ISRAEL HIGH-TECH REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES

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EDITORIAL

TOUGH ECONOMIC DECISIONS AWAIT NEW GOVERNMENT

For a number of months, the Israeli government has marked time as the country has prepared for national elections. Immediately after the vote the new government will face a number of vital issues. Awaiting action by the new government is the question of finding ways and means to strengthen the basis of Israeli industrial competitiveness.

Contrary to the findings of the Jerusalem Institute of Management's massive study *Export Led Growth Strategy for Israel*, the Israel High-Tech Report continues to contend that science based industries are creating and can be expected to continue to produce a competitive and export driven economy. This is so in spite of serious questions to the contrary, on the part of government officials, academics and even some industrialists.

Our exclusive study indicates clearly that science-based industries are capable of a high level of sales and a high level of exports as a percentage of total sales. The same analysis points to Israel's electronics industry, by 1990, exceeding total sales of $3 billion and exports of $2 billion. We are told that most countries in the world would be very pleased to have that ratio for their output and this is especially true for western countries like the United States and Great Britain.

The newly elected government can be expected to improve the balancing of the budget by moving along the road to privatization of government owned industries. Most members of Israel's Parliament see privatization as an economic panacea. Encouraged by the achievements of the Thatcher government, the Israeli policy makers expect that $5 billion can be raised by selling the Government share of more than 200 companies.

It is not a simple matter to decide what portion of funds obtained from the sale of assets should be used to promote and enhance science-based exports. It should be noted that the Government of Israel, not unlike other governments, has rarely proved correct in choosing which horse to back.

The new Israeli government would do well to consider encouraging investment in the "technologies of the future". This implies a longer term view which is a pre-requisite for achieving these goals. The government may well consider continuing and even expanding partnership relations between itself, industry and labor, resulting in the expansion of regional development projects such as Tefen and Galilee 2000. The Government will also have to decide whether to shift defense spending from conventional to sophisticated weapons or vice-versa, taking into account the strategic balance of power in the area, the production costs and the defense

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industries' ability to export excess production.
We hope that the government will achieve savings by moving towards the development of more technologically based weapons systems. These generally require less manpower than conventional systems.

The Government will also have to decide whether to build on the success of the Offek-1 satellite and undertake a major space development program. If that decision is made, longer term financing will be required.

The new Government will be helped by the fact that approximately $5 billion of Israel's foreign debt has been refinanced with the guarantee of the United States government. The new and lower interest rates yield $150 million in savings that can be applied productively. Any lowering of the interest rate structure within Israel will be especially meaningful for high-tech industries which have fewer opportunities than other industrial sectors to obtain long term credits.

The Government will also have to consider the option of less involvement in research and development and,the possibility of making industrial research and development more attractive by enacting tax incentives.

If the new government of Israel takes measures favorable to the expansion of science-based industries, we can continue to anticipate that the Israeli high-technology sector will be a forerunner in creating a surplus in Israel's international trade.

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Mlavsky waxes lyrical about high-tech music

Dr. Ed Mlavsky, executive director of BIRD-The Israel-US Binational Industrial Research and Development Foundation back from a recent US trip was highly enthusiastic about a product made in the US and with the aid of BIRD funding .The US Just for You Inc. in conjunction with the Israeli LKP Ltd. have developed a machine that composes and performs orginal music. The equipment consists of a combination of computer hardware and software resulting in a system which which facilitates music composition.
The capabilities of the JFY Music Generator include theme-creation, enlarging, blending, as well as full orchestration and composing. The result is music played by up to 16 individuaal instruments or sound boxes. The JFY Generator was used by the BBC to create the entire score and background music for its prime-time special the Demjanuk Dossier and by British Airways in a training film.

MAJOR DEVELOPMENTS AT INSTITUTES OF HIGHER LEARNING

COMPOST.....
Experimenting with cucumber and radishes, Profs.Yona Chen and Yitzchak Hadar have established that soil born pathogens which harm plants are suppressed when the plants are grown in potting soil containing compost from liquorice roots and grape residues. The two researchers from the Hebrew University Faculty of Agriculture have achieved international renown for their investigatory work of various composts as additives to peat for use in potting soils. Crop growers have benefitted from initial reduction in costs and healthier crops.

CANCER CHEMOTHERAPY ENHANCED
Cancer patients at Haifa's Rambam Medical Center's Nuclear Medicine Department are being carefully monitored to determine whether those having a high uptake of chemotherapeutic drugs such as bleomycin and cisplatin respond better to therapy than those with a lower uptake. Technion's School of Medicine Prof.Dov Font, utilizing Elscint's SPECT camera (single photon emission computed tomographic), photographs areas where the tumors lie and determines drug uptake by calculating the amount of radioactivity emitted by the tumors. Key to the enhancement of cancer

treatment monitoring is the ability to apply radioactive technology to chemotherapeutic drugs. Dr. G. Kolodny Chief of Nuclear Medicine at Boston's Beth Israel Hospital and other cancer specialists are confident that this technique will be adopted as a routine diagnostic method for predicting whether tumor-killing drugs will reach tumors.

MECHANIZED SUPPORT FOR ROBOTS

The existence of robot operated factories and machines controlled by computers that have been programmed by robots, are a reality. This is so whether in Detroit, Osaka or at Iscar Blades' northern Israel Ma'alot based plant. An major obstacle to a smooth and cost effective robot operated manufacturing is the inefficient methods now used to get tools and parts into robots "hands".

A team of engineers headed by Professor Ehud Lenz, dean of the Faculty of Mechanical Engineering at the Technion has developed an Automatic Guided Vehicle. The AGV runs without having to resort to electrical cable tracking and can move freely anywhere on a factory floor. Sonar detectors provide "sight" and avoidance of obstacle capability. A laser triangulation system calculates the AGV's location on a floor in situations when obstacles such as a metal chip or oil drop result in signal breakage. Automated factories benefit from increased productivity and lower production costs.

A High-Powered Conference

The Israel High-Tech Industries Association (IHTIA) organized a high power conference attended by more than 200 executives representing a broad cross-section of Israel's science-based industries. The conference took place less than three weeks before the Israeli elections and Ministers Gad Yaacobi, Moshe Shahal and Deputy Prime-Minister Shimon Peres were among the key speakers. Moshe Cohen, Dr.David Hazelkorn, and Moshe Nissenson, members of the executive of the IHTIA detailed the problems and challenges faced by fledgling high-tech industries. Among the issues aired were the lack of availability of capital needed by companies to market their products in foreign markets. The attending ministers were urged to back the passing into law of amendments to Israel's income tax regulations, whereby special tax treatment would be accorded to public capital investment for commercialization of R&D.

Economic and Planning Minister Gad Yaacobi revealed that efforts are being made to form a $100 mil. venture capital fund. It would join the US AID program, overseas companies and individuals with local Israeli interests as a founders' group.

Deputy Prime Minister Shimon Peres pointed out that a major financial difficulty faced by the Government is its need to use 50% of all tax income to cover Israel's external and internal debt.

Energy and Infrastructure Minister Moshe Shahal spoke in favor of a far reaching overhaul of the system of allocation of R&D funds. Recently Minister Shahal introduced reforms of the country's energy sector and has been credited arranging the sale of the Government's stake in the Paz Oil company to an Australian businessman.

TOP MANAGEMENT CHANGES AT ELSCINT LTD.

Shmuel Parag, 46, with the company since 1972, has been appointed by the board as President and CEO. Parag earned a masters degree in computer science and electrical engineering from the Technion Israel's Institute of Technology. Prior to his receiving the appointment to the top post, he held various senior positions at Elscint.

Benjamin Peled, who steps down as president, does so after achieving his stated objectives related to Elscint's recovery, over the past 30 months. He is expected to retain his relationship with the Elron group by remaining on the boards of various companies within the group.

CORRECTION

Due to a typographical error IHTR reported expectations for Teva's sales as $100 million; the correct figure is $180 million.

ISRAEL HIGH-TECH SHARES TRADED IN THE USA

	P-E Ratio	Price as of 10/14/88	Change since 9/15/88		Earnings per share 1986/7	1987/8
[illegible] OTC						
BIO-TECH GENERAL Biological products for health care	d	3	- 3/4	3 Mo Mar	d 0.38	d 0.47
[illegible] OTC						
ELBIT COMPUTERS Defense electronics	6	4 7/8	n.c.	6 Mo Jun	0.67	0.39
[illegible] OTC						
ECI TELECOM LTD. Telecommunicati Systems	9	3 3/8	n.c.	6 Mo Jun	0.04	0.20
[illegible] OTC						
ELRON ELECTRONICS Company investing in high technology	11	3	+ 1/8	6 Mo Jun	d 1.22	d 0.15
[illegible] NYSE						
ELSCINT Full range medical imaging		1 1/8	n.c.	3 Mo Jun	d 0.18	d 0.02
[illegible] OTC						
FIBRONICS INT'L Fiberoptic communications	d	3 5/8	n.c.	6 Mo Jun	d 0.08	d 0.09
[illegible] OTC						
INTERPHARM LAB. Biological products for health care		2 7/8	n.c.	3 Mo Mar	d 0.09	0.02
[illegible] ASE						
LASER INDUSTRIES Surgical laser systems	d	3 1/2	- 5/8	6 Mo Jun	0.32	d 0.47
[illegible] OTC						
OPTROTECH Electro-optical systems for PCB	11	4	+ 1/8	6 Mo Jun	0.23	0.22
[illegible] OTC						
SCITEX Computer graphics	5	6	+ 1/2	6 Mo Jun	d 0.68	0.49
[illegible] OTC						
I.I.S. Computer peripheral equipment	5	4 7/8	- 1/4	6 Mo Jun	0.37	0.46
[illegible] OTC						
S.P.I SUSPENSIOS - PARTS INDUSTRIES Military components	9	5/8	n.c.	3 Mo Mar	0.07	0.04

d = deficit

HIGH-TECH SHARE PROSPECTS AFTER THE ISRAELI ELECTION

Most Israeli economists and businessmen have prepared themselves for developments which are expected to take place shortly after the Israeli national elections.High on the agenda is an adjustment in the rate of exchange of the New Israeli Shekel.They generally consider such as a step as both imminent and inevitable. The anticipated timing is shortly after the establishment of a new government. Some favor a moderate adjustment in the rate of exchange of 6-10 per cent while others suggest a rate adjustment of 10-14 per cent. The recent weakness of the US dollar on the foreign exchange markets, when the American trade figures were announced may lead the Israeli Treasury together with the Bank of Israel to opt for a higher rate than would have been the case had the dollar not lost some of its strong gains in the earlier part of 1988. For most Israeli high-technology companies the devaluation is expected to provide a major boost to earnings.

Uniqueness of product,an established business record in terms of a market presence and product acceptability along with a low market valuation make some of Israel's high-technology company highly attractive. Applying fundamental analysis used in evaluating high-technology companies we have come up with a number of our favorites which stand to benefit from an improved post-election economic climate. Some of these companies have recently been mentioned favorably by veteran follower of the Israeli scene John Westergaard, of Equity Associates, Catherine B. Carr of Adams, Harkness & Hill and E.Lunz of Bear Stearns. Our own analysis has pinpointed Elron Industries, as the best single vehicle for an investment representing a broad spectrum of Israeli science based industries. Scitex, Fibronics, Optrotech, Laser Industries, InterPharm and ECI Telecom are also superb choices.

NEWS OF ISRAELI COMPANIES ON WALL ST.

Recently there has been little movement of prices and if anything they have trended irregularly lower.

The low quoted prices of biotechnology shares reflect a lack of good news to spur investment interest and higher prices. BioTechnology General followers are wondering about a delay in the expected announcement of FDA approval of the company's key product HSOD.

InterPharm management has categorically denied rumours that the firm had suffered a major setback due to a rejection of an interferon shipment by its corporate parent Ares-Serono. Barring any untoward events, InterPharm is heading for its best year since its founding.

Laser Industries' chief David Meridor is rebuilding his company's North American marketing setup and, along the way, making personnel changes locally and internationally.The restructuring is taking longer than anticipated and we can expect more P/L shock waves when the company announces its third and fourth quarter results.

I.I.S. (see Company Report p.7) continues to enjoy strong demand for its products at home and abroad. It is among the few ICOWs that have a dividend payment policy. Other dividend payers include Elbit Computers and Etz Lavud .

ECI Telecom has landed a $1 mil. order from the Swiss, proving strong acceptability for its new product group, which allows telephone companies to provide subscribers with full digital service. The thrifty Swiss are taking advantage of ECI's cost effective equipment, which enhances for the subscriber benefits

	10/14/88	9/15/88
DJIA	2133.18	2100.64
S&P 500	275.50	269.31
NYSE INDUSTRIALS	187.35	183.31
ASE MARKET VALUE	302.55	298.35
NASDAQ INDUSTR'LS	382.56	387.32
ISRAEL HIGH-TECH REPORT INDEX*	96.7%	96.69

*ISRAEL HIGH-TECH REPORT INDEX is a weighted index made up of the shares of 10 leading high-tech companies. Base=100 as of 9/30/84

from expanded ISDN data, voice and video services. ECI is supplying this product to a another concern which is sensitive to cost effectiveness: the West German Telephone. ECI's ability to satisfy the European market's needs will position it very strongly for 1992 opportunities. At that time Europe will become a single unified market for goods and services. ECI's technological uniqueness creates a business opportunity situation. Taking advantage of the opportunities presented will depend on a number of factors, not the least of which is the future shape of Europe's industrial structure, the degree of internal competition and Europe's l openness to outsiders after 1992. The current orders by the Swiss and German telecom companies are an important step for ECI.

NEW ORDERS

A $2 mil.order has been received by Ormat Turbines Ltd. from New Zealand's Bay of Plenty Electric Power Board for two modular power units with an installed capacity of 2.1 MW. The area of installation is Kawerau, a geothermal area in N.Z. The Bay of Plenty utility has acquired the geothermal water rights from New Zealand's Ministry of Energy. The generated power will be sold by the utility in its designated distribution area. Utilization of New Zealand's moderate temperature geothermal water resources to produce electricity is achievable with Ormat's patented Energy Converters, which are capable of using the low temperature geothermal water to drive electricity producing turbines.

WEST GERMAN DYNAMITE NOBEL PLACES INITIAL ORDER

IHTR identified ELOR Optronics Ltd. as an emerging growth company in a major analysis [IHTR-4/1988]. The West German Dynamite Nobel concern, an important munitions manufacturer, has signed a DM1.5m.contract with ELOR for its Non Contact Visual Ammunition System.(VINA) The system will be delivered to the buyers by May 1989 .VINA eliminates manual sorting of cartridges. VINA installations exist in Israel and Great Britain and the West German order represents an important additional sales breakthrough. According to ELOR's management, the VINA system's approval and purchase by Dynamite Nobel is an important plus in ongoing negotiations for the sale of this system to other companies.

Offek-1 Israel's First Satellite Still Orbiting

Exceeding original estimates of a 30 day flight, Offek-1[IHTR-10/88] continues to orbit east to west every 90 minutes and rotates about its main axis at the rate of one revolution per second. The satellite's body mounted solar panels are said to be working more effectively than originally anticipated. The supply of electrical energy required to maintain Offek-1 aloft is in excess of original calculations.
According to Daniel Weihs, Dean of the Technion's Faculty of Aeronautical Engineering, the next Israeli satellite will carry a major scientific experiment the nature of which is currently being discussed in Israel. It will be in the field of astronomy, earth sensing, biological experimentation or lasers. Preparation of such experiments generally take up to two years.

ROSH EXPERT SYSTEMS INNOVATE FIELD SERVICING

Organizations servicing computer based systems continue to be hard pressed to cut down on maintenance time and costs.
Aiming at a small portion of the rapidly growing expert systems market, Boston, Massachusetts based Rosh Intelligent Systems Inc. along with its fully-owned Israeli subsidiary are providing productivity tools for on site servicing of computers and electronic systems. Field service engineers and technicians become more effective in their work with the Rosh developed expert system, which solves field service problems related to micro-processor based systems. According to the industry magazine Electronics

Test, the Rosh's Computer Aided Intelligent Service System (CAIS) represents the "first commercially available expert system aimed at solving field service problems". CAIS consists of an expert system, a 68020 based work station and a lap top PC used on site during field service calls. The expertise required has been previously computerized and is then made available at the remote site as well as at the home office. The system consists of two major elements. One is Field-CAIS whose components are Brief-CAIS, the field element of the system, and Central-CAIS which is the work station allowing Brief-CAIS to access the expert system. The other element is Knowledge-CAIS which is a workstation allowing the product specialist to enter trouble shooting and repair parameters.
Rosh's marketing executives point out that 80-90 per cent of field service problems that an expert would routinely encounter and solve will be solved by CAIS. Before CAIS can gain a broader acceptance for its systems it will have to overcome the generally conservative approach to field service activity, which is generally labor intensive.
Considerable time and effort are required to convince a $120,000 a year field engineer that he can be helped by an expert system.
In 1987 Rosh sold its systems to two "Fortune 100" clients on Beta-Site terms. In 1988 it is intensifying its sales efforts in offering systems priced at $8,000 to $10,000. Elron holds 28% of Rosh Inc's capital and voting rights. Elron as early as in 1987 realized $728,000 in income.
Rosh Intelligent Systems was founded in Jerusalem four years ago, as an Elron subsidiary

IIS INTELLIGENT INFORMATION SYSTEMS; COMPANY REPORT

Less than ten years ago the founders of IIS committed themselves to the risky business strategy of producing peripheral and communication products designed to be plug compatible for medium and large IBM and IBM compatible mainframe computer systems. The entrepreneurial strategy put IIS on a course which would in time lead them to compete against American giants Telex/Memorex and IBM itself.
Basing themselves on their educational background as graduates of the Technion- Israel's Institute of Technology and subsequent working experience at Elbit Computers Ltd.they designed their first display terminal in a garage in Haifa.
Since those days the company has grown steadily. In calendar 1987 sales were $13.6 mil.and net profits exceeded $2.9mil. In 1988 sales are expected to increase to $18.0 mil. with profit margins in line with those of 1987.Looking ahead to 1989 indications point to a further growth in sales to the $25-$30 mil.level.

Summary

Based on discussions with management during an extended visit to IIS' corporate headquarters, its manufacturing and research and development facilities we are impressed that IIS has the technological capability, and managerial expertise to achieve its stated goal of sales of $100 mil.in the early 1990s.

IIS' market share in Israel is at 65% but future growth is based on expectations of a continued rapid expansion of sales. in the United States and the UK
The American market for peripherals is susbstantial and customer satisfaction allows for a major expansion of sales. The company's American clientele includes topnotch corporate names such as General Dynamics and Bell Helicopters. Continuity as well as more and larger orders from American customers proves IIS' ability to provide product value and satisfactory sales support in a highly competitive marketplace. The ongoing scaling up of manufacturing facilities and the integration of the Haifa production sites at the new facility in development town Yokneam establishes production capacity to supply the sharply growing sales.

Products

The product line consists communication controllers, work stations, printers and accessories.

IIS' communications controllers allow the connection of up to 32 IBM or IIS' own printers or terminals.
The line of workstations are plug compatible with the equivalent IBM 3191/2 terminals. These workstations are offered with a variety of featured and options including printer ports.
The company also offers a line of workstations and printers that are compatible with with IBM 5250 terminals including the new 3196 and 3197, connecting directly to IBM System 36/38 and to the communication controller.

Research and Development

Over the past three years IIS has spent some 6.5% of sales income on R&D. This includes royalty bearing participations by the Israeli Government. Currently,twenty engineers and technicians are employed in various R&D projects.The development work is market driven and focuses on the development of new plug compatible models and introducing them close in time to those being produced by IBM and DEC. R&D expenses should grow as sales increase.

Marketing

The company's wholly owned American subsidiary is located in New Jersey. IIS maintains field offices in Dallas and on the west coast. The company also has a wholly owned marketing and after sales support subsidiary in the United Kingdom.
Over the past eight years IIS sales have resulted in an installed base of over 40,000 units of which 10,000 are installed outside of Israel. Most recently the United State Department of Justice has ordered IIS products to be used by the Supreme Court of Justice.
As would be expected the company's products are well known in Israel which per capita has the highest computer user population. IIS management considers the local market especially challenging as Israel has become the target area of the world's major computer companies.

Finances

With total current assets of $16.5m as compared with total current liabilities of only $5.3m. the ratio reflects good liquidity.Shareholders equity at the end of June 1988 was $13.9 mil.
In the past four years the company has financed its activities from internally generated funds and from the November 1984 initial public offering of 900,000 ordinary shares which provided the company with $3.2 mil.The balance of the share are mostly tightly held by the company's four founders.The average weighted number of shares outstanding is 3,905,000. The shares are traded on the US over-the-counter market.under the symbol NASDAQ:IISLF.
The current market valuation of IIS at nearly $20 mil. is only moderately higher than its book value.

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