ISRAEL HIGH-TECH
& INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES **JOSEPH MORGENSTERN, PUBLISHER**
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"Reflections Ahead of 5765"

The coming of the Jewish New Year, according to ancient tradition is a time for reflection.
In the year ahead we look forward to the much-heralded Israeli withdrawal from Gaza. Significantly most of Israel's population is looking forward to the event.

The so-called Separation Fence is being constructed and its course is being adjusted by Israel's Supreme Court so as to minimize the discomfort to the Palestinian population.
The fence has come under fierce criticism by the European Union. It has even voted against it in the United Nations. However, it should be noted that the European Union is planning a separation fence of its own. The EU plans to build a fence to separate its new members - Poland and Hungary - from their new neighbors - Russia, Belarus and Ukraine - to prevent the free movement of migrants seeking to enter the EU. The irony of the situation is, that several Israeli companies will participate in the tender for erecting the fence.

Previously the European Union has funded a fence to. keep Moroccans from entering the` coastal city of Ceuta, just across the Straits of Gibraltar opposite from Spain. With the fence in place they will be unable to work anywhere in Europe because of the EU's no-checkpoints policy.

The issues of Peace for Israel and Peace for the region will continue to be debated, argued and undoubtedly, if required, fought for. Peace is as elementary to Israel's very being as the Bill of Rights is for the Americans and the right of free speech to the British. So with the New Year, we hope for a further move towards Peace for Israel and the Middle East.

There is an aura of new energies emanating from the Israeli high-tech sector. Most impressive has been the high rate of growth of newly formed jobs, up by more than 100% year-to-year. Felix Zandman, chairman of US Vishay Intertechnology, a Fortune 500 company, said that the most important issue of the 21st century is employment. Zandman, head of the global enterprise, is short on pontification and long on action. He founded Vishay Israel, a company active in electronics. The company has grown steadily

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Editorial Offices: P.O.Box 33633, Tel- Aviv 61336, Israel Tel-: +972-3-5235279 Fax: +972-3-5227799 E-mail: htir_1@netvision.net.il

and is now Israel's 11th largest industrial company. We concur with Dr. Zandman's observations.

Next to employment, the most important ingredient needed to maintain a thriving high-tech sector, is capital. Without it, startups cannot function and mature companies cannot expand. The recently published surveys on Israel's venture capital trends, indicate an expansion of capital being raised and more funds are being made available to high-tech industries. In the year ahead observers are projecting that the venture capital industry will invest more than $1.0 billion. Israeli startups have already garnered more than $600m. in the first half of 2004. The expectation is for the Israeli economy to grow between 2.7%-3.8%. Foreign investors have noted the improvement in Israel's economy and new investment funds are flowing into the country.

We at IHTIR try to identify the emergence of new trends, as early as possible. Investors, can appreciate the need for identifying new trends so as to be in on the ground floor.

Two areas currently experiencing booming growth are military systems and homeland security. Israel accounts for 12% of the world's military and security exports. IDF reserve Major General Joseph Ben-Hanah, head of the Defense Ministry's department for security exports, says that some of the most successful export items include pilotless planes, anti-tank missiles, night-vision equipment, radar and the upgrading of planes, helicopters and tanks. You will be surprised to read about an Israeli X-Ray system being used on the private jet of King Fahd. The system bypasses the need for film and chemicals and its main application is in field hospitals.

However, this is just the tip of the iceberg, as in this issue you will read about other companies that are developing a variety of products that match the needs of home security and defense.

Not too many years ago, Israel's defense products were sold as "proved in battle". Today the motto is "proved under security conditions".

Observation balloons, explosive detectors, sensors that can see through smoke and drones are just a few of the products being sought by buyers. This is the beginning of a longer-term trend, as terrorism will haunt us in the indeterminate future.

It is our hope that this will be the year that the extra step "for the sake of peace" will be taken.

And so to all of our Jewish friends and subscribers we extend our best wishes for a Happy and Healthy New Year.

Alfred E. Mann Invests $2.0m. in Teuza

Venture capital fund Teuza Ltd (TUZA:-TASE) a Fairchild Technology Venture, reports a steadily rising influx of new investors. The fund reported to the Tel Aviv Stock Exchange (TASE) the sale of a 9.7% share to Jewish-American billionaire Alfred E. Mann for NIS 9.1 million ($2 million) at a price that was slightly below the stock market valuation.

Alfred E. Mann, who heads the Mann group of companies, is a serial entrepreneur who developed a range of medical technologies, and is considered as one of the outstanding figures in the medical equipment field.

Mann recently announced his intention to commit $100 million to the American Technion Society (ATS), and establish the Alfred Mann Institute (AMI), for Biomedical Engineering at the Technion-Israel Institute of Technology.

Mann and Neuromuscular Electrical Stimulation Systems Ltd. (NESS) announced the establishment of a joint venture to market the NESS Handmaster system in the US.

The deal included a $4 million cash injection to NESS from the Mann group, in return for a 65% stake in the joint venture. NESS will hold the remaining 35%.

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Graphics Consultant
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Subscription Inquiries
Tel-. +972-3-5235279 Fax. +972 3-5227799
E-mail: htir_1@netvision.net.il
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Israel Accounts for 12% of World's Military Exports

Israel military export sales of $2.5b.-$3.5 b. represent a 10%-12% share of the world's military-related production. According to Israel Defense Ministry Director General Amos Yaron total global military sales are estimated at $30b. .

Yaron said that 80% of Israel's military production is

now destined for overseas customers. The Israel Defense Forces was the prime customer in the past, purchasing some 80 to 90% of the local military production. This change in allocation can be attributed to the IDF's reduced demand for locally-produced military products.

Israel also exports "surpluses" of weapons and tanks no longer in IDF service, worth some $125 million annually, Ben-Hanan said.

IAI Sales for First Half of 2004 Increases 14%to $1.034b.

Israel Aircraft Industries (IAI)'s sales for the first half of 2004 totaled $1.034 billion. This compares to $904 million in the same period last year, a favorable increase of 14 percent.

Net profit in the first half of 2004 reached $19 million, as compared with $9 million in the same period last year, an increase of 111 percent.

IAI's backlog of orders by the end of the first half of 2004 reached a total of $5.5 billion, as compared to $4.5 billion by the end of June 2003.

Elta Systems Ltd., a wholly- owned subsidiary of IAI, has accumulated a $2.2 billion backlog of orders for the first half of 2004. Elta's sales for the first half of 2004 reached $262 million, as compared to $237 million in the same period last year, an increase of 11 per cent.

Elta's pre-tax net profit (for the first half of 2004 totaled $15 million, as compared to $13 million in the same period last year, an increase of 15 percent.

Elta, produces the warning systems for the Phalcon project, as well as the "Green Pine" radar system for the "Arrow" anti-ballistic missile, had sales of $262 million in the first half of the year, 11% more than in the first half of 2003. Elta's net profit was $15 million, 15% higher than in the corresponding period last year.

Mr. Moshe Keret, IAI's President & CEO said: that "during the first half of 2004, IAI has returned to a growth track. The company's remarkable backlog of orders, along with imminent substantial new orders assures growth throughout the coming years. The current process is characterized by the expansion of various lines of business such as Airborne Early Warning (AEW) aircraft and Unmanned Aerial Vehicles (UAVs) in the military sector, passenger to freighter aircraft conversions, and the manufacturing of business jets in the commercial sector."

Unmanned Helicopter Reaches Market

A new unmanned surveillance helicopter is available for sale. The Israel-based company Steadicopter Ltd. developed the helicopter, which flies by remote control. The company is based in Kibbutz Kfar Hamaccabi. It will market the helicopter for military and paramilitary applications.

The 1.5-meter (5 feet long), 14-kilogram (30-pound) aircraft works with new navigation technology in which it presets the flight plan before take off.

The cameras can view areas up to 13 kilometers away. The price tag will be about $10,000 to $100,000, depending on the size and the type of equipment configuration, said CEO Gadi Kalisch.

Bergen R/C Helicopters, a Michigan-based firm produciing remote-controlled helicopters provided the technology basis.

The aircraft is described by management as primarily having security applications, though it has the potential for applications such as high-voltage cable inspection and news media photography.

Israel is a world leader in development of pilotless reconnaissance aircraft. Its fixed wing Pioneer drone is in service with U.S. forces in Iraq.

New Israeli Technology Detects Bombs

While security forces have managed to reduce drastically the number of successful terrorist attacks, Israeli companies have developed new technologies to keep the world safer in the age of terrorism.

One Israeli company, International Technologies Lasers (ITL), has received an initial order from Israel's Ministry of Public Security, for a system that can detect the explosives favored by suicide bombers.

The technology, which makes the detection of explosives possible, is called laser spectroscopy and is based on the fact that each material in nature reflects light in a unique way. The system's computers sense the reflected light of various materials and match it with that of various substances, issuing a warning when a match with a dangerous material is identified.
IITL, together with the Israel Police, will jointly develop an operational system based on that technology.

Shielding Homes from Rockets

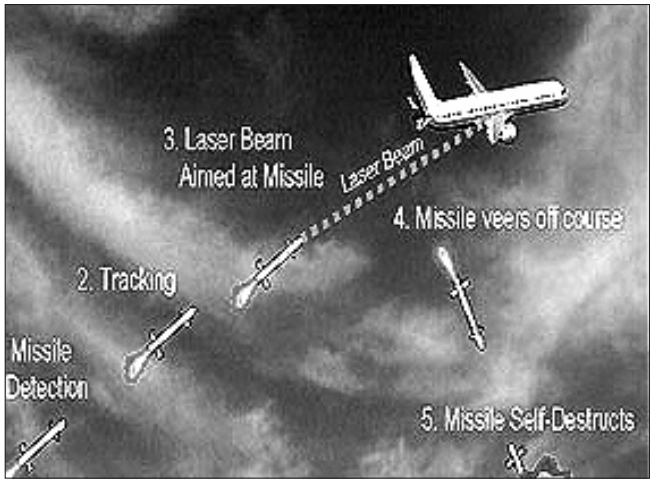
Another Israeli breakthrough in security technology was developed by Achidatex, a company in Upper Nazareth that manufactures bulletproof vests and car armor. This is a wall-covering that can shield a room from rockets and missiles, such as the Hamas-made Qassam rockets fired from Gaza and Hizbullah's long-range missiles deployed on Israel's northern border.
The covering is a special weave of cotton and Kevlar - the material in the manufacturing of bulletproof vests – and can be applied to a structure's interior walls like wallpaper and can be painted over.
In the event of a blast and aftershock caused by an explosion in close proximity, most injuries are caused by collapsed walls and concrete fragments. According to the company website the wall covering – which is available at $40 a meter - "stretches under the impact of the blast, distributing the stresses caused, and prevents the concrete and brick fragments from penetrating into the building's interior, thus shielding and greatly reducing injury to the people within."

Israeli X-Ray System Installed in Saudi King's Jet

An advanced X-Ray system, developed in Israel, has been installed in the private jet of Saudi King Fahd. The system was developed and assembled by Orex, a company from Yokneam and was sold to the Saudis through an American agent.
The innovative Israeli system is based on electronics, lasers, optics and programming. It surpasses the need for film and chemicals to develop medical x-rays and makes it extremely fast for the x-ray to be viewed by the medical eye.
Besides selling a system for the royal jet, Orex units have also been installed in the American holding camp in Guantanamo Bay, Cuba. In addition, Orex announced that its system is being used in field hospitals in Iraq and Afghanistan and that the US Army will soon use the system on all of its navy vessels.
The company's 2003 sales totaled $20 million and are expected to reach $30 million this year.

FlightGuard Anti-Missile System Passes Test

An airborne defense system against ground-to-air missiles aimed at civilian aircraft recently passed a test at Palmahim, on Israsel's Mediterranean shore..
The system, dubbed FlightGuard, is being jointly produced by Israel Aircraft Industries and Israel Military Industries. It is slated to be installed on El Al (TASE: ELAL) passenger jets.
The two companies have sold marketing rights to an American firm, Aviation Protection Systems, which has Israeli and American investors. The company bought two passenger planes earmarked for demonstrations for the Federal Aviation Authority in an effort to win approval for the products.
The recent test was supervised by the air force and involved a Boeing 737 owned by Elta, an IAI company, on which the three main elements of the system were mounted: the radar, a control center and special infrared flares, which are invisible to the naked eye.
The Elta-made radar spotted the Strella SA7 missile



the moment it was launched - though it was a virtual missile launch - and the control system launched the flares. The virtual missiles chased after the flares as they flew away from the plane, which continued on its flight path.
A similar system involving ordinary visible flares has long been used by air forces to protect cargo planes and helicopters, but because ordinary flares cause explosions and bright lights, the FAA is not eager to have them put into use at civilian airports.

The Government's Myopia

Reuters recently quoted a report that worldwide research and development spending in the emerging field of nanotechnology should rise about 10 percent this year to $8.6 billion.
Corporations should spend more than $3.8 billion on nanotechnology, the science of building devices on the molecular or atomic scale, reported Lux Research Inc., a New York-based research and consulting firm focused on nanotech. Venture capital spending on nanotechnology should be about $200 million.
Governments remain the leader in nanotechnology spending with an estimated $4.6 billion in research and development to be spent this year, according to an annual report on the field by the Lux research firm.

Despite a new U.S. law that will inject $3.7 billion into nanotechnology research over the next four years, the private sector should outspend the public sector in the field starting next year, Lux reported.
The growth forecast adds to a heated debate about the potential of nanotechnology, which has been both promoted as the "next big thing" and derided as hype. Environmentalists have even attacked nanotechnology as potentially dangerous, saying it could introduce tiny toxic particles into the air.

Nonetheless, Lux Research said evidence that nanotechnology is a major opportunity for companies and investors is abundantly clear. Top nanotech start-up companies focusing on specialty chemicals, pharmaceuticals and semiconductors are reporting $10 million to $20 million in annual revenue, it said.

Applications such as a "nano-enhanced" coatings to protect ceramic surfaces from stains and scratches are quickly making their way into the marketplace, Lux reported.

In view of the growth in spending in nanotechnology globally it appears that the Government of Israel and the country's universities plan to invest $11.3 million in nanotechnology research in 2004-2005 is an "eyewash". Anyone close to technology companies knows that that $11m. is rarely enough to fund a company to the market.
Furthermore, a five-year plan calls for investing $25-30 million in nanotechnology infrastructure.
If all of the universities were to add nanotechnology courses to their programs of study we seriously doubt that it would cover the cost of lecturers and laboratory equipment. Under the present conditions it will take only a few short years for the Government to discover how far behind the rest of the world Israel has fallen in this field.

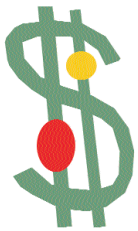
High-Tech Exports up by 17% in First Six Months

"The long crisis in the global high-tech industry has ended. High-tech, Israel included, is growing again," according to Elisha Yanay chairman of the Israel Association of Electronics and Information Industries (IAEI).Yanay predicted that growth would continue throughout 2004, although he was unable to say whether the high growth rate of the first half of 2004 would continue.
Figures compiled by the IAEI show that the trend towards recovery and growth in high-tech exports also continued in the second quarter. Exports grew 17% in January-June 2004, as compared with the corresponding period last year.
Growth was substantial in all sectors. Exports were up 10% in software, security equipment, and medical equipment; 15% in communications equipment and electronic components; and 40% in industrial electronic equipment. A major proportion of these exports was by the semiconductor industry, indicating a worldwide recovery for demand in this market. Yanay believes that if the Israeli high-tech industry continues growing at a similar pace in the second half of this year, exports could approach the record set in 2000.

Venture Capital

MoneyTree: VC-Backed High-Tech Raised $326m. in Q2 2004

The findings of the MoneyTree Survey conducted by Kesselman & Kesselman PricewaterhouseCoopers (PwC) indicate that high-tech companies backed by venture capital funds (where one of the investors in the financing round is a venture capital fund) raised $326 million in the second quarter of 2004, a 28% increase over the previous quarter ($255 million), and a 34% increase as compared to the corresponding quarter in 2003 ($242.6 million).



There was a 14.6% decrease in the number of companies that raised capital, 70 companies in the second quarter as compared to 82 companies in the previous quarter. The average investment in a company during the quarter was $4.65 million, a 52% increase as compared to the previous quarter ($3.1 million).

Computer technology remained attractive for venture capitalists. Software makers saw $1.2 billion in investment for the quarter, spread among 212 companies. Semiconductor investment rose 17 percent to $437 million. Investment in networking rose slightly, while telecommunications investments fell from the previous quarter.

In the first half of 2004, the technology sector raised a total of $661 million, a 37% gain over the capital raised by the sector in the first half of 2003. “The data indicates continued recovery in the sector,” said IVC research director Efrat Zachai. “We expect the scope of financing in 2004 to be 20% higher than in 2003 and to reach $1.2 billion.”

Zeev Holtzman, IVC’s chairman and CEO of venture capital fund Giza, said that more then 15 Israeli venture funds are currently raising money for new funds. He reported that Pitango, which recently raised its fourth fund, has already begun investing, while three or four other management companies are nearing completion of the fund-raising process for new funds and are slated to begin investing in the coming months.

These funds’ successful financing efforts will make $1 billion a year in local equity available for the next several years, Holtzman said.

According to the Marker Israeli startups raised more than $600 million in the first half of 2004, versus $482 million in the same half of 2003, according to a survey by TheMarker and IVC studies of last year.

According to The Marker’s report, in the second quarter Israeli companies raised more than $300 million, while in the first quarter the fund raising was $321 million. At that level the it would reach $1.3 billion in 2004, compared with about a billion dollars in each of the previous two years.

BigBand Networks was a leader. It raised $25 million; The company then acquired the cable division from ADC, turning into Israel’s biggest startup with 350 employees and anticipated annual revenues of about $100 million.

StarHome with a $20 million financing round, followed by Horizon Semiconductors, which secured $16 million, were among firms that raised substantial sums.

During the quarter six Israeli companies were acquired, even though they had not begun to market any product. The six combined were sold for $265 million .

Cisco Systems returned to the Israeli arena in the second quarter, buying Riverhead Networks for $39 million. Cisco subsequently acquired another Actona Technologies for $100 million.

Zoran Corporation (Nasdaq:ZRAN), acquired Emblaze Semiconductor from Emblaze (LSE:BLZ) for $54 million. Mercury Interactive (Nasdaq:MERQ), Israeli too, bought Appilog for $49 million. Magnifire was bought for $29 million. XTend found itself bought by Vyyo (Nasdaq:VYYO) for $20 million and M-Stream was taken over by Broadcom for $10 million.

PowerDsine, which raised $58 million on Nasdaq at a company valuation exceeding $200 million and was the best IPO in the quarter.. It was the first Israeli startup to break the IPO drought of three-years.

Sequel funds did well, too. Pitango secured pledges for $350 million for its fourth venture capital fund. The Dovrat group’s secondary fund, Vintage, scored $65 million. In parallel, Gemini, Giza, Genesis and Concord each raised $150 million. IDB and Infinity

also began raising money for a $75 million investment fund that will focus on China.

Camero Secures $5m. Financing

Camero is developing a portable “through-wall imaging micro-power radar” which will enable rescue forces to operate more effectively in saving lives.
The startup is initially targeting rescue, law enforcement and special forces. Its proprietary technology uses FCC compliant ultra-wideband (UWB) technology to generate a 3D image of objects concealed by solid barriers such as walls.
Camero was founded by Aharon Aharon and Amir Beeri, and has operated as an entrepreneur-in-residence project for one year, at Jerusalem Global Ventures.

Income Tax Exemptions for Foreign Investors in VC Funds

For the first time, the Ministry of Finance income and property tax division has issued rules for granting exemptions on Israeli taxes to foreign investors in venture capital funds. The rules are based on agreements signed in late 2002 between then-Income Tax Commissioner Tali Yaron-Aldar and the Israel Venture Association (IVA).

The core rule stipulates that a tax exemption will be granted to a fund that invests at least 50% of its investment money in "eligible investments" in Israel. In addition, 30% of the investments must be in Israel-based companies with proprietary know-how, or in foreign companies that own Israeli subsidiaries and the latter have proprietary know-how.
The income tax division also ruled that any investment in an Israeli company, or company affiliated with Israel, must be made directly through the fund's permanent office in Israel, and not through its overseas offices.

The rules stipulate that there must be at least ten investors in a fund (there is no restriction on the number of Israeli or foreign investors) and no investor may own more than 20% of the fund.
The rules also stipulate a threshold that all the funds can easily reach: the fund must raise at least $10 million to be eligible for the tax exemption, of which at least $5 million must come from foreign investors. A follow-on fund will be tax exempt if the original fund has met these terms.
The rules further stipulate a mechanism for paying a reduced 25% tax rate on "success commissions" paid to a fund's general partner. These commissions amount to 20% of a fund's profit after repaying investors' investments. The mechanism is intended to ensure that the tax takes into account the ratio between the foreign investment and the Israeli investment in the fund.
The income tax division states a preruling should be obtained for every fund. The guidelines in the rules will henceforth be valid for use as a standard for making a preruling. The rules in the previous operational order from 2001 have been relaxed.

Markstone Raises $500m for New Fund

Markstone Capital Group LLC, has completed the formation of its $500 million fund. Markstone has the option of continuing the investment round until early 2005, and it may go on to raise a few more hundred million dollars in the coming months.
The new Markstone fund will focus on investment mainly in industrial, retail, defense, real estate, banking, media and certain other sectors. The average investment will be $10-25 million, although it may make a major investment of up to 20% of its commitments, in other words, up to $100 million, (assuming that the current fund does not expand beyond $500 million).
The fund's strategic advisory board includes Lehman Brothers vice chairman Harvey Krueger, Invemed Associates chairman Kenneth Langone, who is also one of the founders of the Home Depot, as well as Teva chairman Eli Hurvitz, and United Mizrahi Bank chairman Jacob Perry. Dr. Yaakov Neeman serves as legal advisor to the board. Reportedly, all three Israelis have invested personally in the fund.

Syneron IPO

Syneron, (Nasdaq:ELOS) a maker of laser-based systems for removing hair, wrinkles and other aesthetic blemishes, recently sold 5.5 million shares and raised $66 million, before expenses. The company plans to use the funds for acquisitions and research and development. The company turned a profit of $8.6 million on sales of $35 million in 2003. The shares were priced at $12, at the lower end of pricing and moved lower in market trading.

Technology Brings Mobility to the Immobile

The Israeli company ReWalk has developed a product that restores upright mobility for paraplegics, quadriplegics and others with trouble walking.

The device uses motors and sensors to enable people without the ability to move, or lower limbs to carry out routine motor functions such as standing, walking and climbing stairs.

The ReWalk is a light, wearable brace support suit which comprises DC motors at the joints, rechargeable batteries, an array of sensors and a computer-based control system.

"We aim to end the 200-year monopoly of the wheelchair," says Dr. Amit Goffer, the CEO and founder of Argo Medical Technologies. the company that is developing ReWalk "The device promises to restore the dignity of disabled persons, enabling them to work and improve their general health and quality of life, as well as significantly reduce medical and other related expenses," says Goffer.

The product is still in the prototype stage but Goffer says that upon completion of fund-raising the company could have a product on the market within four years.

Goffer is also the founder of Odin Medical, the developer of a mini-MRI imaging device which enables brain surgeons to conduct real-time brain scans in the operating room.

"Before I came up with the idea for both the mini-MRI and ReWalk, I was puzzled by the question of why each product didn't already exist as each meets such an obvious and extensive need," says Goffer.

There are devices on the market that seek to bring mobility to the immobile, but what makes ReWalk unique is the way in which the user is actively involved in the walk-restoration and other mobility functions. Upper-body motions are analyzed and used to trigger and maintain normal walk patterns and common movements like standing up from the sitting position. "Also, because the ReWalk is snugly fitted on the body and worn underneath the clothing, it also helps the users avoid the type of visible stigma that a wheelchair user faces," says Dr. Goffer.

Advances in Ultrasound Technology for Weight Reduction

Until recently we had not been aware of any other company other than Israel's UltraShape that is active in developing a technology for destroying unwanted human fat with ultrasound. However we came across a story in the American SeattleTimes that described Liposonix, a four year old company, active in "fat-busting ultrasound technology". Perhaps what is more impressive is that the company has succeeded in raising $27m. from venture capital investors. As regards the Israeli startup UltraShape, the last we heard from its founders, was that they had succeeded in raising $2m. and were carrying out porcine trials.

The American novel technique, called SonoSculpt, uses high-intensity ultrasound waves, beamed a little more than an inch under the skin, to break up fatty tissues without pain, scars, anesthesia or a long recovery time.

Jens Quistgaard, an electrical engineer from Lake Forest Park, has made his career in the local ultrasound industry, fine-tuning the technology for uses like prenatal tests. Ultrasound has long been used as a medical diagnostic tool and more widely for therapeutic purposes, such as breaking up kidney stones.

Hypersensitive Sensor Technology

A small Israeli company has developed a sensor technology that it says is 10,000 times more sensitive than what's available today in products like heart monitors and MRIs. The company is positioning itself to capture a chunk of a $50 billion market, according to market observers.

The technology could result in one of the first remote sensing devices that can provide readings from several feet away, without physical contact, according to executives at Nexense.

Devices that could use the Nexense technology include heart monitors, satellites, cell phones and automobiles.

One of the company's first products will be a flat plastic vital-sign detector about the size of a sheet of

paper, that slips underneath a mattress. If someone has, say, a stroke, the device could awaken the victim's bedmate immediately. Another version of the device will help prevent sudden infant death syndrome, and future models could report episodes associated with epilepsy or asthma.

"The idea is not only to provide data," said Arik Ariav, CEO of Nexense and inventor of the sensing technology. Tests have shown that another device based on the same technology helps people stop snoring, Ariav said. It incorporates the same under-the-mattress plastic sheet, along with a small unit placed under the pillow that vibrates when the person snores. Nexense also plans to submit the device to FDA trials as a treatment for sleep apnea, a sleeping disorder associated with snoring.

Nexense will launch the two-user device, the infant monitor and the snore stopper by the end of this year, Ariav said. The company is looking for a partner to bring the products to market.

While Nexense currently has just 20 employees, some heavy hitters are already taking an interest in the technology. GE Healthcare bought a 10 percent stake in Nexense and is partnering with the company to develop improved MRI and CT-scan technologies. Presently, only a trained specialist can interpret CT and MRI outputs. The Nexense sensor can enhance the images, making them three-dimensional and easy for anyone to read, Ariav said.

GE Healthcare is performing clinical trials at John Hopkins University and the Mayo Clinic to test MRI and CT machines integrated with the sensor, said Cherik Bulkes, science director at GE Healthcare. MRIs and CTs are extremely sensitive to patient movement -- even breathing or a heartbeat can cause a blurry image. The Nexense sensor tells the MRI when the patient is completely still and it's safe to record an image. Once GE Healthcare works out minor kinks, such as how best to place the sensor on the patient, it will likely include Nexense's sensor in all of its MRI and CT machines.

General Motors has enlisted Nexense to develop a sensor to determine the torque of a car engine in order to try to reduce gas consumption. Another potential application in the automotive industry, Ariav said, is a sensor that could detect the size of a passenger in order to determine the appropriate force of an airbag, thereby avoiding injury.

The company says that the algorithms behind the sensor make it powerful. Ariav said the company's approach eliminates "noise" that could interfere with an accurate reading, enabling the sensor to use a processor running at a relatively low clock speed, 33 MHz.

Ariav explains that while the algorithm is unique and complicated, it won't use excessive power. The under-the-mattress device plugs into the wall; a phone device would borrow from the phone's own battery; and an automotive device would skim from the electrical system.

Weizmann's Patent Royalties

For the first time in its distinguished 45-year history, the Weizmann Institute of science has revealed its income from its patents.

Royalty revenues from commercialized products based on patents registered by its staffers has amounted a billion shekels from 2001 alone, the institute has revealed.

The Weizmann Institute is Israel's smallest higher education establishment, and it receives the least financial support from the government. Yet this academic institute is among the world's five highest earners, among peer institutions, from commercialization of patents.

Royalties amounted to $93 million in 2003, the institute revealed, building on $72 million in 2002. In that year Weizmann placed third in the world, among academic institutes, from the perspective of royalties income.

Its income is double that of the Hebrew University of Jerusalem, which has twice as many staffers, and outstrips academic institutes in the U.S. and Europe that have far greater R&D budgets.

Substantial amounts originated from treatments developed for multiple sclerosis, namely Copaxone, produced by Teva, and Rebif, an interferon beta 1-a for relapsing forms of multiple4 sclerosis produced by Serono of Switzerland. Copaxone's sales in 2003 amounted to $720 million, while Rebif sales totaled $819 million.

Yeda Research and Development Company, the Weizmann Institute body for the commercialization of patents, gives 40% of the royalties to the academics involved in the discoveries. Altogether these scientists have made $100 million from 2001. Dr Isaac Shariv, who heads Yeda, says many academic commercialization corporations give the scientists a higher proportion, but what difference does it make if they don't bring in any money.

Moreover, Weizmann's income is exempt from tax,

since it is a nonprofit organization. All its remaining money gets rolled back into R&D, which pads out the amounts it gets from the states and from research grants by about 15% a year. The state funds 37% of the institute's $50 million annual expenditure on research.

Weizmann boasts 1,500 families of patents, the highest of any institute in Israel. The cost of maintaining them comes to millions of dollars a year. Shariv explains that the ratio between registering a patent and actually commercializing it is 1:300. But the more time passes, the better the ratio becomes. 'After five years, the patent's chance of commercialization becomes 45%," he says.

Weizmann is home to a great deal of breakthrough research in a range of areas, from life sciences to physics and chemistry to computers. Each year the institute registers between 70 to 80 new families of patents.

Naturally conflicts of interest can arise regarding commercialization versus publication, admits Prof. Haim Garty, Yeda's chairman, adding that the institute has had problems with its corporate partners over the issue from time to time. But it tends to come down on the side of publication, and has lost money over the conflict. "I'd prefer a researcher from the Institute to get a Nobel prize rather than just another patent," he says.

A selection of key projects:

With NBT, to cultivate algae producing a high concentration of beta carotene, which is considered an anti-cancer agent. Income runs into millions of dollars a year.

With Serono, production of Rebif, with sales in the first quarter of 2004: $260 million.

With Teva Pharmaceuticals (TASE, Nasdaq:TEVA), production of Copaxone, a rival treatment for multiple sclerosis. Sales in the first quarter of 2004: $207 million.

With NDS, satellite encryption technology. Sales in 2001: $200 million.

With Proneuron, treatments for multiple sclerosis and glaucoma based on Copaxone. With Savient Pharmaceuticals (Nasdaq:SVNT), a product enabling premature babies without lung function to absorb oxygen until their lungs mature and become functional; and immunization for hepatitis type B.

With Peptor, a disease for type 1 diabetes, based on a peptide chain (protein).

With XTL, two drugs to treat hepatitis types B and C.

Disease-Resistant Tomato Seeds for Egypt

Israel is assisting Egypt's agricultural development. Zeraim Gedera will supply tomato seeds to Egypt for $1.5 million, including a number of strains that are resistant to a disease that has severely affected Egyptian tomato fields. Additional shipments are likely. Under an agreement signed with an Egyptian company specializing in agricultural input marketing, Zeraim Gedera will market strains resistant to the tomato yellow leaf curl virus (TYLCV)

Zeraim Gedera marketing manager Amnon Eshet said that the virus attacks tomato plants, causing heavy damage, up to total loss of the crop. The virus has almost totally destroyed almost all Egypt's tomato fields in the vicinity of Alexandria, near the Nile delta. Most of Egypt's tomato crop is designate for the domestic market.

The seeds ordered by Egypt, are part of an Egyptian government effort among farmers to develop Egyptian crops, and develop and transport water in canals from the Nile to adjacent desert regions, in order to grow vegetables for local consumption.

Eshet added that Zeraim Gedera had previously sold mostly melon seeds to Egypt, but had extended its exports in this market to tomatoes and peppers, as well. Egypt is one of the largest melon exporters in the Middle East, with most of its produce designated for the British market.

Elbit's UAVs Patrol Arizona-Mexico Border

The US Customs and Border Protection (CBP) border patrol, a division of the US Department of Homeland Security, announced that it had commenced the first sustained civilian use of unmanned aerial vehicles (UAVs) to curb illegal activities along the Arizona-Mexico border.

Two Hermes 450 UAVs, manufactured by Silver Arrow, a division of Elbit Systems (Nasdaq:ESLT), will be used as part of the Arizona Border Control initiative to assist with border surveillance activities. They will augment manned aircraft, helicopters and ground sensors already in place. The cost of operations during the test period is $10 million.

The US Department of Homeland Security stated that the use of UAVs would complement the other intrusion detection and intelligence gathering components of the border surveillance network to meet the mission of

stopping the illegal entry of terrorists, smugglers and others into the United States.
News reports stated that the UAV is able to read a license plate, view a vehicle's occupants, and detect weapons.

The Hermes 450 UAV has up to 20 hours of flight endurance, reaches a ceiling of 18,000 feet operating at approximately 9,500 feet, and has a maximum air speed of 125 miles per hour.

The UAV is equipped with electro-optic sensors and communications payloads providing day and night imagery. The UAV is equipped with sophisticated communication systems transferring imagery in real-time to ground control stations.

Analysts say that aerial surveillance of the US borders could become a major market for UAV manufacturers in North America and abroad. UAV border patrol will commence with the US-Mexico border, and later on, the US-Canada border.

Spy Balloon Used to Spot Palestinian Rocket Launchers

The Associated Press has reported that the Israeli military is using a high-flying, high-tech balloon to spot Palestinian rocket launchers in Gaza, an army publication reported.
The balloon has been flying several hundred yards over the main army command post just outside the Gaza Strip for the past month, according to the current edition of army's Bamahane publication.
The balloon is equipped with sophisticated cameras and transmitters and it relays pictures of a wide area back to the base. The army's weekly said each balloon system, developed by the Israeli military research company, costs about $2 million.
During four years of conflict, Palestinians have fired hundreds of homemade Qassam rockets at Jewish settlements in Gaza and Israeli towns and villages just outside the fence. In June, a Qassam rocket killed two Israelis, including a child, in the town of Sderot. However, most rockets have caused little damage or injury.
Israel has often sent troops into Gaza in an attempt to destroy the rocket launching sites.
"The balloon is necessary for finding the Qassams," an intelligence officer told the weekly. Lt. Col. Yossi, said, "it allows an improved watch over the area."
The article did not say how the balloon would fit into Israeli army operations. It could be used to pinpoint the location of portable rocket launchers for an immediate strike.
During a recent operation in northern Gaza, from where most of the rockets are fired, Israeli forces said they prevented an attack by hitting a launcher and militants preparing it before they could fire a rocket.
The military said the strike was a rare success but did not say how soldiers spotted the launcher before the firing. Disclosure of the balloon could provide an explanation.
The weekly said the balloon flying over the command post is a prototype and the military hopes to have 10 such balloons in the air within a year.
Late next year, Israel is supposed to withdraw all settlers and soldiers from Gaza, according to Prime Minister Ariel Sharon's "unilateral disengagement" plan. Critics of the plan warn that rocket fire will increase once the Israeli military is out of the picture, but Israeli officials have said that if necessary, they would send forces back into the territory to stop terror attacks.
Bamahane also reported in another article that the military would build what it called a "smart fence" between Israel and the West Bank in places where the main barrier has not been completed.
Israel is building a separation barrier along the West Bank, dipping deep into the territory in some places, to keep Palestinian suicide bombers and other attackers out of Israel.
Palestinians have challenged the route, charging that it takes their land and causes hardships. Israel's Supreme Court has forced the military to move it back toward the frontier that existed between Israel and the West Bank before the 1967 Mideast war. The barrier is one-quarter completed.

The weekly reported that the "smart fence," a temporary measure before the full barrier is built, would have cameras and radar transmitting information to a command post, allowing soldiers to spot potential infiltrators.
In the future, a similar fence would be built around parts of Gaza, the weekly reported. A conventional fence has been in place there for decades.

Israel 3rd in World for US Patents

1,265 patents were filed in the US from Israel in 2003 - 2.04 per 10,000 people.

Israel was ranked third in 2003 for the number of US patents filed as a ratio of population, behind Japan

and Taiwan. The number of US patents filed from Israel increased by 69% over the previous five years.
The top five countries were Japan, with 2.98 US patents per 10,000 people; Taiwan - 2.96; Israel - 2.04; Switzerland - 2.02; and Sweden - 1.92.
Business Data Israel (BDI) and Coface, an owner of BDI, conducted the study.

Germany had 1.5 US patents per 10,000 people; France 0.7; the UK 0.68; and Spain 0.08.

The number of US patents filed from Israel rose by 20% in 2003, compared with 2002, despite the recession. 1,265 patents were filed in 2003, compared with 1.042 in 2002, 1,023 in 2001, and 748 in 1999.

Israeli High-tech Fabric at Olympics

High-tech apparel company Zensah Performance will make its debut on the international sports scene at the 2004 Summer Olympic Games in Athens. Members of Israel's judo team Udi Vaks and Gal Yekutiel will wear Zensah sportswear during the games.
Zensah has developed proprietary technology for seamless athletic and performance apparel. Zensah fabric contains silver ions which help regulate body temperature, keeping athletes cool and dry in the summer and preserving body warmth in the winter. The fabric also has moisture wicking properties to draw sweat away from the body

The fabric was originally developed for use by the special forces in Israel. Zensah's tactical shirt has been adopted by a number of law enforcement personnel in the US.

The company has a sales and marketing office in Miami, and a research and development unit in Israel.

Morgan Stanley Invests in Israeli Venture Capital

Investment banker Morgan Stanley has recently invested $35 million in two Israeli venture capital funds in recent months. Morgan Stanley signed an agreement to invest $20 million in the Gemini VC fund, which is currently completing a $200 million round of financing.

Sources close to Morgan Stanley said this is the company's first investment in Gemini. In addition, Morgan Stanley has invested $15 million in Pitango IV, completing its $300 million round of financing. This is Morgan's third participation in Pitango's operations.

Pitango and Gemini both refused to comment on this report.

Morgan Stanley is one of the largest underwriters in the world. It was among one of the lead underwriters for the stock issues of Amdocs, Partner and NDS.

Up to 2001, Morgan Stanley was highly involved in Israel technology, investing more than $100 million through local VC funds. However, after the “bursting of the dot.com bubble, the company interrupted its investment activities.