail the orders to company headquarters. Bays, who joined AHSC in 1958 as a salesperson, recalled that upon arrival in a town he would immediately find out when the last mail of the day went out. "When I had made my calls," Bays continued, "I would rush back to my hotel room and write out all my orders and customer inquiries and get to the post office in time to make the last mail. That was an imperative." The paperwork could be formidable: an 800-bed hospital might easily stock 30,000 items and generate 50,000 purchase orders per year-at an estimated preparation cost of $25–30 each.

Within a single hospital there might be as many as 10 different buyers—the pharmacy, food service, anesthesiology, and so on—and even in hospitals that had adopted centralized purchasing, individual department heads often remained powerful buying influences. The price of each item was negotiated by the customer and the sales representative, making billing a complex process.

In 1957 AHSC had begun to automate its order entry and billing procedures by installing IBM 632 tab-card billing machines in its distribution centers. Orders received at the centers would be keypunched, and the cards fed through the 632. A packing list for the warehouse was produced, as was a summary card for the accounts receivable system. The line item cards from the order were sent on to the home office for sales analysis.

In the early 1960s one of AHSC's West Coast offices began having difficulty servicing a large hospital customer. Orders were frequently delivered late and incomplete, creating problems for both the customer and AHSC. The West Coast office manager put an IBM 1001 Dataphone in the hospital's purchasing department and attached an IBM 026 card punch in the AHSC distribution center to a phone line. The hospital was given a box of prepunched cards—one for each item purchased from AHSC. The cards were physically placed on the shelves of the hospital's stockroom, each card stuck between boxes of supplies at the point where more should be ordered. When the box above the card was taken from the stockroom, the prepunched card was added to the pile of items to be ordered. On a regular schedule the hospital connected the 1001 to the 026 via telephone. Each card was fed through the 1001, causing a duplicate to be punched by the 026 at the AHSC distribution center. The result was a duplicate deck representing the hospital's order. This deck was fed through the 632 and the order process continued as usual. The hospital was able to speed up communications and thus could reduce its inventory. Orders were more accurate and more timely. AHSC benefited as well, and decided to offer the 1001-based service to other customers. More than 200 agreed immediately, and the system, named Tel-American, was extended to other West Coast customers, then to Chicago, and then to other areas. A similar service, Telephone American, worked in somewhat the same way but without the 1001. Instead, the prepunched cards were kept in a box at the AHSC office, and customers called in their orders. The cards were taken from the box manually by the telephone order entry clerk.

Tel-American was well in place by 1969, when Gary Nei was hired as product manager for systems marketing and asked to identify additional customer benefits of the system. "The 1001 was the nucleus but not magic," Nei said later. "The customers could just as easily phone in their orders, and many did. The question was how to bundle additional services." Nei read the relatively small amount of material then available on materials management and wrote a document translating the general theory to the hospital environment. He began to advocate a "prime vendor" approach, in which hospitals would contract to obtain a major portion of their supplies from AHSC. In return, the hospital would get the benefits of lower inventory, reduced paper handling, lower "shrinkage" due to loss, spoilage, and theft, fewer purchase orders and deliveries to handle, and guaranteed service. Tel-American was promoted as part of an overall hospital materials management system. Nei worked with the field sales force to bring home to hospitals the benefits of materials management and to obtain commitments to implement the required disciplines and procedures. In some cases Nei and his

staff swept stockroom floors and physically rearranged inventory in order to get a customer started. Later, as rising interest rates made holding inventory more expensive and as hospital purchasing agents began to understand their ability to become more professional through the use of modern techniques, the concepts promoted by AHSC became widely adopted. “We changed the industry,” Nei noted, “we really did.”

By the mid-1970s some of the novelty of Tel-American had worn off, and IBM had decided to drop support for the 1001. In response, AHSC’s laboratory manufacturing division, TekPro, designed and built a much faster device to read and transmit data from cards. AHSC had by this time installed a mainframe computer system that kept track of orders and inventory, and the TekPro device was attached to this system rather than to a reproducing card punch. The TekPro unit also allowed the hospital to enter some data-for example, order quantities—by hand; more important, it acknowledged that each line of data had been received correctly. The new order entry system, with mainframe computer support, was called Analytic Systems Automatic Purchasing (ASAP).

The ASAP System

Both the Tel-American system and its successor, ASAP, were essentially one way: although special inventories were reserved for Tel-American and TekPro users, the customer could find out for certain when the ordered items would be delivered and in what quantity simply by phoning the AHSC office or by waiting until the AHSC truck arrived. The TekPro unit was highly reliable—some were still in use in 1985—but customers’ needs for a printed response led to the adoption of the Bell 43 terminal as a standard input and output device in 1977.

The printing device and steady improvements in its central computer software gave AHSC the ability to respond to customer orders by verifying the item number and showing the availability and price of each item. Items could be ordered by using AHSC’s catalog numbers or those of its competitors, and orders could be edited for accuracy and completeness before they were transmitted. For items that were not currently in stock, the system could often recommend a substitute but did not make any substitutions automatically. The enhanced system, called ASAP 2, also allowed messages to be transmitted electronically among AHSC, the sales representatives, and customers. As with earlier systems, customers who used ASAP 2 paid for the terminal themselves; AHSC paid the telephone line charges.

In 1980 AHSC announced ASAP 3, which allowed customers to enter orders using the hospital’s own internal stock numbers. Customers could also build electronic files for standing orders and for repetitive orders. These files shortened the customer’s order entry time and improved ordering accuracy. ASAP 3 produced output to customer specifications as well, including inventory lists, purchase orders, and requisition forms. The customer could inquire on-line into pending back orders, prices, and delivery dates. Like its predecessors, ASAP 3 was intended to be used as part of an overall materials management program. The system did not, however, actually manage the hospital’s inventory. An enhancement, ASAP 3 PLUS, incorporated bar code scanning of shelf labels, requisition forms, or a catalog to facilitate order entry. Over the next few years, teletypes, CRTs, and other “dumb” terminals were added to the list of devices supported by ASAP.

ASAP 4, a computer-to-computer order-entry system, was released in 1983. It simplified the hospital’s purchasing process by eliminating all the manual steps except actual approval. The customer’s internal computer system produced recommended orders that, once approved, were automatically transmitted through a high-speed phone connection to AHSC’s mainframe. Order confirmations were sent directly to the customer’s computer system to update the hospital’s files. Hospital size did not always correlate with informations systems capability: some small hospitals were relatively sophisticated, while some very big hospitals relied almost totally on manual systems.

Nevertheless, it was expected that ASAP 4 would be used initially by the major multihospital groups who had corporate agreements with AHSC.

Each hospital placed its ASAP 4 orders at prearranged times of the day; the system was not designed for emergency orders. Customers did not pay for the use of ASAP or for any necessary software customization, which could take up to eight work hours.

ASAP 5, which went into pilot use in December of 1984, promised to extend the capabilities of ASAP 3 by using an IBM Personal Computer (PC) as the customer's input and output device. Customers could build and edit order files on the PC instead of on-line, thus reducing telephone expenses. The PC also would be equipped with extensive tutorial software, allowing a new user to learn in about 15 minutes how to enter ASAP orders. The new system would be menu-driven and would include a HELP facility that could be accessed while entering an order. As in the past, the hardware would be supplied by the customer.

By late 1984 ASAP and a few AHSC financial applications were running on five Burroughs mainframes—three B7800s and two B7700s. The ASAP software, which had been written totally by AHSC, was in a mixture of ALGOL and COBOL. A program to convert ASAP to IBM hardware had been under way for a year and had another 18 months to go. Looking back, AHSC estimated that it had spent about $30 million to build ASAP. Ongoing maintenance required six to nine full-time people. Annual operating costs for the 9,000-terminal system were about $3 million.

The Information Services Division (ISD), responsible for maintaining and enhancing ASAP and other corporate applications, had a staff of about 400. ASAP was not static; a systems review board met four to six times per year with key users to set priorities for changes to ASAP and other systems, as well as for new development. Review board meetings were coordinated by Carl Steiner, director of information systems planning, who was also responsible for putting together a strategic information systems plan for AHSC. Steiner also promoted information systems planning by AHSC's divisions and helped newly acquired divisions analyze their needs for information systems. ISD was judged on the basis of net expense, that is, on spending less chargeouts to divisions.

The competition. AHSC's competitors had responded to ASAP, but it had taken them some time to do so; the first response came two years after the introduction of ASAP. Initial response was difficult in part because the competitors had to computerize their own inventories in order to offer a computerized system to customers. (See "Johnson & Johnson: Hospital Services (B)," HBS No. 9-384-054.)

Customer Benefits

Although no quantitative cost-benefit study had ever been performed on ASAP, customers seemed to feel intuitively that using the system paid off. Through ASAP, hospitals were able to move toward more effective materials management, which was generally perceived as a step forward. Ordering was easier and more fun, and the cost of using the system was very low. Overall, about 50% of AHSC's hospital orders came through ASAP.

At Emerson Hospital, a 250-bed community hospital in Concord, Massachusetts, Purchasing Administrator Coco Richmond discussed ASAP from a customer's point of view. In 1984, Emerson spent some $9.3 million, almost 30% of its overall operating budget, on supplies and related expenses. The hospital purchased supplies from AHSC, Johnson & Johnson, two regional distributors, and a number of small, local distributors. AHSC was the dominant supplier, accounting for over half of Emerson's annual purchases.

Richmond explained that ASAP had been the first order entry system installed at the hospital. Since then, the hospital's other three major suppliers had developed similar systems. All four systems

used the same terminal, which Emerson leased. Some suppliers, such as AHSC, paid the telephone charges, while others did not. Each system worked differently, and to Richmond, each had some strengths and some weaknesses. She did not regard ASAP as a particularly outstanding system in itself, but ASAP combined with AHSC's excellent service record was enough for Richmond to continue ordering from the company even if its prices were 1% to 2% higher than the competition's. The stockroom clerk, who did the actual order input based on instructions from Richmond, noted that it had taken him about a week to learn each new system and that he had little trouble keeping them apart. He, too, regarded ASAP as a good, but not outstanding, system.

In Richmond's office, she and AHSC Account Manager Tom Ingles discussed some items that Emerson was ordering for the first time. The price of each item was negotiated between the two; Ingles worked within broad company-pricing guidelines, and was compensated entirely on the basis of account profitability. When he returned to his office at AHSC's New England Operations Center, Ingles would have the new prices entered into ASAP. The cost of storing this pricing, like the cost of his automobile, was borne by Ingles out of his gross commissions.

Benefits to AHSC Sales Force

Later, in the smoke-filled hospital cafeteria, Ingles recalled that when he first joined AHSC, he had spent a good amount of time dealing with order problems. He sometimes felt that he saw problems on every order, from every account, every day. Now Ingles was able to spend more time selling. While he noted that ASAP was no longer the unique selling proposition that it once had been, Ingles still regarded the system as an important part of AHSC's service. From a personal point of view, he also appreciated the ability to retrieve order data from his home computer, allowing him to be better prepared for sales calls.

AHSC's sales representatives were able to spend less time handling paperwork and more time selling product features and benefits. (The additional focus was evident in the company's sales performance: sales more than tripled from 1975 to 1984, with little increase in the field sales staff and no increase in the sales support staff.) The ability to send and receive messages from customers and the home office made the sales representatives more effective account managers who thereby were able to achieve greater account penetration.

The off-loading of order entry, order-status checking, and price and availability queries to customers saved AHSC time and money, as did error checking on input. Customers using ASAP tended to be more disciplined buyers who got more items on each order, thus lowering the costs of packing, shipping, billing, and collecting. Finally, AHSC received important but difficult-to-measure benefits from analyzing ASAP data to determine order history, usage patterns, economic order quantities, pricing and service levels, and other useful information.

AHSC had also implemented VIP, a "reverse ASAP" that linked the company to its suppliers. Purchase orders were transmitted to suppliers electronically, as were messages about inventory levels, prices, and so on. VIP was not mandatory, but the benefits of faster communications were sufficient to convince most suppliers to use the system.

As important as it was, however, ASAP was viewed by at least some within AHSC as a mature order-processing system. It could, of course, be enhanced to reduce costs, to provide additional reports, and to include such technical features as voice recognition and a video catalog. The system's ability to enhance ordering convenience was, however, clearly decreasing. AHSC had accordingly evaluated other areas of hospital software and hardware, looking for ways to bundle its products with services that would create an incentive to order from the company. The American Data Services division, which reported to Corporate Marketing, distributed materials management software and consulting services. The American Annson Company, acquired in 1983, sold practice-management software for physicians' offices; the package included inventory management but not

ordering. AHSC also offered ADMIS, a microcomputer software package used in operating rooms and radiology departments to identify and monitor the supplies, labor, and time that go into a service or procedure, and STRAPCOE, a hospital admissions forecasting and analysis software package.

The Changing Market

As it looked to the future, AHSC saw potentially large changes coming in the ordering and use of supplies. Hospitals were banding together into chains and voluntary buying groups, increasing their leverage and sophistication. Alternate care sites such as physicians' offices, surgical and emergency centers, and nursing homes kept much smaller inventories than did hospitals and tended to stock relatively low-cost items. In the home care market, where AHSC faced at least 8,000 suppliers of durable medical equipment, ordering could be done by health care providers or by patients themselves. None of these alternate sites faced a materials management problem as extensive as that of the hospitals, and thus they probably could not make effective use of the more sophisticated versions of ASAP. Alternate sites had provided only $200 million of AHSC's 1984 sales, including $60 million from the $2 billion physicians' office market. (The typical physician in private practice spent about $9,200 on medical supplies and $5,100 on medical equipment in 1984.) The key seemed to be a coordinated approach leveraging American Hospital Supply's skills in technology, distribution, and information systems.

Exhibit 1 Financial Comparison, 1974–1984 ($ and shares in millions except per share amounts)

	1984	1983	1982	1981	1980[a]	1979	1978	1977	1976	1975	1974
Operating statistics for containing operations											
Net sales	$3,448.5	$3,310.5	$2,965.8	$2,660.0	$2,261.9	$1,928.1	$1,619.5	$1,364.4	$1,238.2	$1,065.3	$915.3
Earnings from continuing operations	$237.8	$211.9	$170.0	$133.5	$117.1	$100.0	$81.3	$70.1	$58.5	$50.2	$42.4
Increase over previous year											
Net sales	4.2%	11.6%	11.5%	17.6%	17.3%	19.1%	18.7%	10.2%	16.2%	16.4%	18.7%
Earnings	12.2%	24.6%	27.4%	14.0%	17.1%	22.9%	16.1%	19.9%	16.4%	18.5%	12.4%
Ratios to net sales											
Gross profit	33.4%	34.6%	34.3%	33.5%	33.1%	33.0%	33.0%	34.1%	33.5%	33.6%	33.9%
Operating expenses	24.8%	24.8%	25.1%	25.1%	25.0%	24.7%	24.3%	24.7%	24.7%	25.1%	24.8%
Operating earnings	8.6%	9.8%	9.2%	8.4%	8.1%	8.3%	8.7%	9.4%	8.8%	8.5%	9.1%
Earnings	6.9%	6.4%	5.7%	5.0%	5.2%	5.2%	5.0%	5.1%	4.7%	4.7%	4.6%
Effective income tax rate	14.7%	30.9%	31.0%	33.9%	35.2%	29.5%	36.4%	41.6%	44.1%	42.5%	45.4%
Investments in continuing operations											
Capital expenditures	$141.2	$129.4	$125.3	$123.3	$104.7	$63.2	$66.8	$63.7	$37.2	$41.4	$53.4
Research and development	$90.0	$81.2	$57.3	$49.6	$39.2	$34.8	$30.5	$23.1	$17.5	$12.2	$10.6
Asset statistics for continuing operations											
Accounts receivable days	56	54	53	55	58	60	61	59	60	62	64
Inventory days	111	108	103	105	108	111	114	116	112	108	117
Net sales per $ of average net working assets	$2.18	$2.35	$2.46	$2.51	$2.38	$2.22	$2.16	$2.12	$2.13	$2.05	$2.09
Capital structure statistics											
Long-term debt	$169.0	$135.4	$164.0	$195.4	$200.3	$247.4	$226.6	$220.4	$93.9	$92.7	$94.3
Total debt	$399.9	$327.5	$303.2	$297.9	$232.6	$276.5	$294.0	$246.9	$153.2	$128.2	$109.0
Total debt as a % of total capital	21.1%	19.0%	20.4%	22.5%	20.1%	26.9%	30.7%	29.3%	22.3%	21.1%	20.1%
Shareholders' investment	$1,497.3	$1,396.8	$1,185.5	$1,026.0	$927.0	$752.8	$663.9	$595.2	$534.4	$480.3	$432.6
Total capital	$1,897.2	$1,724.3	$1,488.7	$1,323.9	$1,159.6	$1,029.3	$957.9	$842.1	$687.6	$608.5	$541.6
Total assets	$2,461.4	$2,280.0	$2,018.4	$1,770.2	$1,551.1	$1,348.6	$1,230.7	$1,077.2	$884.9	$763.1	$676.8
Return on average shareholders' investment	16.4%	16.3%	15.8%[c]	15.0%	14.6%	14.6%	13.5%	12.9%	12.0%	12.2%	11.9%
Return on net working assets[b]	15.2%	15.2%	14.5%[c]	13.2%	13.0%	12.8%	11.8%	11.8%	10.8%	10.4%	10.6%
Common share statistics											
Earnings per share from continuing operations	$3.23	$2.86	$2.36	$1.87	$1.66	$1.47	$1.23	$1.06	$0.89	$0.77	$0.66
Increase over previous year	12.9%	21.2%	26.2%	12.7%	12.9%	19.5%	16.0%	19.1%	15.6%	16.7%	11.9%
Dividends per share	$1.09	$0.96	$0.81	$0.69	$0.59	$0.51	$0.43	$0.35	$0.26	$0.21	$0.20
Increase over previous year	13.5%	18.5%	17.4%	16.9%	15.7%	18.6%	22.9%	34.6%	23.8%	5.0%	5.3%
Average number of common shares outstanding and equivalents	73.6	74.2	72.1	71.3	70.8	69.2	67.9	67.9	67.9	67.8	64.2
Other statistics											
Number of employees at year-end	31,300	33,600	32,800	30,100	27,600	26,900	25,300	23,600	22,400	21,200	19,800
Number of shareholders at year-end	33,800	34,600	34,500	33,500	34,700	35,600	38,000	39,800	38,800	41,800	43,100

[a] In 1980, AHSC changed to the last-in, first-out method of determining cost for substantially all U.S. inventories.

[b] An internal measurement that is substantially equivalent to the return on total capital.

[c] Excludes gains on sale of operations discontinued in 1982 and early retirement of debt.

Exhibit 1 (continued)
Statement of Earnings for AHSC and Subsidiaries ($ in millions except per share amounts)

	1984	1983	1982
Net sales	$3,448.5	$3,310.5	$2,965.8
Cost of products sold	2,296.2	2,166.5	1,948.7
Gross profit	1,152.3	1,144.0	1,017.1
Selling, distribution, and administrative expenses	855.7	820.7	743.5
Operating earnings	296.6	323.3	273.6
Other income	13.8	24.5	12.9
Interest expense	(31.6)	(41.2)	(40.3)
Earnings before income taxes	278.8	306.6	246.2
Income taxes	41.0	94.7	76.2
Earnings from continuing operations	237.8	211.9	170.0
Operations discontinued in 1982			34.0
Gain on early retirement of debt			25.5
Net earnings	$237.8	$211.9	$229.5
Earnings per share			
Continuing operations	$3.23	$2.86	$2.36
Discontinued operations			.47
Gain on early retirement of debt			.35
Net earnings per share	$3.23	$2.86	$3.18

Note: Years ended December 31.

Exhibit 1 (continued)
Balance Sheet for AHSC and Subsidiaries ($ millions)

	1984	1983
Current assets		
Cash	$28.9	$16.9
Marketable securities, at cost (approximates market)	259.7	232.6
Receivables, less allowances—$12.4 (1984); $10.6 (1983)	522.0	513.3
Inventories	586.2	544.4
Prepaid expenses	89.0	52.7
Total current assets	$1,485.8	$1,359.9
Other assets		
Investments in affiliates and unconsolidated subsidiary	$126.0	$18.8
Long-term receivables	17.1	29.3
Investments in securities, at cost	21.1	22.0
Miscellaneous	15.4	12.8
Total other assets	$179.6	$82.9
Property, plant and equipment, at cost		
Land	$43.2	$54.9
Buildings	427.7	413.7
Machinery and equipment	507.5	465.5
Furniture and fixtures	87.3	85.4
Total property, plant and equipment	1,065.7	1,019.5
Less accumulated depreciation	349.6	300.6
Net property, plant and equipment	716.1	718.9
Intangibles, less amortization—$14.7 (1984); $16.7 (1983)	79.9	118.3
Total assets	$2,461.4	$2,280.0
Current liabilities		
Notes payable to banks	$7.5	$10.0
Commercial paper	218.3	156.6
Current maturities on long-term obligations	5.1	25.5
Accounts payable	345.9	340.7
Commissions, salaries, and withholdings	74.8	72.3
Retirement and other benefit plans	16.5	19.1
Taxes other than federal income taxes	16.6	21.9
Federal income taxes	20.5	27.2
Total current liabilities	$705.2	$673.3
	169.0	135.4
Long-term obligations, less current maturities	89.9	74.5
Deferred income taxes		
Shareholders' investment		
Common stock	$271.7	$320.0
Earnings reinvested in the business	1,254.1	1,095.9
Foreign currency translation adjustment	(28.5)	(19.1)
Total shareholders' investment	1,497.3	1,396.8
Total liabilities and shareholders' investment	$2,461.4	$2,280.0

Note: Years ended December 31

Exhibit 1 (continued)
Market Segment Information ($ millions)

	1984	1983	1982
Net sales			
Hospital	$2,862.8	$2,717.6	$2,444.2
Medical	625.4	627.9	552.9
Intersegment transactions	(39.7)	(35.0)	(31.3)
Total	$3,448.5	$3,310.5	$2,965.8
Operating earnings			
Hospital	$269.2	$296.4	$258.1
Medical	76.4	74.7	60.1
Intersegment transactions, unallocated interest, corporate overhead & other	(66.8)	(64.5)	(72.0)
Earnings before income taxes	$278.8	$306.6	$246.2
Identifiable assets			
Hospital	$1,495.0	$1,505.3	$1,334.3
Medical	651.4	536.3	471.3
Corporate and other	315.0	238.4	212.8
Total	$2,461.4	$2,280.0	$2,018.4
Capital expenditures			
Hospital	$83.0	$84.2	$89.5
Medical	41.7	27.2	20.0
Corporate and other	16.5	18.0	15.8
Total	$141.2	$129.4	$125.3
Depreciation and amortization			
Hospital	$55.5	$52.8	$35.4
Medical	21.3	15.2	11.8
Corporate and other	10.4	8.0	6.0
Total	$87.2	$76.0	$53.2

Exhibit 2 AHSC's ASAP System

ASAP® 1

Fast, Easy Order Communication

Keeps Control at Your Fingertips

Today's environment calls for utilizing all your resources to their full capacity. With ASAP 1, you can apply systems technology to automate the order entry process. You gain increased productivity and ensure prompt order processing. Choose Touch-Tone order entry for the convenience of ordering from any location in your facility. Or, you may prefer the portability, accuracy and speed inherent in bar code order entry. Whichever method you choose, you'll receive a monthly management report of all your purchases.

Bar code order entry using SCAN gives you:

- **Flexibility**—Bar code information is available in label or catalog form. You also can manually enter items using the AHSC catalog number, ASAP number, manufacturers' number or another distributor's number (S/P division only). The SCAN unit works with both UPC and Code 39 bar codes.
- **Time Savings**—Rapid order entry and order communication reduce ordering time. Bar code scanning is quick—a 50-line order can be sent in only ten seconds.
- **Increased Accuracy**—Bar code scanning reduces ordering errors significantly.

Touch-Tone order entry turns any Touch-Tone phone into a rapid order communication device. You'll find this system:

- **Easy to Use**—A computer-synthesized voice is available to prompt you through your order.
- **Timely**—7-digit ASAP numbers and "menu" order messages keep entry time to a minimum.

Printback Confirmation Option

By using the printback option available with ASAP 2, you can receive hard copy documentation to confirm price and availability of your SCAN or Touch-Tone orders.

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Exhibit 2 (continued)

ASAP® 2

Order Confirmation Available within Minutes...

Provides Data You Need to Reduce Stockouts

ASAP 2 enables you to access our interactive software which prompts you through the order process and provides on-line editing. Whether you place your order by Touch-Tone, SCAN, teleprinter or microcomputer, you can receive a "printback" document that confirms shipping and pricing information. ASAP 2 provides:

- **Flexibility**—Orders can be placed 24 hours a day, using AHSC catalog numbers, ASAP numbers, manufacturers' numbers or another distributor's number (S/P division only). "Teach" and "Help" modes can assist your efforts.
- **Manageability**—Your internal item number can be passed through to your order confirmation, AHSC packing slip, invoice and usage report for your internal record keeping.
- **Ease of Use**—If you are interrupted during order placement, the recovery feature allows you to simply pick up right where you left off.
- **Personalization**—Item and order messages can be included on your orders for your internal use in product disbursement and for accounting purposes. Additionally, you can generate your own master list of all items you have ordered for use as an internal catalog or traveling requisition.
- **Accountability**—Provides you with a monthly management report of your purchases.

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Exhibit 2 (continued)

ASAP® 3

Custom Care™ Software

Designed to Meet Your Specific Needs

ASAP 3 is tailored to each customer's needs and gives you unmatched software capabilities. We develop a customized data base according to your unique specifications. This enables you to order by your own internal item number. Additionally, your order confirmation can be tailored using customized formatting to fit into your purchasing/replenishment cycle. The capabilities of ASAP 3 are numerous:

- **Increased Productivity**—Reduced ordering time, streamlined paperwork and greater inventory control are all benefits of ASAP 3.
- **Time Savings**—Custom order files allow you to retain your specific data on each product (stock location, department names, charge codes, etc.). This eliminates the need to re-enter this information every time you order.
- **Versatility**—Customized product files can be developed around your specific departmental needs or you can use a master file that encompasses all your requirements.
- **Manageability**—Requisition lists can be developed and generated from your customized file upon demand. This eliminates the need for cards, photocopied or handwritten lists.
- **Customization**—Your order confirmation can be designed to meet your individual needs. For example, you may choose to sort your document by department, stock location or charge codes, integrating this document into your purchasing system.

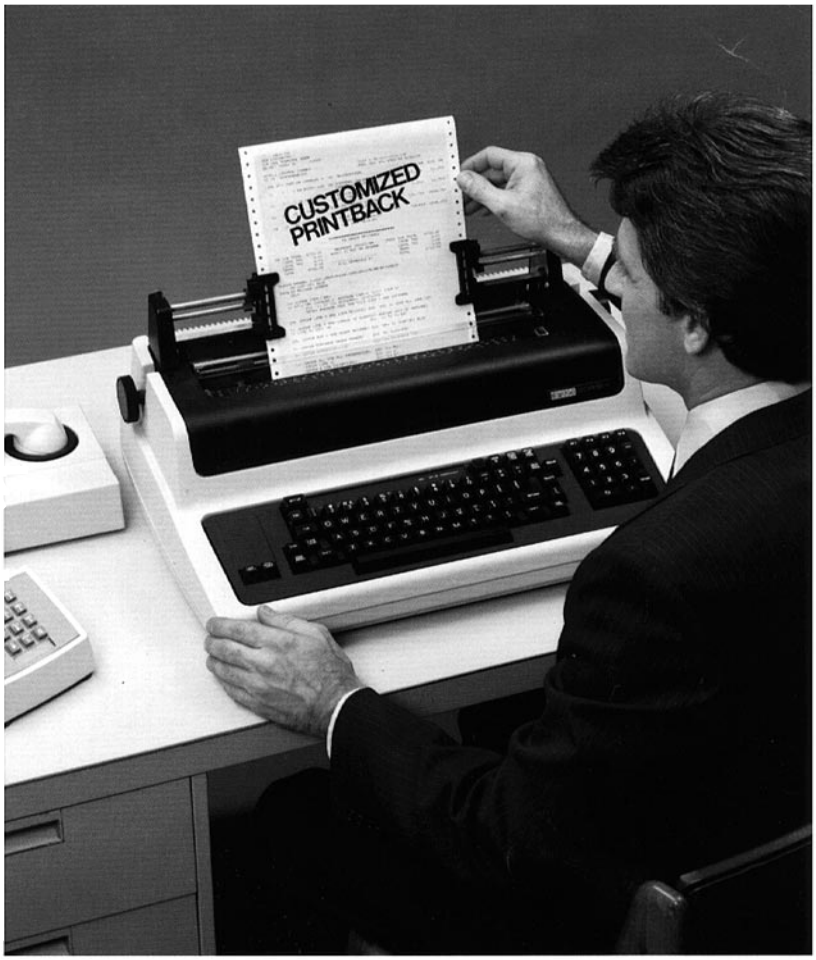

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Exhibit 2 (continued)

ASAP® 4

The Ultimate in Paperless Purchasing

Now Your Computer Can Talk Directly with Ours

ASAP 4 offers you the ability to fully automate the purchasing cycle except for one step—your actual approval. Here's how it works. Your mini or mainframe computer provides a recommended purchase order generated on the basis of stored information. Once you've reviewed and approved it, your computer can automatically communicate your needs to our mainframe. We'll return data to you in a flexible format to update your internal informational systems.

Computer-to-computer interface:

- **Provides "missing link" in the transaction process**—The automation you're utilizing internally now can be extended to include order communication and confirmation activities.
- **Maximizes your internal system**—This is accomplished through immediate routing of information from our computer to any location served by your internal system, such as purchasing, receiving, accounting and end user departments.
- **Allows easier access to decision-making information**—The data we communicate can be used in your internal system to keep you up-to-date on issues such as open order status.
- **Simplifies the monitoring of conformance with your purchasing policies**—Whether you're interested in a particular department or an entire facility, ASAP 4 makes your task easier.
- **Eliminates time-consuming duplicate entry**—Now there's no need to re-key order status information into your system as this occurs automatically.

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Exhibit 3 AHSC Organizational Chart