

ISRAEL HIGH-TECH & INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES

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From the Editor's Desk

Israel's regional and global trade challenges

Palestinians arriving at the starting line of autonomy may be less of an economic blessing than some individuals expect. Yes, over a million people will have the possibility of purchasing products from Israel or neighboring Arab countries. But these are very poor people, and Israel is a very high-tech place. Only as the Palestinians' standard of living rises will they become potential consumers of the relatively expensive consumer products produced here.

Which is not to say Israel will receive no benefits in the short term. In order to pave the way for autonomy, many infrastructure programs must be completed, such as the large-scale road development required to enable the Israel Defense Forces to redeploy around Gaza and Jericho. The building of electrical power stations, telecommunications networks and radio and television stations are other major projects. Even if the contractors are European or North American, they will probably take advantage of Israeli expertise and experience.

But what about now? Bank of Israel officials expect a third consecutive year of 5-6% economic growth in 1994. Where is this growth coming from?

Strong public consumption is only part of the answer; an abundance of cutting-edge ideas is the secret. Merchandise exports averaged nearly \$900 million a month in 1993, 95% in industrial goods. While 66% go to European and American customers, sales to Eastern Europe and Asia are growing rapidly, and represented nearly 15% of the total last year.

Where are Israelis creating opportunities for themselves? Mostly in technology-based activities aimed at large markets. These are not labor-intensive and do little to reduce unemployment, but create innovative products which are profitable and generate taxes. And as Israel's new or more efficient products enter foreign markets, it is only a matter of time before more giant multinationals see the wisdom of establishing Israeli subsidiaries. Among others they will be joining IBM, Boeing, McDonnell Douglas,

Intel, Microsoft, Vishay Intertechnologies, Kyocera, Toyo Ink, Nikken Sohousha, Ares Serono and ICC Handel, among scores of firms with subsidiaries or cooperative arrangements with local companies. Such international co-operation -- one of the expected fruits of peace -- would greatly accelerate sales. Yet Israeli companies with production lines and international marketing divisions are only the tip of the iceberg. For each development group we meet or write about there are hundreds with a staff of three -- an engineer, a scientist and one business person developing a product which aims to capture at least a \$200 million share of world markets.

At a recent conference of entrepreneurs, the president of one such micro-company presented a clever, innovative computer which recognizes and processes handwriting. He hoped he would be able to sell the product to a large international company, basing his optimism on a conviction that his product is well ahead of the field. But in the same audience two people revealed that they are working on the same product, and are only a little behind the leader. The flow of products in such fields as computers, pharmaceuticals, biotechnology and healthcare continues to be impressive. This past month we were updated on a cardiac output project, a cancer therapy development, a startup to create an artificial human immune response, and a miniaturized camera system to be worn on a physician's finger when probing the body.

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Technology-based exports are only one part of the country's industrial production, but represent proof of Israel's ability to compete with countries many times its size.

Advances in commercialization of solar energy

The use of solar energy has been promoted for more than 20 years. Many regions in the world lacking fossil fuel resources but having plenty of sunshine are looking to identify solar technologies capable of replacing their fuel imports at competitive cost. Millions of dollars have been spent on research and development.

The results have not lived up to expectations. The use of thermal energy is still infinitesimal when compared to other energy sources. Yet as reported by two leading American solar energy scientists at an international conference in Jerusalem, new technology may radically change established views. Details of a cost-effective breakthrough based on solar-dish technology were presented by W.B. Stine of California Polytechnic and J.J. Gallagher of the University of Chicago. Solar dish concentrators are similar in appearance to satellite dishes. However, they are made of mirror glass which concentrates sunlight and multiplies its power by a factor of 850. The heat is intense enough to turn the dish red and convert water to steam. Manufacturers in California and Indianapolis are reporting strong demand for these systems.

Israel's nearest equivalent is a system using polished metal. It is incorporated in a 350 megawatt plant operating in California. However, the system is not being mass produced.

"The International Conference on Solar Energy that we are hosting here in Jerusalem differs from other conferences in that tools and parameters for measuring the economic aspects of solar energy applications are being discussed. The object is to form a common language which researchers throughout the world can use," Professor Aharon Roi, of the Ben-Gurion University, and chairman of the conference's organizing committee, told the *Israel High Tech Report*.

The conference concentrated on Comparative Evaluations of Solar Power Technologies. Attending were scientists from Europe, North America, Russia, India, Thailand, Egypt and Hungary. The conference was sponsored by Israel's Ministry of Science and Technology.

Israel is a recognized leader in the development and use of solar energy for domestic purposes. More than a million solar collectors serve a high proportion of the population, providing institutions and home owners with hot water.

"Competitive development is growing as a result of the Energy Crisis of the 1980s. Vast amounts of research have been carried out, and at Ben-Gurion University we continue to seek ways of using our desert sun," says Professor Roi.

Two venture funds focus on healthcare

The number of healthcare projects in the formative, startup and just-before-the-market stage has grown considerably in recent years. Former academics are now running independent businesses, as researchers at the institutes of higher learning, especially at the Weizmann Institute of Science, the Hebrew University, and the Technion, collaborate with entrepreneurs and startups. For example, Professor Haim Aviv is CEO of Pharmos, Professor Avner Rotman heads Biodar, and Professor Max Herzberg heads Orgenics.

According to government sources and industry listings, more than 200 companies are active in producing and marketing a broad range of healthcare products, including medical equipment, pharmaceuticals, surgical supplies and biotechnology products. Since 1991 export shipments have exceeded \$300 million and has been growing annually by 15%.

Venture capitalists are having an easier time raising funds to invest in a mixed basket of healthcare projects. "There is \$250 million in real money waiting for suitable investments," says Mr. Zvi Vromen, a Tel Aviv patent attorney who specializes in innovative medical projects, and in forming pools of capital for startups.

A year ago the 56-year-old attorney became a partner at Reinhold Cohen and Partners, a firm of patent attorneys whose offices handle 35% of all the patent work in Israel. He manages REICO, a company which manages the partners' investments in healthcare. Mr. Vromen has American contacts with investment banking firms such as David Blech, as well as with important healthcare companies such as US Surgical.

The companies with which he is associated have had a mixed record, though one has been a major success. Neoprobe, reviewed in our Report, is a US company employing an Israeli researcher who recently assumed a key post at an Israeli hospital. It has developed a technique for *in situ* cancer pathology which has been tested in 25 centers. The company was presented to Israeli professionals and investors less than two years ago, when it offered a private placement. Since then, Neoprobe has become a public company (NASDAQ:NEOP) with a market capitalization of \$42 million.

Mr. Vromen seeks patentable technologies with a

prospect of substantial market share. He mentions a cancer therapy molecule, a new imaging system based on a miniature camera which fits on the finger of a diagnostician, an ultrasound catheter for "exploding" heart infarcts, and a cardiac output system to assist surgeons and catheterization specialists.

The above projects are channeled to Israeli companies which carry out the development work, arrange for production, seek the necessary financing and develop marketing strategy. They include names such as Xenograft, NVS, Titan, NIMedical, Peptor and Angiosonics.

SRD Shorashim, a moshav-based development company which has come up with a unique system for measuring the depth of anesthesia, has been placed in bankruptcy. Mr. Vromen and investors who were involved in the capital formation have lost their stakes. However, Mr. Vromen may seek to purchase the technology and attempt to resuscitate the project, the management of which had obtained a multi-million dollar order for its key product but ran into financial difficulties.

Investment in early stage high-tech companies can be immensely profitable but are risky. Early investors in InterPharm Laboratories, including the Weizmann Institute, made millions. Participation in a basket of healthcare investments can dilute the risk, and so Reinhold Cohen and Partners -- through REICO, together with investment bankers Singer & Barnea -- have formed the ASTRA Healthcare Fund with a starting capital of \$1.75 million. The fund now has \$6.75 million, and investors will shortly be allowed to participate.

Ehud Geller, Yuval Binur and Jonathan Fleming to manage Medica a new healthcare industry venture capital fund

Medica is a joint Israeli and American Limited partnership group in the process of raising \$20 million to invest in Israeli healthcare opportunities. Locally developed healthcare industry projects continue to get the attention of venture capital investors. A new group Medica US Limited Partnership/Medica (Israel) Limited Partnership is offering Limited Partnership Interest units to local and international investors. Managed by Dr. Ehud Geller who held executive positions with Teva and InterPharm, Dr. Yuval Binur, post graduate degree from Tel Aviv University and fifteen years of investment experience and American Jonathan Fleming, founding partner of MVP Ventures. The managers are aiming to capitalize the fund at a minimum of \$20 million. Besides their own investment they have applied for an \$8 million commitment from Yozma the government owned firm which invests in funds and as of this year

directly in specific investments. Yozma has stated that its commitment will become effective after Medica succeeds in raising its projected sums. Projects under consideration include Tuva: anti cancer therapeutics using gene therapy, P.S.S. Inform. Systems: used in healthcare management, Emulsitech: drug delivery systems, AngioSonics: the exploding of cardiac infarcts with ultrasound technology, Corosound: detection of coronary occlusion with cardiac sonography, Melanoptics: eye medication, Recogna: drugs for central nervous system diseases, Protaxi, fertility enhancement diagnostics and Fertech: laser for enhancing fertility.

Anglo American Ventures in first-round financing

Anglo American Ventures Ltd. (AAV), the venture capital fund, has invested in Ubique Ltd., a Rehovot-based start-up software firm. AAV led a \$1.5 million first round of financing for Ubique, equally split between AAV, Yozma Venture Capital and Euro-America, a venture capital fund active in the US and France.

Ubique was founded by Professor Ehud Shapiro of the Weizmann Institute of Science. A Weizmann group headed by Professor Shapiro designed the software which allows for a shared, virtual work environment commonly termed cyberspace. It offers users of networked computers advanced conferencing and collaborating capabilities. Ubique's target market consists of the millions of subscribers to Internet.

AAV is managed by Veritas Venture Capital Management, a firm owned and managed by Yadin Kaufmann and Gideon Tolkowsky.

A different type of Aladdin keeps the genie in the bottle

Aladdin Knowledge Systems Ltd. designs, develops, manufactures and markets a family of proprietary products that combine hardware and software to prevent unauthorized use of computer programs. The Software Publishers Association estimates that annual losses to software developers due to the unlawful use of computer programs (called software piracy) exceed \$10 billion worldwide. Aladdin's primary product, the HASP (Hardware Against Software Piracy), combines hardware and software to prevent unauthorized use of computer programs. The software component of the system is licensed to the software developer, enabling the developer to integrate procedures in the protected programs which check whether the HASP hardware component has received the appropriate code before those programs can be activated. The hardware component, known as a "key," is included with the developer's protected program when that program is sold to the end-user. Each key contains an application-specific integrated circuit which has a

unique electronic code assigned by Aladdin to each software developer, and must be matched with the protected software in order to activate the program. The key must be connected to the parallel or serial port of the end-user's computer before the program can be run.

The company has customers in over 50 countries, and clients include Magic Software Enterprises Ltd., Lattice Incorporated, Samsung Corporation, Hewlett Packard, Scan-Vec, Vibrant Graphics, SWIFT and Vector.

To date, over 5,000 software developers have incorporated HASP products into their software, purchasing more than 600,000 keys.

China follows the sun to Israel's Weizmann Institute

The People's Republic of China is looking to the Weizmann Institute of Science in tiny Israel to provide it with some of the knowhow it requires to develop advanced solar technology.

China's growing interest is spurred by the difficulties encountered in supplying its huge population with electricity, as well as by its mounting concern over pollution caused by fossil fuels.

The Chinese Academy of Sciences recently sent two researchers to Israel, Kou Qing and Yao Chengcai. Kou, 26, is from the Institute of Electrical Engineering in Beijing, an affiliate of the Chinese Academy and the country's foremost energy research facility. The IEE recently established the first of 10 solar power plants to be built in Tibet, a region poor in fossil fuels, where many villages are still without electricity.

Kou's interest is in the development of systems based on solar cells using sunlight at selected spectral bands. In a research project supervised by Prof. Amnon Yogev, Head of the Weizmann's Energy Research Center, he is trying to determine which part of the spectrum is most suitable.

Kou is also studying Hebrew, hoping to stay in Israel for his doctoral studies and thus become the first Chinese scientist with a PhD in solar energy.

Upon returning to China he intends to initiate collaboration between the Weizmann and the IEE, which accepts graduates from only the best Chinese universities.

Yao, 28, is a researcher and lecturer in solar engineering at the University of Science and Technology, a top Chinese institution in Hefei. Yao is participating in a research project headed by Michael Epstein, Director of the Institute's Solar Research Facilities Unit. The project aims to transform solar energy into storable and transportable chemical fuel for use hundreds of miles away.

Yao has an unusual background. The eldest son of a peasant family in a rural part of southern China, he was the only child they could afford to support

through high school; university at the time was free for children from indigent families receiving high marks on their entrance exams. He is now the pride of his whole village. Upon his return he intends to teach everything he learned at Weizmann's solar tower, and play a role in designing the first Chinese solar thermal power plant. He also hopes to help commercialize small solar energy systems to provide income for his university, as government support has been drastically cut in recent years.

Decline in basic research

"Theoretical scientific research has suffered in the past decade from a lack of funds. The future of scientific development in Israel depends on the importance given by the government to scientific activities, and its allocation of the resources required for expansion of the (scientific) infrastructure," state Dr. Zeev Rotem, executive director of the United States-Israel Binational Science Foundation. The BSF is a grant-awarding institution that promotes cooperation between scientists from the US and Israel. Since its founding, each country has allocated \$50 million to endow BSF, whose average annual capital income is between \$11-\$12 million. Since 1974, more than 2,300 research projects have been funded. The average annual award is \$30,000. Nearly \$12 million was allocated in grant payments in 1993.

General Manager of Tel Aviv Stock Exchange

Mr. Sam Bronfeld, General Manager of the TASE, reported that 1993 was a record year for capital formation. NS 10 billion (\$3.7 billion) was raised by 561 companies. In a lecture delivered at the Capital Markets symposium, he revealed a surprising bit of information: 70% of the companies on the TASE are in the hands of controlling owners.

Following changes in the holdings of such controlling shareholders thus becomes an additional technique for investors.

Geotek - where the shrewd money is going

Who is backing Geotek?

Well, billionaire George Soros for one. Soros has invested directly in the firm, which holds a license from Rafael, the research and development arm of the Israeli government, to commercialize its state-of-the-art mobile communications technology. Recently Geotek purchased rights to enter the Mexican mobile communications market. At the same time an American company identified with George Soros' management funds also invested. Evergreen Canada-Israel Investments Ltd. is another one of Geotek's large shareholders. It has raised more than \$12 million in private placements. Geotek is listed on NASDAQ.

(Cont'd on page 6)

The Capital Market

The bottom falls out of the bottom after a "correction" at the top

The Tel Aviv Stock Exchange had been rising sharply since September 1993, and in January was heading for all-time highs. Indeed it broke new ground at the end of the month, when the Mishtanim Index (the two-sided trading index of the 100 largest capitalization companies) reached the 256 level. It

had stood at 215 a year earlier.

Two steep one day drops of 5% had brought the index back to the 215 level on February 21.

A correction was expected, but when it came it

took some strange turns. There were repeated calls from well-known figures, including the chairman of the Tel Aviv Stock Exchange and from a think tank Economic Models, that share prices were "above their economic value." In Israel that term means inflated. At the end of the second week in February the Mishtanim Index had retreated by 8.3% since the beginning of the month, and it appeared that the anticipated correction had taken place. However, additional selling took place at the outset of the third week.

But the movement of that index did not tell the whole story. Price fallout was felt mostly by the small capitalization companies, whose shares fell by 21%. That end of the market had been the object of speculative activity, and there the drops were

unexpectedly sharp. Names like Pama Investments and Cohen Development were in the headlines. The shares of Pama, a relatively small investment company which in 1989-1991 experienced losses, and recorded a profit of only \$80,000 in 1992, fell by 64%. Until the descent, its shares had gained

50% since the start of the year. Cohen Development, in the four years before 1992, had accumulated losses of about NS 2.5 million. In a fortnight its shares fell by 56%. They had advanced by

55% since the beginning of the year.

If irate investors were looking for culprits, they found them in the form of two Russian immigrant "money managers" who allegedly manipulated the price of seven shares by submitting illegal buy and sell orders.

So the bottom has fallen out of the bottom.

How much healthier is the Tel Aviv Stock Exchange today? Professional opinions vary, but only slightly. Generally the attitude is positive. The correction has taken place and the continuing healthy economic factors combined with more attractive share prices are likely to bring in both short and longer term money. Greater selectivity is called for, say the professionals. Price fluctuations may remain somewhat violent in the near term, but no one is

An overdue correction takes place

	1/2/94	2/22/94
General Share Index	271.9	237.2
Mishtanim Index	249.1	227.1
Maof Index	246.3	227.9
Karam Index	322.5	263.7

Share Fund Yields

Category: Diversified and Flexible Share Funds

Investment Objective: Growth

Management Policy: Manager invests in equities with mix of investments adjusted to market conditions.

Funds in Category: 47

Top Five Performers

Fund	Manager	% gain
Ramco Flexible	Ramco	61.1
General Flexible	General	49.7
Panther	Central Trade	47.4
Psagot 100	Psagot	46.6
Yesodot	Moritz & Tuchler	39.2

Category: General, Variables and Maof

Investment Objective: Aggressive Growth

Management Policy: Manager invests in the 70 leading shares making up the TASE Share index or in the 25 leading shares which make up the Maof Index

Funds in Category: 47

Top Five Performers

Fund	Manager	% gain
Afikim Shares	Afikim	55.2
Epsilon Shares	Epsilon	38.5
Magic	Moritz & Tuchler	38.0
Analyst Shares	Analyst	37.1
Esh	Miri	36.4

willing to predict the end of the "bull" or peace market, though investors are looking back to 1993, when the General Share Market Index -- the measure of all shares -- was up by more than 50%. Our own thinking is that allowing for inflation, the market could yet register a real gain of 10-15% before the end of 1994. If that happens, few investors would have cause for complaint.

Identifying trends on the capital market

Changing trends on Israel's capital market were discussed recently during a symposium held at the Pinchas Sapir Center for Development at Tel Aviv University.

As of the end of 1993, Prof. Isaac Suary reported, the Tel Aviv Stock Exchange was capitalized at NS 146 billion -- approx. \$49 billion. As might be expected, the public's holdings stood at 30%, pension funds at 28% and mutual funds and other investment institutions 42%.

Share Fund Yields

Category: Specialized

Investment Objective: Aggressive Growth

Management Policy: Manager invests in specialized sectors as real estate, oil infrastructure etc.

Funds in Category: 55

Top Five Performers

Fund	Manager	% gain
Ahrayut Oil	Ahrayut	90.1
Zik	Unitrust	58.8
Raam 90	Mirit-Silberman	56.4
Mivneh	Fibi	47.7
Lahak Salit	Lahak	47.6

(percentages represent gain in value in U.S. dollar terms for 12 months ending January 31, 1994)

Database: Meytav Mutual Funds

(Cont'd from page 4)

Pharmos Pilocarpine formulation passes Phase II

Basing itself on Hebrew University research, Pharmos has been applying sub-micron emulsion technology to formulate new drugs. One of these is based on pilocarpine, the standard drug used in treating glaucoma. After two years in development, Pilocarpine-SME has successfully passed Phase II clinical trials. The drug is applied twice daily -- in contrast to four times daily for the older treatment -- and has fewer side effects, reports Pharmos. The slow-release feature and the efficacy of the formulation is expected to create a \$1 billion annual pilocarpine market.

The company's shares are registered on NASDAQ under the symbol PAR.

ECI Telecom the Flagship Company

Conclusions

The ability to identify niches early and fill the need is a major corporate strength, says Mr. Daniel Chertoff, a Furman-Selz securities analyst.

Mr. Chertoff had correctly projected a 30% growth in revenue for 1993 this year, and estimates a 38% sales growth in 1994. The reported profits for 1993 were \$52.7 million on sales of \$295 million., after deducting \$7 million to cover merger and other expenses.

As avid ECI Telecom followers for 17 years, our contacts with the company indicate that the positive predictions for growth and profits are justifiable. Based on predicted earnings per share of \$0.80 for 1993, when the shares earlier in 1994 were trading at \$25 they were generously priced at over 30 times earnings and carried according to Wall Street analysts, a reasonable multiple of its earnings.

The telecommunications industry is expanding dynamically and globally. Companies are working at an accelerating pace to supply cost-effective solutions for new communication requirements posed by the business world. The demand is multi-faceted: Advances in technology -- including communication of voice, data, facsimile and video transmissions -- have created a necessity for greater carrying capacity. As capacity grows, bottlenecks may develop. Business telephone communications between developed countries outnumber private calls by a ratio of 3:1. The competition for this trade is intense, and the rewards are great.

Eastern Europe, China and the former Soviet Union are seen as important emerging markets, with an urgent need for more telephones and capacity. To bring their telephone/population ratio to 1:2 (on a par with Italy but behind England, France and Germany) these areas would need almost 700 million additional telephones.

Western European governments are urging their national carriers to adopt new technologies in the face of competition from multinational companies that cross borders to acquire lucrative business.

While fiber-optic technology is providing solutions, most telephone lines are still connected to their networks by ordinary copper wires. Technologies allowing for the expansion of the message-carrying capability of these installations are in demand. ECI Telecom Ltd., aware of these problems for many years, won a market niche by creating circuit-multiplication systems that increase the capacity of existing telephone networks to carry

voice, data and facsimile transmissions. With a customer base covering more than 80 countries on five continents, the company has demonstrated the success of its market posture -- developing close ties with its customers, responding to their needs, and delivering a product ahead of competitors. In 1992, it established a manufacturing facility in Teltow, Germany, and expanded its other overseas plant, at Orlando, Florida.

Recent developments

The company maintained its traditional high level of growth in the first six months 1993 and reported record results. Sales for the first half of 1993 were \$99.3 million, up 33% from the 1992 first half. Net income rose by 38% to \$24.6 million, compared with \$17.9 million in the first half of 1992. Per-share earnings advanced to \$0.77 from \$0.57. In all of 1993 worldwide sales including those of Telematics International Inc. which merged with ECI Telecom in December 1993 were \$295.7 million. The reported net profit stood at \$52 million.

ECI Telecom is traded in the United States on the NASDAQ exchange under the symbol ECILF. ECI Telecom's sales have risen between 1988 and 1992 at an average yearly rate of 46%. Over that period, profits increased even faster. In 1993 sales advanced, at a lower rate, but were sharply higher by 30%.

	1993	1992	1991
Sales	\$295.7 mil.	\$160.5 mil.	\$113.9 mil.
Net Income	\$ 52.7 mil.	\$ 38.6 mil.	\$ 27.4 mil.

1993 was another outstanding year for us in all product areas, said David Rubner, ECI President and CEO. "Both *digital circuit multiplication* equipment and *access network products* set new sales records while sales from synchronous digital hierarchy products in their very first year of deliveries, exceeded \$30 million. The year saw the introduction of a number of new products, the penetration of new markets, our successful participation in a number of promising field trials and culminated in the completion of the merger with Telematics," added Mr. Rubner. In January the company announced that it had obtained its initial orders from India for use in modernizing that country's telephone network. Synchronous digital hierarchy is the standard for European telecommunications. The \$100 million a year market is ready to grow to \$1.0 billion by 1996, and ECI sales rose by 30 per cent in 1993. ECI is extremely well positioned in Germany, where its sales for multiplexers alone have exceeded \$70 million.

The ability to identify niches early and fill the need is a major corporate strength, says Mr. Daniel Chertoff, a Furman-Selz securities analyst.

Mr. Chertoff had projected a 30% growth in revenue for 1993 this year, and 38% in 1994.

In June 1993, the company announced that it was dividing its operations into two separate business units, each with overall responsibility for sales, marketing, development and engineering in a particular product category.

One unit is responsible for SDH (Synchronous Digital Hierarchy) and Access Products. SDH, known in North America as SONET, is the company's newest product area.

A separate unit is responsible for Digital Circuit Multiplication Equipment (DCME) and related products. DCME is the product line with which the company traditionally has been identified.

David Rubner, ECI Telecom President and Chief Executive Officer, said these strategic changes were aimed at accommodating the company's rapid rate of growth while preserving its excellent reputation for technological innovation and responsiveness to customers.

In August 1993, the company announced that it had obtained an order from the Deutsche Bundespost Telekom for \$60 million of its access multiplexers for the German telephone network. This is the largest order ever received by the company from a single customer. One multiplexer will support a combination of voice and ISDN circuits. The company is one of three suppliers to the DBT and has been chosen to supply 50% of the Telekom's requirement. The company began the supply of this order late in 1993 and will complete it in 1994. In December the company reported that it had completed the merger with Telematics. Telematics International manufactures a complete line of wide area networking products designed for voice and data communications applications and networking worldwide. At the end of January the company announced that it has been chosen by the Deutsche Bundespost Telekom to supply Asynchronous transfer access switching equipment to be employed in the DBP's prestigious Broadband-ISDN pilot project in Germany. The equipment will be supplied by Telematics.

Building on technology

ECI Telecom earned its standing by developing and marketing circuit-multiplication products based on its own core digital speech-processing and switching technologies.

The company in 1992 continued to supply Digital Circuit Multiplication Equipment (DCME) to 65% of the world market, which has grown to \$200 million. Another new market for the company's DCME

products opened in 1992 with the signing of agreements with three telecommunications authorities in China.

ECI Telecom's DTX line of DCME products increases the transmission capacity of digital satellite links, fiber-optic cables, digital microwave links and coaxial cables. It accomplishes this by transmitting during the silent periods in conversations (about 60% of the time) and by using a data-compression algorithm to compress the signal. With DTX equipment, a telecommunications provider can delay or entirely forego investment in new transmission infrastructure. The products multiply voice-transmission capacity by a ratio of 5:1 and fax capacity by 6:1. In 1992, ECI Telecom introduced an improved version of the DTX-240F; this new version multiplies high-speed (14,400-baud) fax transmissions as well as standard (9600-baud) faxes. In 1993, the company plans to introduce the DTX-360 (Phase 1), which will multiply voice capacity by 10:1.

Access Network products

ECI Telecom's Digiloop product line is designed to improve the only portion of the telephone network which has so far not seen any technological upgrading. While central offices and transmission systems have been converted to digital operation, tens of millions of subscriber loops remain as they were decades ago -- a twisted pair of copper wires carrying calls in analog form.

These copper wires represent a massive investment by telephone companies. The Digiloop line of Access Network products converts the copper pair into a digital "pipe" capable of carrying digital information at a rate of up to 2 Mbit per second.

In 1992, the company's sales of Access Network products rose to more than \$40 million, twice the previous year's level. It delivered in the past two years Digiloop products to significant customers such as GTE and Bell Atlantic in the United States and completed development of its ASLMX (Access Supply Line Multiplexer) system for delivery to Germany's Deutsche Bundespost Telekom.

ECI Telecom and the SDH market

The emerging SDH (Synchronous Digital Hierarchy) market is expected to reach \$7-10 billion before the end of the decade. The European sector of this market is expected to increase 10-fold to \$1 billion between 1992 and 1996. These projections have come in the aftermath of the adoption of the SDH standard for Europe by CCITT, the United Nations committee which sets international telecommunications standards.

The impact of SDH, and its North American counterpart, SONET, has been likened to the digital

revolution that occurred in the communications industry in the late 1970s. These new standards enable signals of various bandwidths -- voice, data, facsimile and video -- to be transmitted simultaneously across fiber-optic networks. This is accomplished with a standard signal format, and a high level of integration between various types of equipment.

Important economies will be thus enjoyed by fiber-optic networks. Not the least is the replacement of three stages of equipment by single-stage equipment and the elimination of various cabling and connecting devices. The new equipment enables the computerized establishment and modification of routes and rapid detection of faults in the network, by using a small number of centralized signals.

As a result of a development program that began four years ago, ECI Telecom was able to identify itself as a front-runner in the field by demonstrating an operational SDH closed-ring network at CeBIT '92, Germany's main telecommunications trade show.

ECI Telecom went on to beat four major telecommunications organizations in Deutsche Bundespost Telekom's VISION field trials, winning a \$43 million order for Add and Drop Multiplexers and network management software. This was one of the first such orders in the world and amounts to 60% of the German national carrier's SDH requirements for 1993-94. ECI has since been selected by other European national carriers for field trials and has positioned itself as the leader in the supply of ADM (Add and Drop Multiplexer) technology for the European SDH market.

ISRAEL HIGH-TECH & INVESTMENT REPORT NEWS AND INVESTMENT OPPORTUNITIES

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