Market Analysis
Program (MAP)

Industry Sector Markets 1989-1994

Utilities

Forecast Update

INPUT®

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INDUSTRY SECTOR MARKETS 1989-1994

UTILITIES

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Utilities Sector

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Introduction

A

Purpose

The purpose of this Forecast Update is to provide the 1989 INPUT forecasts for the utilities market, together with commentary on recent market and competitive issues. This update should be used in conjunction with the vertical industry report issued in April 1989. Forecasts contained in this Forecast Update are reconciled to those in that report.

INPUT analyzes utilities as a vertical market including the electric, gas, and water/sewage/waste disposal segments. Electric utilities include investor-owned, cooperatives, municipality-owned, federal-owned, and state projects/power districts. Gas utilities consist of transmission, distribution, and local companies. Water/sewage/waste disposal utilities include public or muncipally-owned, privately-owned, and sewage/waste disposal companies.

B

Changes in Environment and Market

Increasing competition and deregulation continue to take their toll on the utilities sector—the utilities must strive to operate more like commercial businesses, with profit and loss responsibility, competition, mergers, takeovers, and stockholders to worry about. In the effort to remain competitive and stay in business, information systems and automation are the primary means of "operating smarter" and contribute to the long-term strategic goals of the utility. A recent study indicated that over the next two years, half of the nuclear plants in operation will need replacement systems, enhancements, and new systems to improve financial and technical performance.

The effects of increased competitiveness among the utility companies and pressure to remain profitable can be seen in the decrease in the number of investor-owned utility companies—from approximately 205 to 200—as reported by Edison Electric Institute.

Grid/distribution control of the pipelines that distribute water, natural gas, and electrical power are strategic areas where the utilities are concentrating efficiency efforts. If the utilities can draw resources from lower to higher demand areas, they can level the peaks and valleys in their overall load pattern and deliver the required electrical power or water with minimal investment in new production capacity.

Other strategic systems that contribute to the efficiency of the utility companies include customer service and billing systems that provide efficient, effective information data bases to handle customer calls. When the utility company falls under the state or local regulatory agencies, public opinion becomes very important to the future of the utility.

The regulation/deregulation of the utility industry by the federal government continues to impact the way the utilities do business and creates constant pressure to contain costs and operate efficiently. The deregulation of the industry opened the door to competition for the consumer's business. At the same time, the government announced that utility companies must buy back power from cogenerators at competitive prices. Now the Federal Energy Regulatory Commission (FERC) is requiring in specific cases that the utility companies must open their transmission lines to use by other neighboring companies.

Federal government regulation of the utility industry continues to be a major reason for new information systems. These information systems include regulatory systems within the utility to control operations and reporting systems to prove compliance with the government regulations.

The high cost of drilling new wells and building new power plants continues to have its effects on the utility providers as they try to use current resources more effectively. Mergers and working relationships with other resource providers continue to be one way in which the utilities can maximize resources and postpone the need for expansion.

Even with the similarities among utility companies in the types of information and control systems required, many companies are finding that there is still a great deal of customization required for the systems to work at maximum efficiency. As each nuclear plant has a custom-designed facility, the information and control systems must be designed to fit the plant design.

C

Events in the Industry

The proposed merger of Pacificorp (formerly Pacific Power & Light Co.) and Utah Power & Light brought about conditions from the Federal Energy Regulatory Commission that will affect the further thrust for operating efficiencies and competitiveness. The benefits of the merger outweighed the restricting conditions placed on Pacificorp by the FERC. It was because of these benefits that Pacificorp was willing to accept the conditions of open access transmission systems. Open access forces the utility to open its transmission lines to outside producers, exposing it to competition from its customers. This precedent puts the utility companies in the position of competing for customers at rates that may not be compensatory over their own transmission lines.

Utility companies are also making more investments in customer services that will contribute to reducing future power requirements and obtaining operating efficiencies. Low-cost loans and rebates for resource-efficient heat pumps and thermal storage devices are heading the list of increased customer services. These devices reduce the future demand for power and thus postpone additional power plants required to fill the demand. This demand-side management increases customer loyalty and reduces the future demand for resources that may be used inefficiently by the consumer. The new technologies that the utility companies are promoting include the use of heat pumps, after-hours storage (thermal storage), computerized supermarket refrigerators, commercial lighting, low-emissivity windows, and energy-efficient factory machines.

The use of networks has always been an important part of the information gathering/processing process for utilities. Early in 1989, the Electric Power Research Institute announced that it was working with Andersen Consulting to develop a standard set of communications protocols for the utilities industry based on the international OSI standard. The communications model, Utility Communications Architecture (UCA), would be designed to allow electric utilities to connect dissimilar networks. EPRI cannot mandate the use of a standard among member companies or in the industry, but may act in an advisory and promotional role.

II

Market Forecast

A

Utilities Market User Expenditures, 1989-1994

The utilities industry will continue to use information services to support the strategic direction of providing resources in a competitive, cost-efficient manner. Appendix A presents the user expenditure forecast by delivery mode, 1989-1994 for the utilities sector.

INPUT estimates that utilities sector user expenditures will reach $2.5 billion in 1994, growing at a compound annual growth rate (CAGR) of 17% from $1.1 billion in 1989.

The systems integration delivery mode will grow at the highest average annual rate of 29%, from $220 million in 1989 to $785 million in 1994. This reflects the requirement of the utilities sector to bring together all of the automated processes and information systems into one integrated system.

Network/electronic information services will grow at a compound annual rate of 21%, from $85 million in 1989 to $217 in 1994. Services will include the use of data bases of regulatory and scientific information to base plans for new power plants and for capacity planning purposes. Utility pools are also forming to plan and monitor resource information.

Application software will continue to be important as many of the smaller utilities rely on packaged solutions. The workstation/PC segment will have the highest annual growth rate of 19% in the application software products delivery mode.

B

Reconciliation with 1988-1993

Included in Appendix A is a detailed reconciliation of the 1988-1993 forecast as completed in 1988 and then as seen in 1989. INPUT's view of the utilities market was on track for 1988, but some adjustments have been made in the five-year forecast to keep in tune with current trends in the market.

III

Competitive Developments

A

Major Announcements

In early 1989, IBM set up a consortium of professional services/software vendors and nuclear utilities to investigate industrywide standard systems for nuclear power plants. The integrated systems would accommodate the broad range of applications required by nuclear plants to operate efficiently.

Other vendor members of the consortium include Applied Axiomatics Inc., (NY) a computer-aided software engineering tool vendor/consultant, and NUS Corp., a toxic waste engineering consultancy subsidiary of Halliburton Co., Dallas.

The National Payments Network, Inc. announced a network that allows customers to pay utility bills at retail outlets, speeding the payments to the utility companies and providing an additional service for customers. This has proved to be an added efficiency for the utility companies—they receive the payments sooner, and it eliminates the need for collection offices to receive the payments. Customer accounts are updated faster and the system appears to be more accurate than the mail-based collection system.

B

Vendor Profiles

Advanced Technology, Inc.
EI International, Inc.

ADVANCED TECHNOLOGY, INC.
12005 Sunrise Valley Drive
Reston, VA 22091
(703) 620-8000

W. Scott Thompson, President and CEO
Subsidiary of Black & Decker
Total Employees: 2,400
Total Revenue, Fiscal Year End
12/31/88: $172,000,000

The Company

Advanced Technology, Inc. (ATI), founded in June 1976, provides professional services, systems integration services, and software support to federal government entities as well as commercial clients.

ATI was acquired by Emhart Corporation on December 31, 1988, for approximately $140 million. Black & Decker then acquired Emhart Corporation in early 1989.

- Emhart is a large multinational corporation with approximately $2.8 billion in revenue for 1988. Emhart operates in three main business sectors as follows: Industrial Products, Consumer Products, and Information and Electronic Systems.

  - Emhart's Information and Electronic Systems sector included ATI and Planning Research Corporation.

ATI's total 1988 revenue reached $172 million, a 12% increase over 1987 revenue of $153 million. A five-year revenue summary follows:

ADVANCED TECHNOLOGY, INC.
FIVE-YEAR REVENUE SUMMARY
($ millions)

	FISCAL YEAR				
ITEM	12/88(a)	5/87	5/86	5/85	5/84
Revenue	$172.0	$153.4	$138.9	$109.2	$82.0
• Percent increase from previous year	12%	10%	27%	33%	40%

(a) Following the merger with Emhart Corporation, in December of 1987, ATI's fiscal year end changed from May to December.

ATI's key competitors include EDS, CSC, and BDM.

Key Products and Services

ATI designs, develops, implements, integrates, and maintains information systems primarily for Department of Defense (DOD) applications.

ATI is currently organized into two groups, each with five divisions or business areas as follows:

- The Applied Management Group performs the majority of ATI's Navy work in the areas of research, engineering, acquisition, and life-cycle support. The group also designs, develops, and integrates large-scale information systems for defense and civil agencies.
  - The Engineering Management Division handles acquisition management and ordnance engineering.
  - The Logistics Engineering Division handles ship logistics and computer-aided logistics design.
  - The Engineered Systems Division handles propulsion engineering and manpower resource management.
  - The Virginia Beach Division handles tactical and non-tactical software.
  - The Information Technology Division handles large scale systems integration and data base systems development.
- Some representative projects from ATI's Applied Management Group include the following:

- Designing the core systems for the Defense Logistics Agency and a total personnel data base for the U.S. Army.

- ATI recently won a contract from the Army to develop the Total Army Personnel System (TAPSYS). The contract is worth $60 million over five years.

- Developing a long-range plan and detailed design of applications for the Health Care Finance Administration.

• The Engineering Technology Group supports every branch of the military and NASA, primarily in aerospace, C^3I, and training and evaluation programs.

  - The Warfare Systems Division handles C^3I systems, combat systems, and combat support systems.

  - The Combat Systems Division handles combat systems.

  - The Space Systems Division handles aerospace systems.

  - The Submarine Technology & Sciences Division handles submarine systems.

  - The Applied Sciences Division handles C^3I systems, aviation systems, and land warfare systems.

• Some representative projects from ATI's Engineering Technology Group include the following:

  - Technical support for major systems acquisition for the Army's Operational Test and Evaluation Agency.

  - Logistics engineering support to the Seawolf class program, fast-attack submarine.

ATI also operates Advanced Technology Engineering Systems, Inc. (ATESI), a subsidiary that provides professional services to the commercial sector.

ATESI supports primarily the nuclear utility industry in information systems, systems engineering, training and maintenance programs development, and implementation.

• Some representative projects from ATESI include the following:

- Developing and implementing an automated contribution and benefit system to manage retirement funds for approximately 275,000 members of the Brotherhood of Electrical Workers and the National Electrical Contractors Association.

- Developing training procedures to implement modifications to the Savannah River Plant's operating nuclear reactors.

Industry Markets

Approximately 80% of ATI's revenue is derived from DOD applications, principally the U.S. Navy. The remaining 20% of revenue is derived primarily from the utilities industry, primarily nuclear facilities.

Geographic Markets

One hundred percent of ATI's revenue is derived from the U.S.

ATI operates 40 offices throughout the U.S.

EI INTERNATIONAL, INC.
One Energy Drive
P.O. Box 50736
Idaho Falls, ID 83405
(208) 529-3809

William E. Mapes, Chairman and President
Private Company
Total Employees: 220
Total Revenue, Fiscal Year End
9/30/89: $20,000,000

The Company

EI International, Inc. (EI), founded in 1972, is a high-technology engineering and consulting firm providing custom and application software, distributed and turnkey computer systems, and engineering and consulting services to nuclear and fossil utilities, and the manufacturing, petrochemical, and government sectors.

Key Products and Services

In fiscal 1988 EI derived approximately 70% of its revenue from consulting services. The remaining 30% of revenue was derived from application software products.

EI provides consulting services primarily in the area of productivity management and measurement, and maintenance monitoring and management for nuclear and fossil utilities. EI's services are also marketed to manufacturing and petrochemical firms.

In addition to its consulting services EI offers application software and turnkey systems for maintenance management and performance measurement. EI's software products include the following:

- MPro is a maintenance management system that runs on IBM 30XX and 43XX compatible mainframes. The system costs approximately $150,000 or leases for approximately $10,000 per month.
- IMPACT is an interactive spare parts inventory system that runs on Data General ECLIPSE and compatible processors. The system sells for $95,000 or leases for $8,000 per month.
- Betterment Engineering Thermal-Hydraulic Software Package (BETH) is an engineering workstation for electric power plant performance engineers. The system runs on IBM and Prime microcomputers, and costs $395.

- FAST/FASTAR is a fuel record system used by nuclear power plant engineers, and complies with NRC requirements. The system runs on Data General ECLIPSE, MV8000, or compatible processors. The system sells for $160,000 or may be leased for $13,500 per month.

- PMAX is a power plant performance monitoring system using heat balances and modular analyses to determine system and component performance. The system runs on DEC hardware, and sells for $98,000 or leases for $3,600 per month.

Geographic Markets

EI markets its products and services in the following geographic markets: Idaho Falls (ID), Seattle (WA), Phoenix (AZ), San Jose (CA), Columbia (MA), Grand Junction (CO), Atlanta (GA), Israel, Korea, Italy, Taiwan, Spain, and the Philippines.

Industry Markets

The majority of EI's revenue is derived from the nuclear and fossil utilities industry. EI also serves manufacturing, petrochemical, and process industries, and government.

UT-A

Appendix: Data Base

A

Data Base

The INPUT data base presents user expenditures for information services in the utilities sector by delivery mode and submode. These expenditures are shown for the U.S. in current dollars (i.e., expenditures include inflation).

B

Reconciliation

INPUT sees a stronger demand for turnkey systems than previously expected over the next five years. The overall CAGR will remain the same (10%), but with a shift in the year-to-year forecast, resulting in an increase of $6 million for 1994.

There also appears to be a stronger demand for processing and network/electronic information services than first expected, as small to midsize utilities take advantage of invoice/payment processing and information data bases.

The shift away from application software products will reappear in the areas of professional services and turnkey systems, as more utilities find that more of a customized solution will fit their overall requirements better than a packaged application.

EXHIBIT A-1

Utilities Sector User Expenditure Forecast by Delivery Mode, 1989-1994
($ Millions)

Sector by Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Utilities Sector	955	16	1,112	1,292	1,521	1,779	2,101	2,484	17
Processing Services	90	11	100	110	121	134	149	165	11
- Transaction Processing Services	60	10	66	71	77	83	90	97	8
- Systems Operations	30	12	34	39	44	51	59	68	15
Network/Electronic Information Services	70	21	85	102	123	149	180	217	21
- Electronic Information Services	40	20	48	57	67	79	93	110	18
- Network Applications	30	22	37	45	56	70	87	107	24
Application Software Products	180	21	218	249	284	324	371	426	14
- Mainframe	40	14	46	49	53	57	62	67	8
- Minicomputer	60	13	68	75	82	90	99	109	10
- Workstation/PC	80	31	105	125	148	177	210	250	19
Turnkey Systems	35	10	40	42	47	50	56	60	10
Systems Integration	170	30	220	280	370	470	610	785	29
Professional Services	410	10	451	510	576	651	735	831	13

EXHIBIT A-2

Utilities Sector Data Base Reconciliation
($ Millions)

Industry Sector	1988 Market			1993 Market			88-93 CAGR per data 88 Rpt. (%)	88-93 CAGR per data 89 Rpt. (%)
	1988 Report (Forecast) ($M)	1989 Report (Actual) ($M)	Variance as % of 1988 Report	1988 Report (Forecast) ($M)	1989 Report (Forecast) ($M)	Variance as % of 1988 Report		
Total Utilities Sector	955	955	-	2,150	2,100	(2)	18	17
Processing Services	90	90	-	140	149	6	11	11
Network/Electronic	70	70	-	170	180	6	21	21
Information Services								
Application Software Products	180	180	-	410	371	(10)	18	16
- Mainframe	40	40	-	70	62	(11)	10	9
- Minicomputer	60	60	-	100	99	(1)	11	11
- Workstation/PC	80	80	-	240	210	(13)	26	21
Turnkey Systems	35	35	-	50	55	10	10	9
Systems Integration	170	170	-	690	610	(12)	32	29
Professional Services	410	410	-	690	735	7	11	12

About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

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