

ISRAEL HIGH-TECH & INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES

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From the Editor's Desk

Toward a Second-World economy

When the populations of competing countries put national pride - the burning desire to be seen as world leaders - ahead of international responsibility, everyone loses. While the US was slipping into its current (terminal?) economic coma during the 1980s, neither Japan, West Germany nor the USSR - each smug in the belief that it was finally getting ahead in the race for primacy - foresaw the social and economic difficulties which would in turn overtake them in the 1990s. Is it conceivable that the Japanese, for example, were so intent on outperforming the Americans that they lost sight of the fact that falling US real estate values, plummeting stock prices and failing businesses - all seen as signs of Japanese victory - meant Japan's principal market, and thus Japan's export-based economy, was in trouble?

Today, with calls for help being heard around the world, it seems every nation is looking to democracy and the free-market system to save it from the throes of global recession. But which democracy? And whose free-market system?

Israel is a small country by international standards, with a population of only 5 million. Behaving as a responsible citizen in today's global village, it looks to exporters of products and services as the engine that will keep economies from sinking into recession. But this becomes more of a challenge when the once-mighty Europe joins Japan, America and the former USSR in their leap into an economic whirlpool. Some become protectionist in the mistaken belief that this is the way to keep economies afloat. Meanwhile, the entire ship is sinking.

But unlike the world's economic behemoths, which must rely on massive sales to massive markets, a small country like Israel can do very well indeed with crumbs from the international table. After all, the First World isn't the whole world, so while the great nations sink into the tar pits of global economic

recession, Israel has been looking elsewhere.

There are hundreds of Israeli engineers, entrepreneurs, lawyers and foreign-trade specialists toiling to promote this country on international markets, particularly in the Third World - not to exploit, but to assist. It is no longer appropriate to withhold accumulated knowhow and experience from a large percentage of the world's population in order to maintain a pool of cheap labor, or to stay ahead of a First-World competitor.

As our products are marketed, the benefits they bring will allow the buying countries to acquire more and more Israeli knowhow.

Small, in comparison with multi-nationals, high-tech export companies represent one of Israel's most valuable assets, and the one for which financing and investment is relatively easily available.

Spearheading these exports are telecommunications companies such as ECI Telecom, computer graphics firms, of which Scitex is the outstanding example, pharmaceuticals (led by Teva), biotechnology companies such as InterPharm and Biotechnology General, Israel Aircraft Industries and Elbit Computers, to name a just few.

We invite our readers to evaluate and invest in such firms, and thereby participate in the creation of a truly global, Second-World economy.

In this Issue

Toward a Second World economy: From the Editor's desk

Money Spinning: Seedy business with a brilliant future

Money Spinning: China- a bridge to distant countries

Israeli Companies on Wall Street: Quarterly Reports

Developments in Technology Business and Academia

An engine in the global race: an Entrepreneurial Center Opens

International Satellite Cooperation

To the heart of the matter: a report from a cardiology conference

The Pharmos Merger

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Money spinning

In this issue, besides our regular features, we are presenting for the first time an insight into Israel's ability to spin innovative technology into gold - of only limited value in Israel because of the smallness of its population - which could be applied in various parts of the world.

The Lord shall open unto thee his good treasure: the heavens to give the rain unto thy land in its season, and to bless all the work of thy hand. And thou shalt lend unto many nations, ...

(Deuteronomy 28:12)

Seedy business with a brilliant future

Nearly 60 processing projects involving vegetable oil-bearing seeds are operating in various parts of the world, thanks to innovations applied by Israelis in the early days of the State. The expertise was developed in the 1950s and 1960s, when Israel's vegetable oil industry was being built.

Vegetable oil is used in various liquid and solid forms in the preparation and manufacture of nearly all food products. It satisfies one of the basic human dietary needs. As well, the meal derived from the processing of seeds is the basic protein ingredient in feed for livestock and poultry.

Founders of the Israeli vegetable-oil industry modified processing equipment purchased from the US, Belgium and Germany. The key solvent extraction procedure was improved. International recognition followed when visiting industrialists showed interest in the equipment and wanted to buy it. The industry which had initially applied itself to filling strictly local Israeli needs was prepared to move outside of its borders.

Project development resulted, including the offer of equipment and knowhow, and has led to the implementation of international projects. The largest of these is the Sunflower Processing Plant in North Dakota, US. The American plant cost \$45 million, and its yearly output of sunflower oil and other byproducts is valued at \$150 million. Each day, 300 days a year, 2,000 metric tons of sunflowers are processed into oil.

Probably more facilities of this type have been designed and commissioned throughout the world than any other type based on local knowhow, points out Sam Mueller, head of BM Industrial Consulting Ltd. The European-born Mueller, who was raised in China and reached Israel at the age of 18, is connected directly to the supply of these plants. Seven years ago he created his own company, BM Industrial Consulting, which is part of the international IPM Group. Prior to that he headed

USOP, part of the Eisenberg group of companies. The first plant built in Israel, in the late 1960s, cost \$2.5 million and was designed to process 300 metric tons of seed a day. It was delivered to Thailand. In those days, the Government of Israel provided incentives for manufacturers of processing equipment. Today developing African countries, with populations well over 50 million, seek to acquire plants with five times that production capacity. However, when the incentives were decreased, in order to obtain contracts, the Israeli project developers had to commence supplying customers with foreign-produced equipment.



Sunflower Processing Plant in North Dakota, US

The most recently completed vegetable oil refinery in Taiwan was finished in well under 12 months, and processes 100 metric tons a day, relates Mueller.

Project development, to the uninitiated, appears to be more art than science. But one look at a typical feasibility study leading to a turnkey project reveals exhaustive in-depth analysis. The study shown to a prospective client covers every aspect of operations, from evaluation to procurement, installation of machinery and material handling systems, to supplying finance, management and operating personnel.

But sparkling feasibility studies are not enough to win major contracts. International competitiveness, and other aspects of the offer, make all the difference. The North Dakota plant offer included innovative financing at 6-8% while international interest rates were 16-18%.

In 1984 the need to include equipment other than Israeli-made, was obvious. Israeli design and engineering was highly competitive, but countries such as Australia could offer cheaper hardware.

Israeli manufacturing costs are often high, but its engineering is considered good and cheap. It was this relative advantage that Mueller exploited.

The economics of the vegetable oil processing industry are uncomplicated. The raw material – the bean – is a commodity, and the products – vegetable oil and meal – are also commodities. Since commodities have a daily price, specialist banks serving the industry can supply credit on the basis of the component commodity prices. Raw material cost are intensive, but the operational expenses represent only a fraction of the sales cost. Production efficiency and timely buying of the beans are key factors related to profitability. A plant costing \$45 million and producing at an annual rate of \$150 million can return invested capital within three years.

Industry specialists speak of the key formula, which determines the Crushing Margin. CM is the income from products sold less the cost of the beans. The crushing margin calculation for a typical plant producing 18% oil and 80% meal is as follows:
Crushing Margin = 18% x Price of Oil + 80% x Price of Meal - Cost of Bean. The resulting figure, the Crushing Margin less Operating Expenses, is profit.

And the future? A United Nations report predicts that the next four decades will see the fastest growth in population in all history. By 2050, today's global population of 5.4 billion is expected to double. The demand for vegetable oil and meal will grow in parallel.

China - a bridge to distant countries

China is even more open for technical cooperation with Israel than are the East European countries. The key is to understand the Chinese drive to acquire manufacturing knowhow. They can buy the fruits of Israeli expertise and either produce equipment or construct entire plants, which first will be marketed in China, and then in countries with which Israel has no relations. The concept is to upgrade Chinese industries and use Israel as a marketing partner, says Dr. David Gurevitz, a technology specialist in international projects.

Technology marketing specialists generally prefer not to identify customers until projects are completed. Neither do they discuss the size of projects. For example, there is a company, part of Israel's metal processing industry, currently negotiating for the supply of its specialized equipment. The Chinese buyer has negotiated the purchase of not only the equipment, but of the plans for their further production in China. It is understood that the Chinese will be manufacturing the equipment for

sale, not only within China, but also to neighboring countries.

But are deals of this type - involving the transfer of technology but the loss of manufacturing and export opportunities - good for Israel?



Taiwan Oil Refinery, 1990

Dr. Gurevitz points out that certain countries would not buy Israeli-designed equipment. Therefore the income from technology sales would not be realized anyway.

In any agreement, China's marketing territory is specified so as not to create competition in existing Israeli markets.

Improving the Eastern European spud

In offering technology to most Eastern European countries, the concept is very similar" suggests Dr. Gurevitz. Most are privatizing and among the first are the agricultural cooperatives. For Israel there are openings in the agro-industrial area by providing expertise - in great demand by cooperatives which, once run by a creaking state, now have freedom of control and operation.

An Israeli specialty is the potato. In some parts of Eastern Europe a small unattractive spud is grown. Dr. Gurevitz is affiliated with specialist companies in Israel which provide experience in growing, storage, packaging and processing the vegetable. For a decade he has participated in projects for one of the Eisenberg group of companies, for the United Nations, for Elite and for the Maxwell House Division of General Foods. He has overseen the building of a coffee plant in Thailand (which was part of a turnkey project), agricultural projects in

South and Central America, and a geothermal project in Italy. His experience, gained through this involvement from the entrepreneurial stage, through the supply of knowhow, equipment, manpower and financing, is used to create a network of Israeli agro-industry ventures, and this type of expertise can just as easily be applied in partnerships with Eastern European cooperatives.

A potato project is currently in the negotiation stage, and after completion will mark another milestone in the transfer of technology from Israel's agro-industrial sector.

Another project idea entails the erection of a slaughterhouse, sausage manufacturing and meatprocessing plant.

Israeli Companies on Wall Street

From April 2 until May 11 (the period covered by our Stock Table on page 6), the Dow Jones Industrial Average reached a new high. But some Israeli shares, which had experienced superb advances earlier in 1992, fell prey to profit taking. One case in point is Converse Technology, the price of which declined from \$1.06 to \$0.77 cents. Even so, these shares have advanced 29% since the beginning of the year.

InterPharm Laboratories was down a couple of dollars, as was Scitex. Yet the total market capitalization of the 38 companies appearing in the Table was a very respectable \$6.19 billion, compared with \$6.29 billion in the preceding period.

ECI Telecom

ECI Telecom Ltd. is Israel's premier publicly traded company. In the first quarter of 1992, it recorded \$66 million in new orders for its DCME and Digiloop products - three times the amount booked for the same period in 1991.

ECI quarterly report

(for quarter ending 3.31.1992)

	1992	1991
Sales	\$36.09 mil	\$22.37 mil
Net income	\$ 8.67 mil	\$ 5.07 mil

The company more than doubled its R&D expenses, to just over \$4 million. On April 10 the shares were split 2 for 1. With this issue ECI appears in a sponsored series of leading Israeli companies.

Lannet Telecommunication

(for quarter ending 3.31.1992)

	1992	1991
Sales	\$10.53 mil	\$ 4.63 mil
Net income	\$ 3.44 mil	\$ 1.29 mil

The profit margin, as seen above, reflects outstanding growth - a 165% increase on a year-to-year basis, and a 38% increase in comparison with the previously quarter. Management has indicated that expanded American business and enlarged production capacity were major reasons for the increase.

Teledata Communications Ltd.

Teledata is a newcomer to the ranks of Israeli companies on Wall Street. In April it realized \$25.6m from an initial public offering.

The company's products increase the number of subscribers who may be served by new and existing telecommunication networks. Teledata's target customers are phone companies providing services in the local loop - the loop being the network of transmission links that connects subscribers to the local exchange.

Teledata quarterly report

(for quarter ending 3.31.1992)

	1992	1991
Sales	\$ 4.48 mil	\$ 2.07 mil
Net income	\$ 1.09 mil	\$ 0.65 mil

R&D spending is just under 10% of sales. Looking ahead, financial expenses of nearly \$300,000 in this quarter will disappear as the result of moneys received from the IPO. This will further improve results in the second quarter of 1992.

Elron Electronic Industries

Elron Electronic Industries' \$3 million net profit for the first quarter of 1992 was nearly identical to its profits in 1991. The current figures would have been almost 40% better had not its long-held subsidiaries, Fibronics and Optrotech, reported net losses of \$1.3 million for the fourth quarter.

The greatest part of Elron's \$3 million profits came from its holdings in Elbit and Elscint (through Elbit).

UPDATE

ECI Telecom



Increasing transmission capacity at an affordable price

The global messaging market rose to \$3.25 billion in 1991, and is growing by 15% a year. This continually increasing demand for transmission capacity is only partially met by the laying of more undersea fiberoptic cables, and by the conversion of existing satellite links from analog to digital format. The hardware needed to increase transmission capacity is very expensive, so demand has been escalating for products which upgrade existing networks. Circuit multiplication equipment, ECI Telecom's specialty, fills the bill nicely.

Relying on sophisticated speech-compression technology, ECI Telecom's DTX family boosts the transmission capacity of satellites, fiberoptic cables, microwave links and coaxial cables. In this dynamically growing marketplace, ECI Telecom has established itself as a leading supplier of sophisticated systems employing digital speech processing, switching technologies and ISDN (Integrated Services Digital Network) compatible technologies. AT&T, for example, uses ECI equipment to expand the message-carrying capacity of TAT-9, a transatlantic telephone cable, and other fiber optic cables.

Outstanding growth

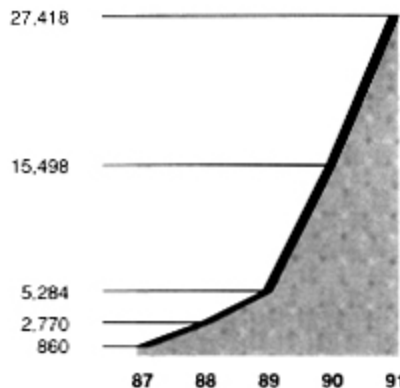
In 1991, ECI Telecom's sales exceeded \$113 million – a 365% gain when compared to the 1987 figure of \$24 million. Growth in earnings is equally impressive, with \$27.4 million in 1991 – 31 times more than in 1987. In the first quarter of

1992 the company received a record \$66 million of new orders for its DCME, Digiloop and other products

"Our ability to perform focused development, together with our philosophy of working closely with customers and knowing their needs, are the key elements behind our growth," says ECI President David Rubner.

Net Income

(\$ in thousands)



"In 1992, ECI Telecom is establishing a European base, and eastern Germany has been targeted as a likely location. Our European business is growing, and we wish to be closer to our customers. The planned expansion is to serve as a final assembly plant," he added.

ECI has regional offices in various parts of the world. Its U.S. production facility is in Orlando, Florida.

Products

The DTX-240E is the most widely used digital circuit multiplication system in the world. The DTX-240F, which multiplies facsimile traffic six-fold, has been successfully tested in coordination with major international carriers such as AT&T,

British Telecom and Deutsche Bundespost Telekom.

Digiloop is ECI Telecom's Integrated Services Digital Network (ISDN) product line which enhances and upgrades subscriber loops which are operating as they were half a century ago – a "twisted pair" of copper wires carrying calls in analog form. Digiloop converts the twisted pair into a "digital" pipe capable of transmitting digital information. Network congestion is relieved as subscribers can obtain more services within the existing infrastructure.

Marketing to nationals and multi-nationals

ECI products appear in more than 60 countries. At CeBIT '92, Germany's leading information system and telecommunications trade show, ECI Telecom with Deutsche Bundespost Telekom demonstrated one of the first operational SDH (Synchronous Digital Hierarchy) closed ring networks. SDH combines, monitors and manages high-speed digital transmissions in a fiber-optic environment.

"SDH is a major direction, and equipment is being shipped in 1992. We seek to carve a niche in this area," says Rubner.

Research and development

Though many modern companies have realized the value of research and development, ECI's commitment to the future is truly outstanding. Its R&D programs totaled \$12.8 million last year – more than 11% of sales. Of its 625 employees, more than 200 worked in R&D.

Israeli-Related Companies Publicly Traded in the United States
May 11, 1992

Ticker Symbol	Company Name	Marketplace	Mkt. Value (\$mil)	Latest 4 Qtrs.					Shareholders' Equity	Year to Date Stock Performance			
				Sales (\$mil)	Price/Earnings	Price/Sales	Price/Book	Profit Margin		High	Low	Close	% Chg
1 AIP	Amer Israeli Paper Mls -Ord	AMEX	189.8	277.4	14.3	0.7	1.7	4.8	116.8	52.50	40.75	49.88	21.3
2 AIS.A	Ampal American Israel -Cl A	AMEX	68.7	65.9	231.3	1.7	0.8	0.6	109.4	5.88	3.25	4.63	23.3
3 ARYTF	Aryt Optronics Ltd	NASDAQ	7.0	NA	NE	NA	NA	NA	NA	1.63	0.88	1.38	33.3
4 BTGC	Bio Technology General Corp	NASDAQ	165.0	4.7	NA	32.2	6.0	-169.3	29.9	11.75	5.38	7.25	-15.9
5 BVRTF	BVR Technologies Ltd	NASDAQ	18.4	NA	NE	NA	NA	NA	NA	NA	NA	5.50	NA
6 KML	Carmel Container Sys -Ord	AMEX	17.6	80.8	13.5	0.2	NA	1.6	11.0	7.38	5.38	7.00	12.0
7 CMVT	Comverse Technology Inc	NASDAQ	109.1	21.1	38.3	5.2	6.7	11.6	15.6	1.47	0.56	0.77	29.0
8 DSSI	Defense Software And Systems In	NASDAQ/NMS	19.8	NA	NA	NA	NA	NA	NA	13.75	9.00	9.88	NA
9 ECILF	ECI Telecommunications -Ord	NASDAQ/NMS	880.5	114.0	31.2	7.5	15.7	24.1	112.8	30.75	22.63	29.00	22.1
10 ELBTF	Elbit Computers Ltd -Ord	NASDAQ/NMS	520.9	409.6	14.8	1.3	3.5	8.7	181.0	33.00	24.25	31.75	27.6
11 EIF	Electrochemical Indus Frutar	AMEX	45.3	128.3	10.6	0.4	1.2	3.5	38.8	2.00	1.31	1.94	34.8
12 ELEIY	Elite Inds Ltd Adr Ca Nis 1 [1]	OTC	142.4	NA	NA	NA	NA	NA	NA	NA	NA	14.00	NA
13 ELRNF	Elron Electronic Inds -Ord	NASDAQ/NMS	278.2	0.0	11.9	3.6	2.7	25.9	116.2	19.50	14.38	16.00	4.9
14 ELT	Elscent Ltd -Ord	NYSE	409.0	197.0	22.4	2.0	7.0	9.1	99.2	6.00	4.75	5.38	13.2
15 ROBOF	Eshed Robotec	NASDAQ	34.1	9.3	15.8	3.7	4.0	22.7	9.5	4.13	2.75	3.78	18.6
16 ETZ	Etz Lavud Ltd -Ord	AMEX	24.0	98.2	5.6	0.2	1.4	4.0	15.8	11.50	6.63	6.88	-8.3
17 FBRX	Fibronics International Inc	NASDAQ/NMS	34.8	53.9	NE	0.6	1.6	-6.1	21.8	10.88	4.88	5.50	-24.1
18 FMSI	Fidelity Medical Inc	NASDAQ	18.4	5.9	NE	2.7	1.2	-2.7	16.3	12.25	3.25	3.63	-67.0
19 GALAF	Galagraph Ltd -Ord	NASDAQ	2.8	0.9	NE	12.3	102.6	-134.6	0.1	1.63	0.97	1.44	46.0
20 GOTK	Geotek Industries Inc	NASDAQ	10.0	36.8	NE	0.3	0.7	-0.2	15.8	2.44	1.63	1.94	5.1
21 HCTLF	Healthcare Technologies Ltd	NASDAQ	6.6	2.4	NE	3.4	3.8	-23.2	1.7	2.06	1.25	1.58	12.2
22 IDANF	Idan Software Ind Isi Ltd	NASDAQ	6.8	0.3	NE	20.2	5.2	-168.0	1.3	1.44	0.69	1.06	30.8
23 IICR	IIC Industries Inc	NASDAQ	32.0	3.2	13.8	10.1	0.6	73.0	51.1	25.00	20.50	22.50	0.0
24 IISLF	IIS Intelligent Info -Ord	NASDAQ/NMS	103.8	43.9	18.1	2.4	4.1	13.1	26.5	27.25	17.75	25.38	40.0
25 IPLLF	Interpharm Labs Ltd -Ord	NASDAQ	211.8	35.2	49.5	6.0	12.8	12.1	16.4	56.00	31.50	33.69	-23.9
26 ILDCY	Israel Ld Dev Ltd	NASDAQ/NMS	62.3	49.6	48.8	1.6	0.7	2.8	88.2	13.00	9.00	10.25	-4.7
27 ISTEf	Istec Industries & Tech Ltd	NASDAQ	6.4	0.0	NA	NA	6.8	NA	0.9	1.75	0.81	1.31	44.8
28 LANTF	Lannet Data Communications	NASDAQ/NMS	285.8	NA	NA	NA	NA	NA	NA	29.75	16.50	28.25	62.6
29 LAS	Laser Industries Ltd -Ord	AMEX	22.6	31.2	437.5	0.7	22.3	0.1	1.0	5.75	3.38	4.38	20.7
30 MGICF	Magic Software Ent Ltd -Ord	NASDAQ	23.4	NA	NA	NA	NA	NA	NA	10.00	7.50	9.25	19.4
31 OPTKF	Optrotech Ltd -Ord	NASDAQ/NMS	45.9	71.8	30.4	0.6	1.3	2.0	33.6	16.63	6.63	7.00	-47.2
32 OSHSF	Oshap Technologies Ltd	NASDAQ	26.1	37.9	54.7	0.7	2.3	1.4	16.1	5.63	3.88	4.38	-5.4
33 IEC	Pec Israel Economic Corp	AMEX	238.3	11.9	10.8	20.1	1.2	186.3	205.9	21.25	15.00	15.13	0.0
34 RADIF	Rada Electronic Inds	NASDAQ/NMS	25.8	26.5	45.5	0.9	2.0	2.2	11.3	8.25	5.63	6.38	-17.7
35 SCIXF	Scitex Corp Ltd -Ord	NASDAQ/NMS	1,455.8	430.2	14.4	3.4	6.0	23.4	325.9	44.13	34.88	39.00	9.9
36 SPILF	Spi Susp & Parts Inds -Ord	NASDAQ	1.7	22.6	2.5	0.1	0.2	2.9	8.2	1.13	0.25	0.50	-42.9
37 TAROF	Taro Vit Inds Ltd	NASDAQ	62.5	NA	NA	NA	NA	NA	NA	13.25	5.88	10.50	73.2
38 TEVIY	Teva Pharm Inds -Adr	NASDAQ/NMS	581.5	321.0	24.6	1.8	3.5	7.3	179.0	28.38	16.50	24.38	29.1
Total			6,195.0	2,591.5					1,877.1				

*U.S. registered securities with critical mass in Israel. NA= not available, NE= negative earnings

Source: FactSet Data Systems Inc. Provided as a courtesy to the Israel High-Tech Investment Report by the American Stock Exchange.

Scitex

Scitex Corporation saw the price of its shares drop by more than 10% while announcing its first-quarter results. Some institutional investors appear to be putting pressure on the company's shares - perhaps the result of disappointment with net profits of only \$24.7 million - a meager 10% increase compared with its results in the same period a year ago.

One financial writer at *Ma'ariv*, an important local newspaper, has suggested that Scitex should no longer be viewed as a premier growth company. Our view is somewhat different, since Scitex is not only a world leader in its field, but is still continually developing new products.

What seems to be happening is that the global recession may be affecting even the leading computer graphics company, though the \$35 million in orders received by Scitex at Imprinta 1992 - the International Prepress Trade Show held in Germany - is anything but unhealthy.

Scitex quarterly report

(for quarter ending 3.31.1992)

	1992	1991
Sales	\$118.00 mil	\$97.50 mil
Net income	\$ 24.70 mil	\$22.50 mil

Teva Pharmaceutical Industries

Teva Pharmaceutical appears poised - on the basis of its \$90 million in first-quarter-sales - to exceed \$400 million in sales for the year. The boom has been due, in part, to the unusually severe winter experienced in Israel (with its concomitant sneezes and sniffles), and an increase in US sales.

Teva's Osteo D - a new product for treating renal failure in dialysis patients - has been approved for sale in Turkey, Singapore and Yugoslavia. The approvals represent a first-time registry of this product outside Israel.

Teva quarterly report

(for quarter ending 3.31.1992)

	1992	1991
Sales	\$ 92.95 mil	n/a
Net income	\$ 7.86 mil	n/a

In March, Teva announced its acquisition of an Italian bulk pharmaceutical chemical producer, as well as a local marketing company. The acquisition should prove useful in Teva's marketing program to the EEC countries.

IIS - Intelligent Information Systems

IIS only reported its fourth-quarter results for 1991 on April 9. The fourth quarter sales were slightly lower than those of a year earlier, but net income was up 70%.

IIS had a record year in 1991, with sales of nearly \$44 million and a net income of \$5.74 million, compared with \$5.03 million a year earlier.

The company's future prospects are positive.

Recent Developments in the Technology Business and Academia**Nice Catch**

Nice Systems, a five-year-old Israeli company which designs and manufactures products based on advanced processors and communication techniques, has been awarded a \$350,000 contract by ESL Inc., an American defense contractor.

ESL has ordered the development and production of a fiber-distributed data interface bridge (FDDI), intended to merge a local signal processing system with up to 7 remote local area networks.

Novel Fire-Extinguishing Technology

A new, instant fire extinguisher may mean the difference between life, a handicapped life and death. Soldiers in burning tanks, for example, may be saved as a result of technology developed by Profs. Eron Sher and Shmuel Ben Yaacov of Ben-Gurion University's department of electrical engineering and computers. Developed in conjunction with Spectronics Ltd., the now-patented system enables split-second control of a conflagration of up to 4 m² (37 ft²).

The extinguisher involves the presence of a high-voltage source between the burning surface and an electrode. When voltage is applied, a strong air flow is created near the base of the flame, which separates the burning surface from the flames above it.

The system is extremely simple and reliable. Clean and non-toxic, it can be applied to open oil storage areas, tanks and aircraft. The new system replaces a previous approach developed by these engineers, which was highly effective but used halone, which harms the ozone layer.

Israeli Superconductivity Lives!

Synergy Superconductive Technologies Ltd. is continuing the activities of Xsirius Superconductivity Ltd, which was the Israeli division of an American company which opened a subsidiary in Israel in 1988.

The subsidiary was acquired by Geoff Gabby, an American entrepreneur who has settled in Israel. Most of the previous company's staff has been rehired, and R&D is continuing, especially in the enhancement of radar systems.

Americas AEL Laboratories, headed by Dr. Leon Ribman, has shown interest in handling the US marketing for locally developed superconductive products.

Synergy Superconductive Technologies Ltd heads a consortium which includes Elisra, Rafael, Elta, Tel Aviv University and the Jerusalem College of Technology.

Non-medical applications for Optical Slip Rings

Elscint Ltd. has integrated an optical data link called the slip ring into its new CT scanner. The company is delighted with the slip ring, which can also be used in the manufacture of nuclear medical diagnostic equipment.

The optical ring was developed at the Jerusalem College of Technology, which is now making the rings available for non-medical applications.

CompuPhone Has a Bright Future

Integrated Technology Inc. (ITI) management has expressed its satisfaction with the enthusiastic American response to its CompuPhone.

The product was displayed at the Comdex Show by KeyTronic, the largest keyboard manufacturer in the United States, reported spokeswoman Bonnie Shenkin. Inquiries were immediate, and we predict that orders will top several hundred thousand within the year.

Although the original marketing concept was directed towards the telemarketing industry, CompuPhone has proven popular with many other kinds of consumers, ranging from industrial firms to individual PC owners. Plans are underway to produce four different versions.

Included among ITI's 12-member staff at the Jerusalem College of Technology are Russian immigrant scientists and JCT graduates hired for the engineering team.

Calling the Multi-Handicapped!

The JCTs David Abramov has developed a telephone which uses electromechanical technology to allow blind and deaf people to feel incoming messages in braille letters.

A small instrument near a telephone contains six movable pins. At the caller's end there is a keyboard for typing messages and apparatus to translate the message into a broadcast. The signals from this broadcast activate the electrical element near the handicapped person's phone, moving the pins and spelling out the braille message.

According to Prof. Natan Avivi of the Jerusalem Technology College, who supervised the development of the special phone, the project has gained local and international attention. The invention has not only gained the scientist scholastic honors, but has been entered in an international competition in the UK for communication devices to assist the handicapped.

Israel's engine in the global race

The David and Anne Warsaw Entrepreneurial Center was inaugurated during a one-day conference on May 14. The conference provided a forum for the exchange of ideas on the entrepreneurial community in Israel, focusing on global entrepreneurship, particularly in high-tech industries.

The center is intended to promote, through education, business outreach and research, a better understanding of entrepreneurship, its role in the economy and its potential to promote growth in Israel.

To date, four research grants have been approved by the center's academic committee.

With the success of a previous one-year course in management for new immigrants having entrepreneurial potential, a second course is to begin in June 1992. Supported mainly by the Ministry of Labor's Bureau for Vocational and Professional Training, students will learn about economics, management and entrepreneurship, and for the last 3-months will receive practical training during assignments to various sponsoring firms.

A four-month course offered for the first time this year was for entrepreneurial industries seeking a suitable framework for their middle-level to senior managers. A leading team of the Recanati School of Business Administration lectured on intra-preneurship, and assisted students in the preparation of business plans. Participants included four general managers and teams from major

hospitals, Bezek, Sorek Nuclear Center, Ormat, Tambour, Cubital and some members of the IDF higher echelons.

With the Yahel Foundation, IDB, the Center continues its unique program of promoting new ventures, for newcomers and for Israeli-born alike. The project involves the screening of ideas, business planning, financing and tracking.

Screening is done by the Center and major Israeli organizations, and is financed by IPC (50%) and Yahel and Tel Aviv University (50%).

At Neshet - a small town near Haifa - an office has been established to provide management consulting for small businesses and new ventures aiming at established in the Neshet Regional Council area. Administrative backing is given by the economic development corporation of Neshet, supported by business professors at the Leon Recanati Business School.

So far, a textile business and an electronics industry have had loans extended to them.

International satellite cooperation

According to a recent *Space Research & Technology Information Bulletin*, Dr. Noah Brosch of the School of Physics and Astronomy, Tel Aviv University, along with a group of astronomers and engineers from Electro Optic Industries, is assembling a payload for surface photometry of astronomical sources in the 2000Å spectral range.

TAUVEX (the Tel Aviv University Ultraviolet Explorer) is being developed for wide-field imaging in the ultraviolet - a part of the spectrum largely hidden from ground telescopes by the Earth's atmosphere.

This is the first wide-angle, space-based imaging instrument for the 2000Å spectral band, and comprises three aligned telescopes each measuring 20 cm in diameter. It will observe and investigate the dust halos of comets, as well as dust between the planets and stars, and will study the distribution of hot stars and variable stars with high effective temperatures - all while examining the external regions of galaxies and searching for primeval galaxies.

Its discoveries are expected to be essential for future space missions.

The *Israel High Tech and Investment Report* has just learned, that the TAUVEX will be included as payload on a Russian satellite in 1994, part of a Denmark led project.

To the heart of the matter

The annual conference of the Cardiology Corporation in Israel was held at the Tel Aviv Hilton from April 27-29.

Some briefs:

- V. Fuster, USA, described the role of lipid-lowering agents, and how to keep cholesterol levels down by dietary means. There is no doubt that high-cholesterol diets are killing people. But diet isn't the only factor. Working with 'idiots' also brings on heart attacks, said Fuster.
- Martin B. Leon, USA, outlined patient-selection techniques, indications and future directions for stent implantation.
- S.A. Quireshi, UK, described the state of the art and future directions in pediatric intervention and cardiac catheterization.
- D.A. Rothbaum, USA, outlined the use of laser with PTCA.

How do you know if you're having a heart attack?

Chest pains are the classic symptom, and are the first indications of myocardial infarction (ie. heart attack) in 70% of all cases. Such pains should be reported to one's family doctor, who will determine whether a traditional electrocardiogram or stress test should be ordered. These initial tests may, in turn, lead to a call for an angiogram - a picture of the blood vessels around the heart.

"All this information taken together should enable a cardiologist to decide whether or not to perform an angioplasty or recommend bypass surgery," says Dr. Hylton Miller, head of catheterization at Ichilov, Tel Aviv Medical Center.

At Ichilov, as at centers such as Tel Hashomer, Beilinson and Rambam, bypass surgery and angioplasty procedures are carried out at a rate of two or more a day. Yet many more are performed in the US than anywhere else in the world, so it is there that researchers and investigators are developing new techniques.

Cardiology departments are rumored to be the most important income producers for hospitals and clinics.

Conventional balloon angioplasty, which has proven effective in well over 90% of all heart cases, still predominates as the leading cardiac intervention. But major American medical centers are adding more high-tech procedures.

According to conference guest speaker G.O.

Hatzler 10% of all cases at the medical center are now being handled by stents and lasers.

At the Washington Medical Center, reports Martin B. Leon, the percentages are much higher. Balloon angioplasty represent 60% of the procedures, while newer approaches are preferred 40% of the time, he said.

Pharmos

The US-based Pharmatec Inc. and Pharmos Corporation, an American company with its principal operations now in Israel, announced on May 14 that the two firms are to merge.

Pharmos shareholders will receive 0.76 shares of Pharmatec - shares which will be subject to restrictions on public trading for 15 months following the merger.

Pharmatec will change its name to Pharmos and, as a result of the merger, will have approximately 24.8 million shares, all shares outstanding having a current market valuation in excess of \$70 million.

Professor Haim Aviv, co-chairman of Pharmos, has been appointed acting Chief Executive Officer of Pharmatec. He is the founder of Bio-Technology General and Assuutech Ltd, and is a leading Israeli entrepreneur in biotechnology and pharmaceutical start-ups.

Pharmatec, with headquarters near Gainesville, Florida, is a research-based drug development company. Its patented carrier system, invented by Dr. Nicholas Bodor and licensed from the University of Florida, has been shown to significantly enhance the delivery of drugs to the brain in animals, and in limited human testing.

Based on pre-clinical studies, combining AZT with Pharmatec's carrier may prove advantageous in the treatment of AIDS-related dementia.

Pharmos is a privately held biopharmaceutical company with a proprietary drug delivery and formulation technology (Sub-Micron Emulsion or SME Technology). The initial application of this technology is in ophthalmic drugs, the first of which are now in Phase I clinical trials.

Pharmos is also developing a new class of pharmaceuticals which, in pre-clinical experiments, have demonstrated neuro-protective properties. These compounds may be useful in the treatment of central nervous system disorders such as stroke or head trauma.

The Pharmos lab in the Kiryat Weizmann Science-Based Industrial Park has been involved in

tests using HU-211. This drug, developed by Prof. Rafi Meshullam of the Hebrew University School of Pharmacy, works like cannabis (marijuana) in that it blocks certain brain receptors, but it has no psychotropic properties.

The Jerusalem Post reported that Professor M. Ginsberg, Chairman of the University of Miami's neurology department, after visiting Pharmos, had expressed great satisfaction with the tests being done there, and pressed for the start of clinical trials.

Another merger is already in the offing, as the new Pharmos company has an option to buy Xenon Vision Inc.

Xenon, a privately held, research-based pharmaceutical outfit in Florida, is developing several patented products for the ophthalmic field, including a steroid for treating eye inflammation. This steroid has completed Phase II clinical trials, demonstrating clinical efficacy with minimal side effects.

Xenon is also developing two beta-blockers for the treatment of glaucoma. These have shown reduced cardiovascular side effects in Phase I clinical studies.

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