

# ISRAEL HIGH-TECH & INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES

JOSEPH MORGENSTERN, PUBLISHER

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## Democracies Join to Respond to Terror

What will be left in the mind's eye after the calendar year has turned the corner and 2002 has been ushered in? One is the magnificent and heart-warming human response of New Yorkers in the aftermath of the Twin Towers disaster. The other is the indomitable spirit of Israelis, who endured bereavement in the aftermath of the unspeakable crimes of terror inflicted upon children and civilians.

The prospects for 2002 are hopeful but far from cheerful. Mainly what is lacking is the customary "end of the year confidence" that the New Year should bring greater tranquility and prosperity.

Americans, for the first time in history are exposed to life in the shadow of possible renewed terror attacks. No one knows what they could be but American officials suggest a prospect of biochemical attacks, including the poisoning of the water supply, the spread of the smallpox virus and the use of finely powdered anthrax, a small amount of which is assumed to be able to kill hundreds of thousands. As a result, a variety of possible technologies are being examined with which to counter anticipated new attacks.

A painful blow to Israel's aviation was inflicted in the 1950s when a civilian El Al Airlines plane fell prey to terrorists. The loss of life was appalling. The Israeli response was to install novel anti-terror measures that are being used to this day. These have proved effective as El Al has been flying since then without any further breaches of security. Measures used by El Al are being implemented now by other air lines.

Israeli security officials now in the United States are assisting America's airlines. Air marshals, as on El Al planes, will shortly be stationed on all airline flights. Special armored security doors are being installed to protect the pilot and navigators from intruders.

Americans are keen to move ahead with their own war on terror and to adopt measures to thwart loss of life and property, abroad and at home.

Israel is openly making its know-how available. This is happening in real time. One Israeli system for detecting

explosives being carried by a terrorist intent on boarding a plane, is sophisticated in form but simple to apply. The product's main advantage is that it detects explosive substances from a distance and without the necessity for contact.

Discussions are underway, IHTIR has been told, to form a strategic partnership with an unnamed American company. This is happening while Israeli intelligence sources are warning its Government of more plans by Palestinian terror groups to attack targets within Israel. The response is to rush anti-terror products, based on defense technologies, from the laboratory into the field.

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These counter-terror products and techniques are constructed to withstand atomic, biological and nuclear terror threats. Israel's water supply, for one example, is vulnerable to biological attack in a section of this country's National Water Carrier, which is open and exposed to easy attack, and can be easily polluted. A biosensor that could be applied to detecting chemical warfare agents and other toxins in public water supplies has been developed by Dr. Robert Marks and his team in Ben-Gurion University Institute for Applied Biosciences. It could prove the answer for a quick and effective warning system against biological attack. (*IHTIR 1/2002*) Newspaper reports suggest that the Israel Institute of Biology has developed what is the world's second anthrax vaccine.

The "War Against Terror", that is constantly waged by Israel, is decades old and an integral part of everyday life. When this War, only recently turned global, is ultimately won, people throughout the world will be able to return to a less stressful life style and dedicate themselves to peaceful pursuits. We wish a Happy and Peaceful New Year to our many friends throughout the world.

## R & D UPDATE

### ***Israeli Scientists Can Affect the Progression of Type I Diabetes***

A team of researchers led by Prof. Irun Cohen of the Weizmann Institute of Science has developed a unique approach for halting the progression of Type I (juvenile or insulin-dependent) diabetes.

Prof. Cohen and Dr. Dana Elias discovered that injecting mice with a small peptide fragment known as p277 prevents the progression of Type I diabetes. Based on the results of their research, Peptor, a biopharmaceutical company from Rehovot, Israel, developed DiaPep277, an experimental drug designed to prevent or treat Type I diabetes.

For several years, researchers at the Weizmann Institute's Department of Immunology, led by Professor Cohen, have been studying the mechanism by which the immune system targets insulin-producing pancreatic cells. Working with mice, the scientists discovered that a protein called HSP60 was closely linked to this process. However, a small peptide

fragment of this protein (p277) can actually be utilized to prevent the progress of Type 1 diabetes.

Diabetes is a chronic disease associated with elevated blood sugar levels, in which the body does not produce or efficiently utilize insulin - the hormone needed to convert sugars and starches into energy. Recent data show that between 120 and 140 million people suffer from diabetes worldwide. Currently, all Type I diabetes patients must supplement their natural insulin production with insulin injections.

A recent six-month clinical study of 35 patients proved that DiaPep277, is successful in arresting the progression of Type I diabetes, in newly diagnosed patients. The patients receiving DiaPep277 clearly showed a halt or delay in the attack upon, or destruction of their pancreatic insulin-producing cells by the immune system, evidenced by a decreased need for insulin injections.

In contrast, patients receiving the placebo showed a significant decline in their natural insulin production and a persistent rise in the requirement for insulin injections. No significant side effects were found as a result of injecting DiaPep277.

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### ***Coaxing Brain Cells to Grow***

Benjamin Reubinoff of Hadassah University Hospital in Jerusalem, along with a scientific team in America, reported success at coaxing stem cells taken from human embryos, up to a week old, to develop into three different types of brain cells. The cells were transplanted into the brains of mice and began functioning. It is believed that, in the future, this method could be utilized to treat central nervous system disorders such as Parkinson's Disease. (IHTIR has recently reported about Israel having four lines of stem cells, which were approved, by the US government for research and development funding.)

### ***Biosensor Developed to Monitor Water Supplies for Presence of Chemicals***

A biosensor that could be applied to detecting chemical warfare agents and other toxins in public water supplies, has been developed by Dr. Robert Marks and at Ben-Gurion University's Institute for Applied Biosciences. It has been developed together with researchers from the Faculty of Engineering Sciences and the Department of Biotechnology Engineering.

The bioluminescent optical-fiber probe for safeguarding water supplies uses whole bacterial cells that have been genetically engineered to react to toxins, such as pesticides. However, it could also have applications monitoring chemo- and biotoxins used in nonconventional weaponry. Dr. Marks will pursue this line of research in collaboration with Dr. Orly Yadid-Pecht, Head, VLSI laboratory, Israel, National Center for Complementary Metal-Oxide Semiconductor Research. The goal is to create chip sensors.

Current testing procedures for identifying the presence of chemicals in water require sophisticated instrumentation. In contrast to Dr. Marks' system, they cannot supply biotoxicity information without using fish or bacteria and require to be conducted in laboratories with expensive testing equipment. Marks' device is a self-contained system to which nothing needs to be added beyond the dip-stick-like probe itself. The specially modified bacteria are genetically engineered to produce light when exposed to chemicals that damage their genetic material (genotoxins). The bacteria are gel-coated onto one end of an exposed optical fiber, forming a sensitive chemical detector. When this bioprobe is inserted into a water sample, any genotoxins present in the water column will cause the bacteria to glow. The light transmitted along the optical

fiber is then measured by a sensitive photodetector.

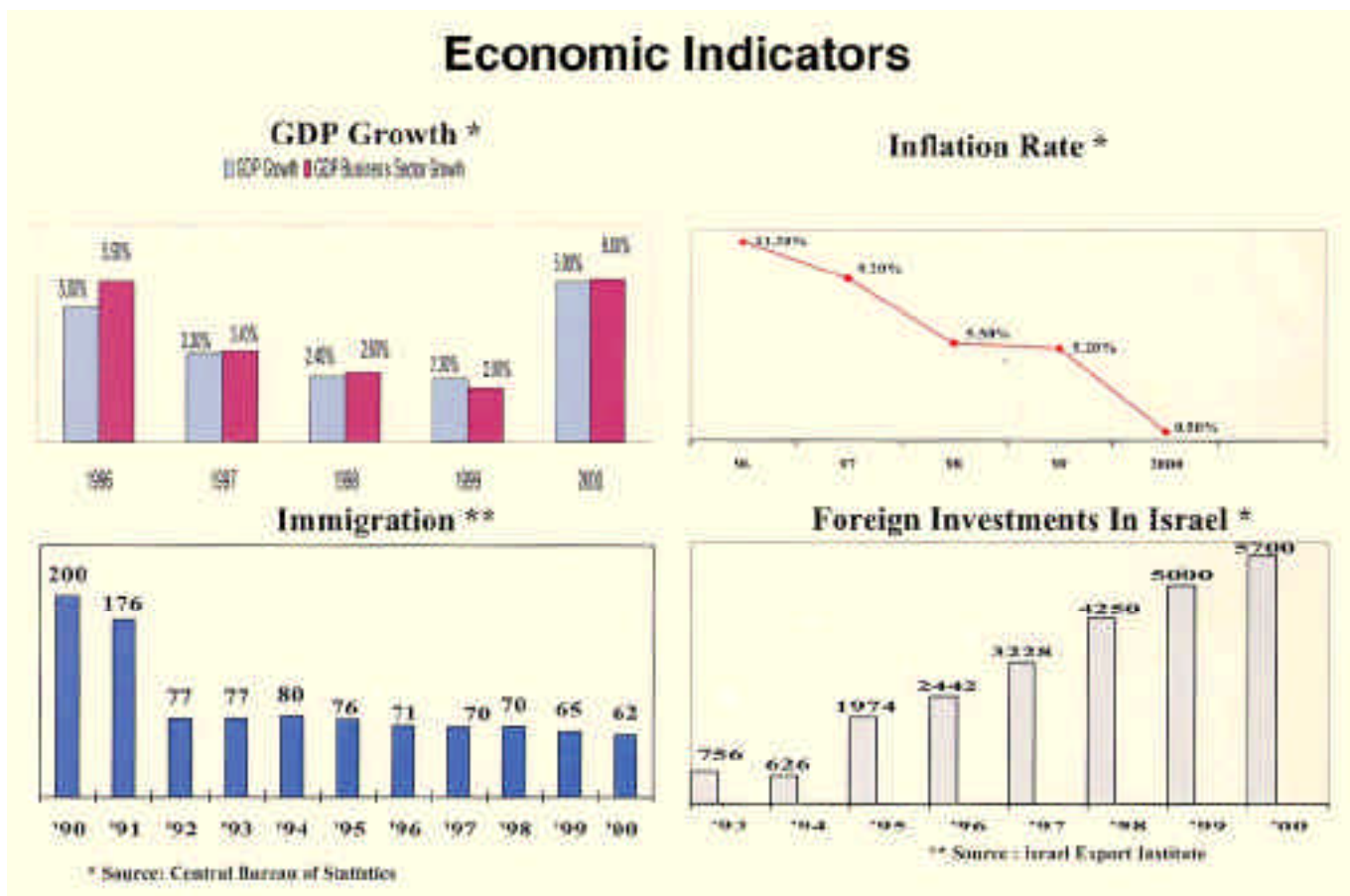
Recently, Dr. Mark was invited to the USA to demonstrate his easy-to-use, portable biosensor at the Meadowlands Environmental Research Institute (MERI). MERI offers a scientific collaboration between the New Jersey Meadowlands Commission and Rutgers University Center for Information Management, Integration and Connectivity (CIMIC). The Institute brings together leading environmental scientists to identify and use the latest technologies to monitor, protect and improve the environment of the Meadowlands District.

"Every water board in every state in America can take advantage of this technology," says Marks. "You don't have to bring water to a centralized lab for testing, because this system allows for on-site monitoring of water. A technician can test waters in a lake and then transmit the results to a central laboratory, while continuing with tests around the lake. Each test takes about 60-90 minutes. If the central lab finds a high level of biotoxicity, the technician can return to the spot that very same day, repeat that test, as well as additional ones."

Dr/ Marks is developing other fiber probes that can ascertain the presence of mercury, cadmium or other contaminants. Chemical and biological attacks on water supplies are of increasing concern. He calls the possibility "very frightening," and believes the new probe could be a vital tool for detecting chemical and biological assaults on water supplies in Israel and the rest of the world.

### ***CIBC Conference Report***

The highlight of the 6th annual CIBC World Markets Israeli Equities Conference, was the luncheon presentation by Jaime Robertson-Lavalle, Intel's Director of Strategic Investments. Intel, he explained, uses VC as a strategic tool to accelerate the growth of its core business over the long term. By way of contrast, Robertson-Lavalle observed that many corporate investors had entered VC late in the game on a less strategic, more opportunistic basis. With the recent contraction, these corporations now found themselves exiting the industry with bruises. Lucent, Dell and AMCC have recently closed their venture divisions. Commenting on the Israeli investment landscape, Robertson-Lavalle sees hard, ROI-driven decisions being made by VCs regarding which portfolio companies will receive follow-on investments, and which will close their doors. He observed that



valuations and the amounts being invested had returned to historical levels, and that the preferable investment stage, had moved back to the revenue and growth stages. Due to the lack of exits, greater perceived risks, and pressure on VCs to deliver ROIs, enabling them to return to their investors in the future, many were returning to their money management roots, via investments in publicly traded companies. Robertson-Lavale also noted the steady growth of the life sciences sector.

*Dr. Elliot Balaban participated in the recently held CIBC Conference in NYC and filed the above report.*

### **Central Bureau of Statistics (CBS): Economy Slowed Further in September-October**

The Central Bureau of Statistics has announced further slowdown in business activity in September-October, including stagnation in retail sales and additional declines in the export of goods and import of raw materials. However, there was also a probable temporary moderation

in the decline of industrial output and the exports of goods, as compared with the beginning of the year.

According to leading indicators, economic activity continues to shrink as the recession deepens. All the indicators point to negligible growth of only 0-0.5% for 2001.

Exports, (excluding diamonds and exports to the Palestinian territories) fell 3% in October, after falling 9% in September. The figures do not include the decrease in exports of \$1.0 billion, to the Palestinian Authority.

Exports by advanced technology sectors (electronics, avionics and pharmaceuticals) and mixed technology sectors (machinery, electrical equipment and vehicles) fell by a sharp, annualized 6-8%.

Tourism revenues continued to fall. They have declined by more than \$1 billion since the beginning of the year.

Industrial output fell an annualized 2% in September, after falling 5-11% a month over the preceding ten months. Especially sharp falls were posted by the

high-tech sectors, compared with a negligible increase of activity in traditional industries.

Imports of goods excluding diamonds and fuel fell 7% in October, after falling 7-11% a month in February-September. Imports of raw materials, excluding diamonds, fell 6% in October, after plunging 13% in September.

Imports of investment goods for plants (machinery, equipment, and land vehicles) shrank 11% in October, after falling 13% in the August-September period.

Retail sales stagnated, after falling 3% a month in May-August. Sales by marketing chains rose an annualized 3%, due to traditional shopping for the High Holidays. However, business revenue (excluding banks) fell 2% in September, after falling 4-8% a month since the beginning of 2000.

The annual inflation rate stabilized at 2.2%, lower than the 2.5% Government's inflation target. Basic inflation (excluding housing, fruits and vegetables) is also 2.2%. The general index, excluding housing, was only 1.1%, calculated annually.

Unemployment surged to 9.3%, without an increase in the number of persons employed.

The Israeli Government is debating the 2002 Budget tabled by the Minister of Finance and aimed at restoring economic growth. The proposed budget includes a NIS 6.3 billion cut in spending.

### ***Computerworld Selects Mellanox as One of Top 100 Emerging Companies***

Mellanox Technologies, Ltd., an Israeli fabless semiconductor producer, announced its selection by Computerworld Magazine as one of the Top 100 Emerging Companies for 2002. Mellanox, a provider of switches, host channel adapters, and target channel adapters was recognized for making significant innovative contributions to the IT industry and corporate computing and as "a company worth watching in the year ahead". Computerworld selected Mellanox on the basis of product innovation, financial stability, managerial excellence, and the solving of real problems facing IT managers.

### ***Decell Cited for its Route Guidance for Commuters***

A jury composed of leading figures from IT, e-commerce, telecommunications, management consultancy and business schools, awarded Israeli

start-up company Decell third place, in the Wall Street Journal Business Innovation Awards for "inventions, products, services or business methods that improve the quality of life or enhance productivity."

Decell has developed a system enabling cellular phone service providers, to deliver real-time route guidance to commuting subscribers. The system can analyze data from mobile phones in moving vehicles in order to configure a traffic map, and eliminates the need for expensive motion sensors or surveillance cameras.

At present, the company's system here in Israel is capable of mapping traffic flow on all main roads from Gadera to Haifa.

Founded in 2000, the Tel Aviv company is conducting advanced system trials with mobile communications provider Pelephone, and has already signed a distribution agreement with one of the largest European infrastructure and consultancy firms.

### ***Early Warning System for Detecting Explosives***

The system, called "Mini-Nose for Detection", was developed in Ness Ziona, with a joint grant from the US Department of Defense and Rafael Israel's Defense Armaments Research and Development Authority. The General Security Services, which is responsible for Israeli aviation security around the world, and the Negev Nuclear Research Center at Dimona, serve as consultants for the project.

The Mini-Nose was developed by MS-Tech, which was founded and managed by Moshe Shalom, a former employee in the local defense establishment. The company's 13-man development team includes, scientists who recently immigrated from the CIS, some of whom have backgrounds in space-related fields. The chief scientific officer is Lev Dayan, and the VP of Business Development is Reuven Paz.

Work on the system began three years ago. The system can detect explosives from a distance, without having to touch the object, unlike other systems that must make direct contact with the suspicious object in order to collect potentially explosive particles. The system can both detect the presence of explosives and determine their type.

Mini-Nose is the size of a cellular telephone, weighing only 250-300 grams. The international market price is \$8,000, substantially cheaper than

stationary systems. In another configuration, the Mini-Nose can be installed on a security. At \$50,000 an installation, the company calls its system highly cost effective when compared with existing systems priced at \$150,000. The US Federal Aviation Authority (FAA) is expected to approve the system by June 2002, the scheduled date for the presentation of the operational model.

Moshe Shalom estimates the total cost of the project from development to marketing will be \$4 million. In August 2001, the Pentagon approved the system in principle, after viewing a demonstration of the system in Washington. MS-Tech is currently in negotiations to acquire a strategic partner.

### ***How to Prevent Unauthorized Use of Aircraft***

Magal Security Systems, Ltd. (NASDAQ NM: MAGS; TASE: MAGS), announced the launching of a new product, named Jet Lock(TM), which is a unique development of an aircraft wheel lock designed to prevent and detect unauthorized movement of airplanes on the ground.

Magal Security Systems Ltd. is engaged in the development, manufacturing and marketing of computerized security systems, which automatically detect, locate and identify the nature of unauthorized intrusions.

Jet Lock was developed to meet the increasing threat of unauthorized use of aircraft in mass destruction terror attacks. The lock, based on a high tech electronic locking system and wireless alarm, combined with rigid reliable mechanics, completely immobilizes an aircraft. Any attempt to cut, to break in, or to move the aircraft for more than 50 meters from its original location will set off an alarm in the control center and will identify the exact location of the airplane. The product utilizes unique secured digital signatures that ensure that it can be unlocked only by an authorized person.

Jet Lock was tested successfully in Israel and can be used on a wide range of aircraft, from small to large airplanes.

The target market for Jet Lock includes airports, airlines, landing strips, flight schools, companies or owners of airplanes who want to keep them safe on the ground.

Jet Lock was launched during the Third International Aviation Security Technology Symposium in Atlantic City, N.J., organized by the U.S. Federal Aviation Administration (FAA).

Mr. Even-Ezra, Chairman of Magal said, "Due to the recent events in which hijacked aircraft were used as weapons, heightened concerns that small aircraft may likewise be used for terrorist attacks." The prevention of the unauthorized use of aircraft has lately attained a new level of urgency.

### ***TASE Launches Euro-Shekel Contracts***

The Tel-Aviv Stock Exchange announced the launch of options and futures contracts on the Shekel-Euro exchange rate.

"The TASE decided to launch the new product because institutional and retail investors have expressed strong interest in purchasing an efficient and low-cost hedge against fluctuations of the Euro against the shekel," according to Mr. Dror Shalit, TASE's SVP for trading and clearing.

The Euro derivatives join the TASE's active market for shekel-dollar options. In October, the daily trading volume of the dollar options on the Tel Aviv Exchange averaged 32,000 options; in September daily volume averaged 46,000 options. The record daily volume for the dollar options, 83,000, was set on September 11. The value of a Shekel-dollar option is \$10,000.

Barry Topf, director of the Foreign-Exchange Department at the Bank of Israel, said at the conference, that 22% of the State of Israel's foreign trade in 2000 was conducted in the Euro. About 13% of the currency conversions in Israel were conducted in currencies other than dollars. The Bank of Israel estimates that the majority of those conversions were conducted in Euro. Topf added that derivatives trading also would help strengthen the local currency market. Dr. Eyal Inbar, Economic Officer in the European Commission Delegation to Israel, said that about 41% of the total imports into Israel originate in the European Union countries and that the EU receives some 32% of Israel's exports.

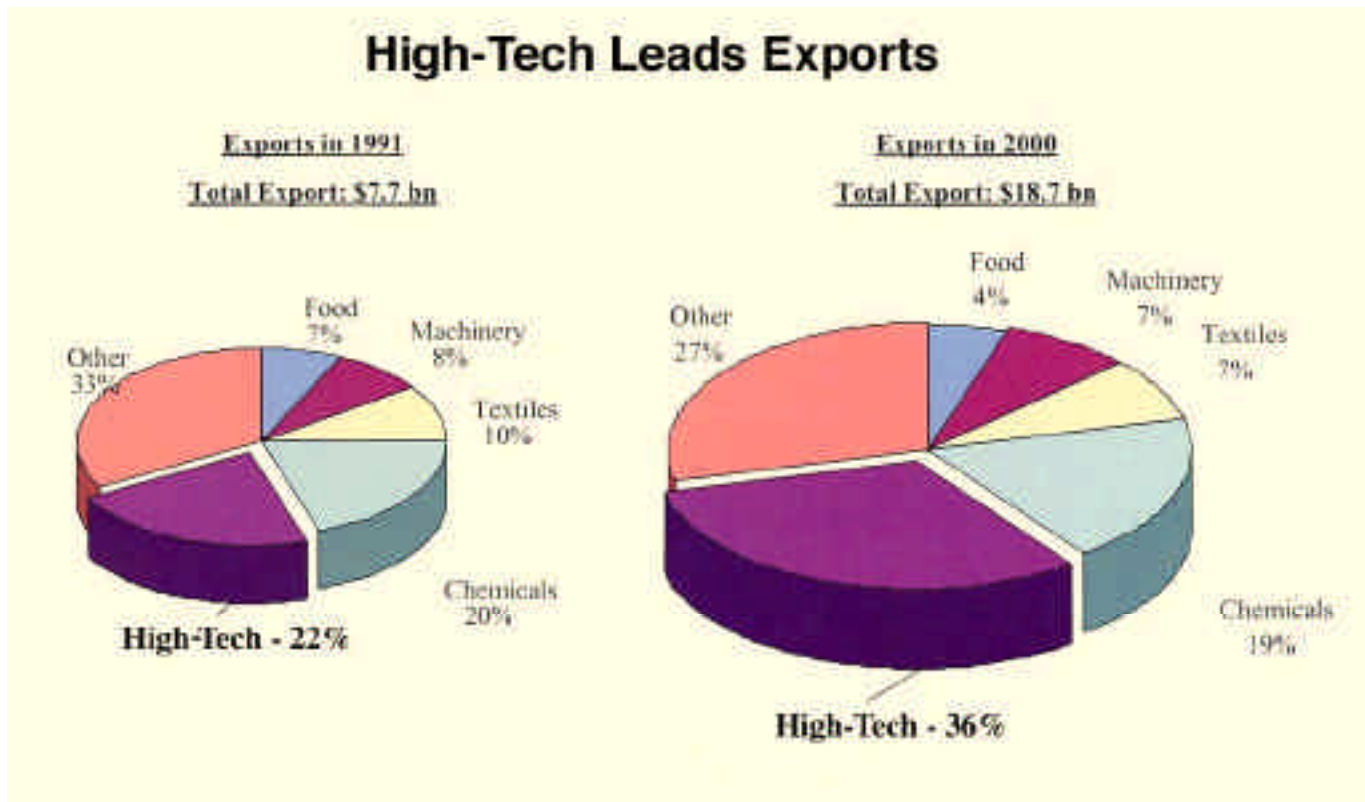
Inbar believes that proper preparation will help Israel to contend with the "Euro challenge" and to transform the introduction of the new European currency into an engine for success.

## **Medical Devices**

### ***Oridion Obtains FDA Clearance for its Monitoring Device***

Oridion Systems Ltd. (ORIDN on SWX New Market), announced that it has received 510(k) clearance from





the U.S. Food and Drug Administration (FDA) for a monitoring device for non-intubated patients, the Smart CapnoLine O2, that measures carbon dioxide samples of exhaled air with unprecedented accuracy. This next generation capnography device helps to alert careproviders, to the earliest possible warning signs of potentially fatal adverse events that can develop during procedural sedation.

During sedation, new standards from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), the American Society of Anesthesiologists and the American Heart Association, all call for monitoring ventilation such as with capnography, which is the continuous and non-invasive measurement of carbon dioxide in exhaled human breath.

Oridion's Smart CapnoLine O2 allows physicians to comply with these standards. It collects breath samples for CO2 analysis from both nose and mouth, while also supplying oxygen to the patient, using one compact ergonomic nosepiece, molded from exceptionally soft and lightweight plastic. The device is equipped with Oridion's proprietary uni-junction, a single meeting point for nose and mouth breath sample sources. The uni-junction automatically

identifies and selects the nose or mouth breath source providing the highest-pressure sample for a smooth gas flow, then carries the sample back to the monitor for displaying an uninterrupted waveform during sedation.

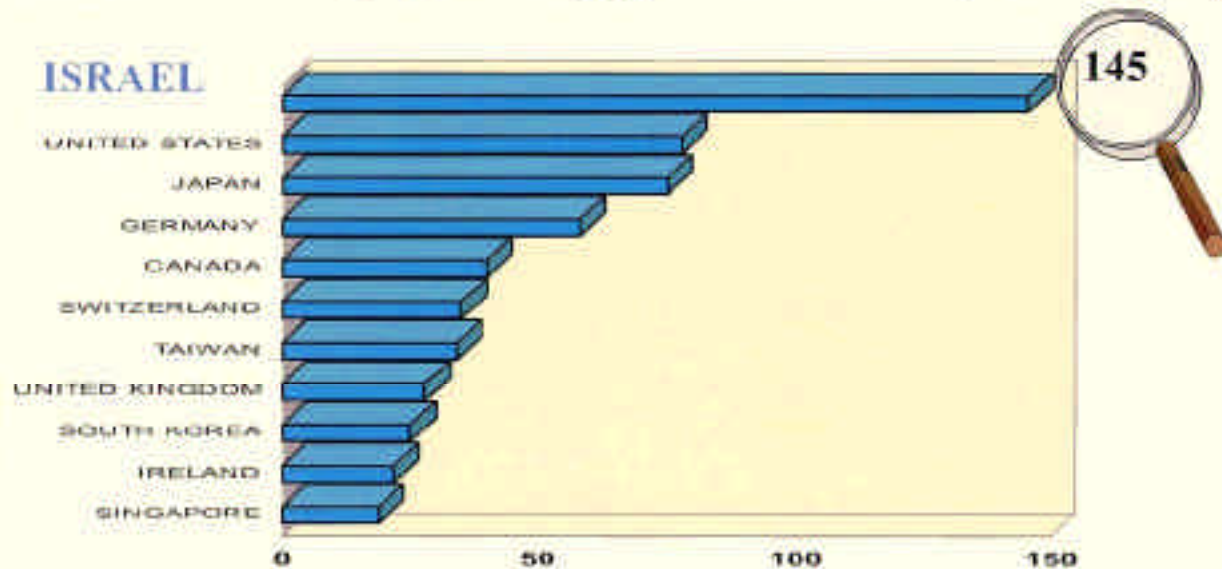
John H. Eichhorn, M.D., Professor and Chairman, Department of Anesthesiology at the University of Mississippi Medical Center said, "This new technology, for the first time, allows continuous and meaningful capnography in sedated patients." Oridion Capnography Inc. is a subsidiary of Oridion Systems Ltd. and operates through its wholly owned subsidiaries in the United States, Europe, Asia Pacific and Israel.

### **Computerized Infertility Test for Men and Women**

A compact computerized diagnostics system has been developed by the Israeli biotechnology company Bioshaf based in Tel Hanan. The one-step automated analysis can carry out up to 25 tests to identify causes of infertility in both men and women within two hours. It can also be used to predict the success of fertilization treatments and to identify causes for early abortions.

## Global Leader in R&D

### Number of employees engaged in R&D/10,000 employees



### FDA Clears NESS Handmaster for US

NESS (Neuromuscular Electrical Stimulation Systems Ltd) announced the Food and Drug Administration's (FDA) 510(k) clearance of their noninvasive, neuro-prosthetic device, the Handmaster. This medical device supplies the stimulus to activate the impaired or paralyzed hand of a person who has suffered a stroke. NESS Handmaster represents a significant and long-awaited technological advance, bringing new hope for a more independent lifestyle to over 1 million disabled stroke survivors, in the U.S. alone. Inside the Handmaster is the NESS patented, integrated surface electrode design. Low-level electronic pulses stimulate the neuromuscular system and activate the muscles of the hand and forearm to restore natural flowing patterns of movement to the hand.

"As a result of many years of research and development, we have been successful in developing the technology to restore the functional use of their plegic or paralyzed hand to persons who have suffered a debilitating stroke. I am thrilled each time I see one of our Handmaster users overcome their disabilities and achieve a better quality of life," stated Roger Nathan Ph.D, NESS vice president of research and development and board member of the International Society of Functional Electrical Stimulation Systems. The Handmaster is designed for simple home usage.

An intensive study was conducted at the University of Maryland-Baltimore to document, statistically and clinically, the functional benefits to individuals that have residual paralysis of the hand following stroke. "The Handmaster showed impressive results with our study group. Within three weeks, all were able to grasp, hold and release objects while using the device and perform tasks they were previously unable to do," stated Dr. Gad Alon, Principle Investigator, University of Maryland School of Medicine. Among activities regained included: the ability to pour and drink from a glass, food preparation, and the return to pleasurable hobbies like gardening and woodworking. NESS has engaged the consulting services of The Lewin Group, a unit of Quintiles Transnational Corp., to initiate Medicare financial reimbursement procedures.

"We expect to have the product available in the US by the second quarter of 2002. In addition to obtaining clearance for the Handmaster for the stroke population, we are also studying the return of hand function in the traumatic brain injury group to go along with this and our previous clearances for use in the spinal cord injured population," added CEO Shmuel Shany. NESS, founded in 1991, maintains international headquarters in Ra'anana, Israel, just north of Tel Aviv. NESS' acronym spells out the Hebrew word for "miracle," and is devoted to creating new and innovative medical devices.



### ***Results Continue to Exceed the Risks***

"Nothing lasts forever, but as long as results exceed risks, we will invest in Israel," said Sequoia Capital partner Mike Moritz at the opening of the Israel Business Conference 2001.

Moritz said that the post-September 11 US needs new technology in software, security equipment, image processing, and other fields. "We now need the best your scientists can offer. If your products solve problems, together we will find a way, to link you with customers in the US," he said.

Moritz spoke warmly about Sequoia's investments in Israel. "We had many opportunities for investments elsewhere. It was tempting to set up an office in Boston or Seattle, but we didn't do it. It was recommended we expand in Europe, Asia and China, and we didn't. The only place where we invested in start-ups, other than Silicon Valley, was in Israel which is the birthplace of a surprising number of important technologies. It's the only place that has a climate of innovation similar to ours. We admire the determination and energy we see among the Israeli entrepreneurs. To start a technology company is a very tough challenge, that's now only possible in two places in the world: Silicon Valley and Israel," he said.

### ***MIT Chief Scientist Announces Tender for Biotechnology Incubator***

The Chief Scientist of the Ministry of Industry and Trade Dr. Carmel Vernia, stated his intention to set up two biotechnology incubators under the aegis of the Ministry. The winner of the tender is required to commit himself to operate the incubator for six years, assure managerial and scientific capability and provide \$20 million in equity. Another condition is that all projects accepted into the incubator will be allowed to remain for three years, during which they will. During this time each project will receive up to \$1.8 million in financing, while being in the incubator.

The setting up of biotechnology incubators was decided in keeping with the recommendations of a consulting company which advised the ministries on how best to exploit the industrial potential created by the advanced know-how Israel has in this field.

The biotechnology incubators will be operated according to the technology incubator model, under which the incubators are to be privatized as conditions allow. The Ministry of Industry and Trade plans to privatize the 24 technology incubators and guide them into profitability. "The local biotechnology industry has the potential to

reach \$3 billion-\$4b. in sales within the next five to seven years," stated Prof. Haim Aviv at the bi-annual board of governors meeting of the Israel-US Binational Industrial and Research Development Foundation (BIRD) which took place recently in Jerusalem.

However, he stipulated that the stipulated increase in growth from the current \$800m. in annual sales, would require intensive investment by both public and private funds in the order of \$3 -\$4 billion.

Prof. Aviv confirmed the statistics published in the December issue of the Israel High Tech and Investment Report, under the heading "Israel's Biotech Industry at a Glance."

Currently, there are some 160 biotechnology companies in Israel, employing 4,000 people. In 1990 there was only a fraction of these numbers, a mere 30 companies employing 600 people, with sales of \$50m. Aviv said that Israel had become a center for biotechnology due to a combination of motivated people, the good level of science, an international orientation and a critical mass of companies involved in the field.

However, current limiting factors include the lack of financial resources, the dearth of managerial skill and experience compounded by political and geographic conditions. Prof. Aviv hopes that the biotechnology sector would produce original drugs that are developed in Israel.

Dov Hershberg, executive director of the BIRD Foundation, said that although life sciences traditionally account for some 40% of all projects, at the board's meeting only three of the 12 projects approved happened to be in this field. "In the last three years we have emphasized on life sciences, especially those involved in developing riskier technologies," he told reporters. All grants are extended to US-Israeli joint venture projects, which can receive up to 50% of their funding from BIRD.

Grants typically range in the \$1m. area, based on an annual budget of \$14-\$15m. The grants are one-off but are aimed at projects ranging from one to three years, which must be focused on at developing a product, rather than concentrating on academic research. Depending on when the grant is repaid, BIRD typically receives between 100% to 150% royalty payments, based on the amount of the original grant. "We are receiving an increased number of applications, as money is more expensive and fewer alternatives available" he said.

***New Applications for the Active Ingredient of Copaxone***

Teva Pharmaceutical Industries Ltd. (Nasdaq: TEVA), announced that Teva and Proneuron Biotechnologies Inc., entered into a strategic alliance agreement that includes the potential development and exclusive commercialization of glatiramer acetate for diseases which may be treatable with a neuroprotective agent. These include Alzheimer's Disease, stroke, brain trauma, glaucoma, Parkinson's Disease, peripheral neuropathy, and others. Glatiramer acetate is currently marketed by Teva in the USA, Europe and Israel under the trademark Copaxone for the treatment of Multiple Sclerosis.

Under the agreement, Teva will fund the pre-clinical and clinical development for the indications chosen and will pay Proneuron in accordance with agreed upon milestones and royalties on sales of all commercialized indications. Teva has made a \$10 million equity investment in Proneuron.

The discovery that glatiramer acetate may be an effective neuroprotective agent was made by Professor Michal Schwartz and fellow scientists at the Weizmann Institute and was exclusively licensed to Proneuron Israeli Teva Pharmaceutical Industries Ltd., is among the top 40 pharmaceutical companies in the world. Over 80% of Teva's sales are in North America and Europe. The company develops, manufactures and markets generic and branded human pharmaceuticals and active pharmaceutical ingredients.

***Overheard at the Go4Europe Conference***

Towards the end of November, the Fourth European Conference of Cukierman & Co. Investment House, entitled, "Go 4 Europe," was held successfully at Tel Aviv's sea-side Hilton Hotel. The attendance included a surprisingly high number of over-seas visitors, estimated by the sponsors to be about 600. The total included around 60 - 70 foreign investors from France, UK, USA, Singapore, and Germany.

Prime Minister Ariel Sharon delivered opening remarks and discovered that two panelists are sons of former Prime Ministers of Israel. One is Mr. Chemi Peres, managing director of Pitango Venture Capital. Mr. Henry Peres is the son of Israel's Foreign Minister Shimon Peres. The other Mr. Yair Shamir, is the son of Yitzhak Shamir, also a former Prime Minister of Israel.

Mr. Sharon pointed out in late September 2001, that his Government announced far-reaching tax exemptions

for foreign investors in Israeli venture capital funds. During the frothy days of stock market exuberance, few paid attention to Israel's discriminatory taxation policy. "My goal is to provide free-of-tax status for Israeli investors and local venture capital funds," promised Mr. Sharon. He also mentioned forthcoming changes in the laws of Research and Development expenditures, as well as massive funding for promoting Israel's biotechnology sector. The plan is to have the Government provide \$450m in funding for the country's biotechnology's sector.

Yehuda Levy, of HSBC, an international banking group, pointed out that 50% of Israel's GDP was accounted for by the activities of the high-tech sector. He predicted that, as a result of the global downward cycle in high-tech companies, even risk-adjusted credit pricing to these companies will add to the cost of credit.

If confirmation was at all needed as to the difficulties facing the high-tech companies obtaining in raising finance, "The capital market is closed," unequivocally stated Mr. Chemi Peres. However, he characterized current conditions as being cyclical. On a more upbeat note, he stated that, "These are great times to invest." Pitango Venture Capital, according to Mr. Peres in the first eleven months of the current year, has made eleven new investments.

He was less optimistic about the survival rate of Israeli venture capital funds. On the one hand, there is the group which has almost finished investing its funds but is unable to raise additional funds. The second group, which he pointed to as being much better positioned, are those who have completed raising funds and have not invested them as yet. "If revenue is King, then Cash is God," said Mr. Peres.

***Sensitivity to Political Trends, Swings in Sentiment and Share Performance in Europe***

Currently 32 Israeli companies that have raised capital on European markets have their shares traded on these European Stock Exchanges. With the exception of four, these companies fall into the category of being high technology, or high technology related.

Edouard Cukierman, founder of the investment banking firm Cukierman & Co., is a major booster of opportunities for Israeli companies in Europe. Characteristically, he named the recent conference: "Go 4 Europe". Cukierman & Co and the Catalyst Investment LP, have been responsible, more than any other Israeli venture capital group, for bringing Israeli companies to Europe. The field is wide open they

claim, but it will undoubtedly take years before the level of European listings begin to catch up with the number of Israeli Companies on Wall Street, now exceeding 125. The performance of Israeli companies on global markets, in the past has resulted in investor returns that exceeded benchmark indices both on the up-and-down side. Our own *Israel High-Tech Model Portfolio*, was cashed out on November 20, 1999. The original investment of \$246,850 as of January 1999 had grown by 175% to \$678,540, in less than two years. [IHTIR Dec. 2001 vol.XVII issue No. 1] This performance bested many of the top high-growth American or off-shore mutual funds.

In spite of premonitions and anticipation that 2001 would be a poor year for high-tech, we formed a new model portfolio on January 2, 2001 and named it the Israel High-Tech Model Millennium Portfolio. As of December 12 the portfolio had lost 38.3 % of its value while the NASDAQ 100, a benchmark index of the top US high-tech companies is down by 29%.

When we recently attended the "Go 4 Europe" held in Tel-Aviv we heard from Mr. Yair Shamir, Chairman of Catalyst Investments LP, one of the organizers of the conference, that shares of companies traded on the European Stock Exchanges had lost about 24% of their value, while the shares of Israeli companies traded on these markets had fallen by 47%. Both Mr. Shamir and one other speaker, blamed Europeans' sensitivity to the political situation as being the key factor in the apparent

downside discount accorded to Israeli companies. However, Frances Bornstein, Vice KPresident and Deputy Head of the SWX New Market disagrees. She points out " that the Swiss market looks for quality" and that the European markets are not as sensitive to the Israeli political scene as had been suggested by panelists at the conference. CardGard and Shahal, two quality Israeli companies floated and traded on the Swiss Exchanges, have not fared too well this year. Shahal held a successful IPO a year ago, and its shares rose 22% on the first day of trading.

Overall this year the Shahal shares are down by more than 50%. Card Gard, a premium and highly profitable Israeli company, in spite of the price of its shares establishing a record performance in 2000 . However, in the first year after its IPO the shares are down by nearly 40% in 2001. Irregardless of the basic issues of maintaining an Israeli registration, the fact is that Card Gard announced a decision to move its home from Israel to Switzerland. This also says a lot about what perceptions managements wish to project to the investment world.

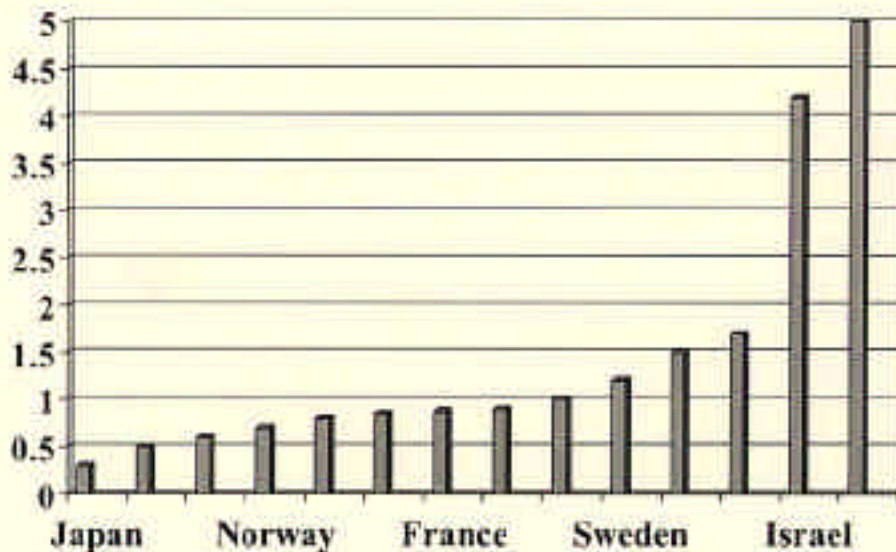
Since Israeli shares, have been excessively pressured lower, whether due to negative European sentiment or apathy towards high-tech, it may be a good idea to re examine the Israeli shares as prospects for a major rebound, as world markets recover. The current positive change in European attitudes towards Israel can also add to their investment appeal.

**IDG Ventures Europe Launches Israel Operations**

IDG Ventures Europe, which is part of the international media concern IDG (International Data Group), announced today that its UK-based venture capital fund had begun operations in Israel.

The European fund, which has initial investment funds of \$100 million, says it has plans to make

**Venture Capital Invested as a Percentage of GDP 2000**



joint investments in Israeli start-ups, together with Israeli venture capital funds.

IDG Ventures Europe's agent for Israeli companies and venture capital funds, will be Nisso Cohen, who also serves as chairman of the Koteret Group and country manager for IDC Israel (IDG's research arm).

IDG Ventures Europe stated it invests about \$4 million, on average, in each of its portfolio companies and specializes in investments in technology companies active in the fields of networking, wireless applications, B2B and B2C software and services, new media, advertising technologies and the Internet. IDG Ventures Europe says it will give preference to Israeli technology companies with headquarters in the United Kingdom.

IDG is a major global player in the media and research field, with annual revenues of over \$3 billion. Over the last few years, IDG has established several venture capital funds and currently has \$580 million under management worldwide. The first funds were set up at the beginning of the 1990s to finance technology investments in China (\$200 million).

### ***Venture Capital Shortage Could Close 300 Companies***

"There is a shortage of capital for investment. As a result, many young companies are likely to close down," stated Zeev Holtzman, founder of the Giza Group, at a recent business conference held in Tel Aviv. According to Holtzman, 900 companies in which venture capital funds invested are now active, but about one third will probably close for lack of capital.

The amount of funds held by venture capital companies and available for investments, according to Holtzman, is insufficient to satisfy the needs of start-up and portfolio companies.

According to his estimates, 15 Israeli venture fund companies account for 80% of VC activity. Consequently, many of the others will have no choice but to close down.

## ***Dow Jones Newswire Interview***

The following appeared in a recent Dow Jones Newswire article---the direction of the movement of the unusually strong Israeli Shekel is likely to have an important impact on the course that Israel's economy will follow in the months to follow:

Part of the interview by Jennifer Downey of Dow Jones follows:

"Companies are actually being harmed by a general propensity among Israelis to stay in the shekel instead of expanding into assets denominated in other currencies, said Joseph Morgenstern, consultant and publisher of the Israel High-Tech & Investment Report. Israel's key lending rate is 5.8%, over four hundred basis points higher than the current U.S. federal funds rate. Rates offered for bank savings in Israel are around 5.5% and some Israeli government bonds yield a 9.7% tax-free return, Morgenstern said, providing strong reinforcement for citizens to keep their money in shekels.

This leads to "what's euphemistically called a mountain of shekels," which sounds positive but is dangerous for Israeli companies which are already suffering from the global economic slowdown, he said.

A high-priced shekel reduces the competitiveness of Israeli exports. The problem is exacerbated because a large amount of Israel's exports are in the high-tech sector, which has struggled after the collapse of the late 1990s bubble economy. In return, imports are cheaper, further reducing the domestic market for Israeli goods.

Far from fearing that political consequences will take a toll on the shekel, Morgenstern would welcome a decline in the shekel's exchange rate in order to stave off dire economic consequences.

"I think a country of six million people has to maximize the return on its exports. It needs to have a rational exchange rate," Morgenstern said."