

# ISRAEL HIGH-TECH & INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES  
Publisher September 2008 Vol. XXIII Issue No.9

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## Selling small is a way of life



Success breeds criticism. Only after Israel's high-technology sector reached a critical mass, did

criticism emerge.

"Some people think we are only meant to innovate, and that once we build something, the best strategy going forward is to sell that company," says venture capitalist Chemi Peres. "The other school of thought is that you have to focus on building significant companies. Otherwise, it will endanger the idea of Israel as a country of science and technology," Over the years young companies, after reaching a certain level of sales, generally seek a buyout partner. This has been criticized over and over again but no solution has been proposed. We see the problem related to a dearth of top level management that could lead a company into international markets. In the United States, for example, when a top executive is released, we hear of an immediate replacement. There seems to be an unending pool of qualified managers. In Israel there probably, not more than a handful of managers who could step in and manage a new company..

Nokia in Finland is a case in point. It is a global giant but the only one in Finland. Perhaps it goes to show that small countries are not structured to breed mega companies. Israel has Teva, Comverse, CheckPoint and Amdocs, all have billion dollars a year in sales.

Most people forget that building a major company one requires a large home market, something that Israel is missing. Coca Cola was a major seller in the United States long before turning to international markets.

The activities of the Office of the Chief Scientist (OCS) of the Ministry of Trade and Industry have also come under criticism. With an annual budget of more than \$250m. the office supports a number of programs. The most important of these is the up to \$250,000 per startup program. These grants are generally used for validation of a project.

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The incubator project is also funded by the OCS. Small companies get support, primarily in administration and a location for their activities.

Whether “build a small company and sell out” syndrome is a major issue is questionable. If you can not build a small successful company you will never build a successful big company.

Professors Hershko and Ciechanover, both Nobel Prize winners in chemistry, criticize the declining state of Israel’s educational system. “Israel will always have limited resources so we have to focus on the important, innovative and groundbreaking things,” said Hershko. He added that “we would be unable to do such things as the work that led to the Nobel prize while the educational system is collapsing.”

Education is paramount in the structure of Israel’s high-technology. However, it is a function of Government budgets that can be adjusted as needs dictate. On balance the size of a country’s companies is far less important than the state of its educational structure.

Yair Goldfinger, a founder of ICQ, which was sold for \$420m., recently sold another one of the companies which he founded. We might have preferred had he founded another Teva, but we have no objection if he sells out his company early in its development.

### **Frost & Sullivan cites TransPharma for its innovative ViaDerm drug delivery system**

The 2008 Frost & Sullivan European Transdermal Drug Delivery Product Innovation Award is conferred on Israel-based TransPharma Medical Ltd. in recognition of its innovative ViaDerm drug delivery system.

The company’s two flagship drug product development programs - ViaDerm hPTH (1-34) for the treatment of osteoporosis and ViaDerm-hGH for the treatment of human growth hormone deficiency are both in phase 2 of clinical development.

The unique ViaDerm system solution allows for low-cost, patient-friendly transdermal delivery of a wide variety of drugs from a patch. Suitable for home use,

the ViaDerm system employs a reusable battery-operated handheld electronic device in combination with a patch containing the drug.

The basis of the ViaDerm device is TransPharma’s proprietary RF-MicroChannel technology which is applied to create an array of microscopic pores in the outer skin surface, facilitating the systemic delivery of drugs,” explains Frost & Sullivan Research Analyst Sylvia Miriyam Findlay. “The pores are created rapidly with no pain or trauma to the skin. The device can be applied to all skin types and is fully controlled by a unique feedback mechanism that ensures precise and reproducible drug delivery.”

TransPharma Medical aims to deliver the best solutions for unmet needs in transdermal drug delivery. It has attempted to meet the challenge of delivering large peptide and proteins by introducing the dry Printed Patch to complement its innovative RF-MicroChannel technology. The printed patch uses the dry form of the drug, thereby increasing stability and shelf life at room temperature.

“TransPharma Medical has constantly worked to spread its novel technology for transdermal drug

#### **Israel High-Tech & Investment Report Published monthly since January 1985**

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**Annual subscription \$95.- per year, for 11 issues,**

**Israeli residents add 15.5% VAT**

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delivery in therapeutic areas such as endocrine, pain, osteoporosis and diabetes,” adds Findlay. “Its application can cover a wide range of therapeutic molecules like hPTH, hGH, GLP-1 analogues, Granisetron, Calcitonine, Testosterone, Diclofenac, and more.”

The company has sought to forge productive partnerships with pharmaceutical and biotechnology companies, which will maximize the synergy between its innovative technology and pharmaceutical companies’ pipelines. Accordingly, TransPharma Medical has a strategic collaboration with Elli Lilly for the development and commercialization of ViaDerm-hPTH (1-34) for the treatment of osteoporosis. The product, currently in Phase 2 testing, is administered transdermally and thus can enable patients to manage their disease while eliminating the need for daily painful injections.

### Hi-tech companies raise \$291 million in second quarter

Israeli technology companies, backed by venture capital funds, raised \$291 million in the second quarter, down 32 percent from the first, according to a report from Kesselman and Kesselman PricewaterhouseCoopers MoneyTree.

Sixty-nine technology companies raised capital during the quarter, down from 92 in the first and 80 a year earlier, according to the report released in August. The average investment per company was \$4.2m., compared with \$4.6m. in the first quarter and \$4m., in the same period last year.

“Venture capital funds have, in the absence of financing opportunities in the financial markets, chosen to lend their support to companies whose operations are at a more mature stage of development,” said Rubi Suliman, a partner at Kesselman. “This trend opens the door wide for angels and other investment entities to fund seed companies.”

On July 16, the Israel Venture Capital Research Center said investment by Israeli venture capital funds was slowing.

Deloitte Brightman Almagor Zohar’s quarterly VC Indicato rsurvey released recently said most Israeli venture capitalists believed it would be

difficult to make an initial public offering on the Nasdaq 2009.

“When looking at recent quarters, it may be possible to discern a trend whereby venture capital funds have begun to focus on software-based sectors at the expense of other sectors,” Joseph Fellus, another partner at Kesselman, said in Tuesday’s report. “A continuation of this trend will inevitably lead to a structural change in the nature of the Israel hi-tech industry.”

Investment in the first six months of the year totaled \$717m., the highest first-half amount since 2001, the report said.

### IDE Technologies wins Australian contract

IDE Technologies, jointly owned by the Israel Corporation Group subsidiary Israel Chemicals and the Delek Group, signed a contract to supply a desalination plant worth over a 100 million Euros to a major industrial client in Australia. The client will use the desalinated water for its industrial production processes.



Slated for completion during 2010, the new plant will be based on reverse osmosis technology - a modern process technology used for desalinating water in a wide range of applications. The plant will provide 140,000 cubic meters/day (50 million cubic meters/year) of high quality desalinated process and drinking water, using innovative technologies implemented by IDE in its projects worldwide, for example in the plants in Ashkelon and Hadera (over 100 million cubic meters/year each), Cyprus (20 million cubic meters /year) and in Eilat (3.6 million cubic meters/year).

This project is one of the most complex in the world and one of the largest of its kind supplied by IDE to a foreign client. The quality of the feed water necessitates more precise and complex treatment than in similar installations elsewhere and will be subject to the rigid and meticulous standards of the local industry.

Avshalom Felber, Chief Executive Officer of IDE,

welcomed the signing, calling the deal “one of the most challenging the company has known, which places IDE in a key position for competing for similar projects in the future. It establishes IDE’s presence on the Australian continent strengthens its worldwide deployment in line with the company’s business strategy of global expansion and strengthens IDE’s position as a world leader in the seawater desalination market.”

### **New therapy for promoting growth of blood vessels**

Angiogenesis is a physiological process involving the growth of new blood vessels from pre-existing vessels or coronary heart disease is group of syndromes arising from failure of the coronary arteries to supply sufficient blood to heart muscles; associated with atherosclerosis of coronary arteries. Improper function of the coronary arteries, by itself, may not be life threatening but it has a negative impact on the quality of life.

An Israeli company Cardiospec has developed a non-invasive therapy using extracorporeal shockwave technology. It is similar to the use of ultrasound for crushing kidney stones, but at a lower level of intensity. A cardiac ultrasound imaging system is used to locate the treatment area and shockwaves are then delivered via the acoustical component to the treatment area. This leads to an enhancement of the growth of blood vessels.

At \$250,000 a unit it is far from cheap but it pays for itself in less than one year’s use.

### **China Merchants Bank to use PerSay’s FreeSpeech voice biometrics technology**

CMB, one of China’s largest and most innovative banks, selected PerSay’s FreeSpeech(TM) for transparent authentication of customers, calling CMB contact centers. CMB will be the first bank in China to deploy voice biometrics and provide its customers with the highest levels of security for phone based transactions, while enhancing customer experience and reducing costs.

“We’re proud to be working with CMB,” noted Ariel Freidenberg, PerSay’s Executive VP, Global Sales and Business Development, “As one of the most advanced and largest banks in China, CMB is known

for its rigorous selection of state-of-the-art technologies to improve customer service and enhance security. CMB’s decision to deploy PerSay’s voice biometrics technology adheres to CMB’s ‘Technology Oriented’ development strategy. CMB’s decision was based on many factors, amongst them: PerSay’s unmatched experience in deploying large scale voice biometric products, and PerSay’s superior technology,” concluded Mr. Freidenberg.

“This exciting and challenging first project marks the cornerstone for the voice biometrics market in China,” said WuTong, ANTT’s General Manager. “ANTT brings a vast experience in the contact center arena and will push PerSay’s products in the financial and Telco markets in the region. We look forward towards the successful completion of this ground breaking project, enhancing security and customer experience for the benefit of CMB’s customers.”

FreeSpeech is a unique text-independent biometric speaker verification system which transparently verifies the identity of a speaker during the course of a natural conversation. Content, language and accent independent, FreeSpeech transparently retrieves the biometric voice characteristics required for verification within seconds, eliminating the need for cumbersome authentication questions. CMB is planning to integrate PerSay FreeSpeech into its Huawei-based contact centers in the next couple of months.

### **Carl Zeiss SMT buys Israeli mask metrology company**

ImageCarl Zeiss SMT has entered into a binding agreement to acquire Pixier Technology to boost its product offerings in the photomask sector. The acquired company will be part of Carl Zeiss SMT’s Semiconductor Metrology Systems Division (SMS). Pixier Technology is a privately held firm. The acquisition is expected to close during the third quarter of 2008.

“The acquisition of Pixier Technology is a further step in Carl Zeiss SMT’s long-term strategy to widen its technology portfolio by offering innovative products to enable advanced semiconductor manufacturing,” states Hermann Gerlinger, Member of the Carl Zeiss AG Board and President and CEO of Carl Zeiss SMT.

"Pixar's contribution of new technical capabilities like the short pulse laser processing of mask blanks to improve the CD uniformity of photomasks and established products like CDC and Galileo perfectly complement the Carl Zeiss product portfolio of mask qualification, repair and metrology systems," commented, Frank P. Averdung, Managing Director of Carl Zeiss SMT's SMS Division.

### Drug may help insomniacs over age 55

A new drug improves sleep and daytime vigilance, helping to re-organize the circadian system, the body's internal clock, an Israeli scientist said.

Nava Zisapel, a chemist and neurobiologist at Tel Aviv University developed Circadin, which she says helps re-organize the body's internal clock.

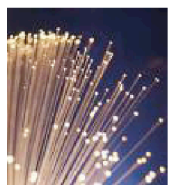
The circadian system regulates cell regeneration and other biological activities. Circadin mimics the hormone melatonin -- not only a powerful anti-oxidant protecting DNA but a key player in the regulation of the circadian system.

The drug has a profound effect on the blind who don't see light -- a trigger that synchronizes the body's internal clock, Zisapel said.

In people age 55 and older -- night-time levels of blood pressure and blood sugar were normalized in those using Circadin during clinical trials of the drug conducted in Europe and the United States.

### Telecoms grew 5.4% in 2007

Israel's telecommunications sector posted growth of 5.4% in 2007, with revenues rising to NIS 28.1 billion, the Communications Ministry reported last week. The ministry said most of the growth came from a 20% rise to nearly NIS 1 billion in Internet revenues from the two companies that provide Internet infrastructure - Bezeq via ADSL and HOT through cable. Revenues at Israel's Internet service providers grew by 14% last year. Mobile phone companies, which now represent more than 50% of total revenues in the telecoms sector, grew by 8% to NIS 15.5 billion. Revenues in the domestic



landline sector dominated by Bezeq but with recent competition from HOT edged up to NIS 4.40 billion from NIS 4.36 billion, the ministry said. International calling revenues dropped 7% in 2007. (Reuters)

Circadin, currently available in Europe, is expected to be in the United States by next year, Zisapel said.

Zisapel is the chief scientific officer of Neurim Pharmaceuticals, a company commercializing the technology and licensing of drugs from Ramot, the technology transfer arm of Tel Aviv University.

### Dr. Hossam Haick named by TR as one of the world's 35 top young scientists

Dr. Haick was selected for inclusion in list known as the "TR35" from more than 300 nominees by a panel of expert judges and editorial staff at Technology Review, M.I.T.'s magazine of innovation. He and the other winners will be featured in the September issue of the magazine and honored at M.I.T.'s EmTech08 Conference to be held September 23-25, 2008.

"The TR35 honors young innovators for accomplishments that are poised to have a dramatic impact on the world as we know it," said Jason Pontin, editor in chief and publisher of Technology Review. "We celebrate their success and look forward to their continued advancement of technology in their respective fields."

Already the recipient of several prestigious awards and grants, Dr. Haick has garnered broad international recognition for leading the development of an "electronic nose," a device consisting of nano-sized sensors that can detect cancer in a person's breath, which could greatly improve survival rates via critical early diagnoses.

"The preliminary results of this device indicate that it currently detects breast, colon and lung cancer. We hope that in the future it will be a routine screening for all cancers, thereby guaranteeing early treatment," said Dr. Haick.

He is the first Israeli scientist to win the European

Union's Marie Curie Excellence Grant, and in March was honored by the president of France with the France-Israel Foundation Prize for Excellence in Science. Among his other academic honors are a Fulbright fellowship and inclusion on the European Union's List of 300 Top Young Scientists.

Born and raised in the mixed Jewish-Arab city of Nazareth, Dr. Haick received his doctorate from the Technion and pursued post-doctoral research at the California Institute of Technology. He currently holds the position of senior lecturer in the Technion Faculty of Chemical Engineering and the university's Russell Berrie Nanotechnology Institute. Past winners of the TR35 include Google founders Sergey Brin and Larry Page, Linus Torvald, the developer and founder of Linux, and Facebook creator Mark Zuckerberg.

### **US reportedly have closed a deal to include Israel into the U.S. missile defense system**

The deal, for the first time would station U.S. military personnel permanently in Israel manning X-Band radars.

The radars, incorporating satellite technology, would expand Israel's missile detection capability from 600 to 1,300 miles and effectively give Israel early warning of any potential Iran strike.

Lt. Gen. Henry Obering, who heads the U.S. Missile Defense Agency, told Defense News in an interview, "We're moving ahead as quickly as we can." Ha'aretz said the system might be installed as early as this autumn.

Chris Taylor, Obering's spokesman, confirmed the remarks to JTA and would add only, "Negotiations are under way as to how we can work with our partners."

Ehud Barak, the Israeli Defense Minister, said during a Washington visit earlier this month that the deal was close to being finalized. He said the system, which relies in part on fixed satellites that are in fixed orbit over Iran, can notify Israel of a missile launch within 90 seconds.

### **Israeli army chooses "Targeter" Elbit's hand-held firing system**

The Israeli infantry is slated to become the first operational users of a new, miniaturized targeting

system custom-designed by Elbit Systems for close-in combat and urban battles.

The Haifa, Israel-based firm announced J that the Israel Defense Forces (IDF) had selected its MARS hand-held thermal imager and target acquisition system for use by Israeli land soldiers. An initial order is expected in the next several weeks, with deliveries to commence by the end of this year, company executives said.

Developed by Electro-Optics Elop Ltd., an Elbit subsidiary, MARS is an ultralight, uncooled infrared sensor weighing less than 2 kilograms, including the system's eight-hour rechargeable battery. The hand-held system allows for single-handed location, targeting and killing of close-in targets up to 1 kilometer away, regardless of cloudy, moonless or other environmentally challenging conditions.

It incorporates an eye-safe laser rangefinder, digital magnetic compass and Global Positioning System receiver, and features the same image processing circuitry and software algorithms developed for the firm's larger, longer-range Coral system.

"We take great pride in supplying the IDF with our advanced systems," said Haim Rousso, Elop general manager. "The unique imager answers the needs of the individual soldier and was developed according to the IDF's requirements, based on the extensive experience and knowledge accumulated at Elop."

Adi Dar, Elop's vice president for business development and marketing, said the firm's MARS was selected following a nearly yearlong competition and operational assessment conducted by the IDF's Land Forces Command.

He noted that the short-range, uncooled system was developed for lower-echelon field commanders and special mission squads who must engage enemies with precision, but not from the longer ranges covered by Coral and other cooled targeting sensors. He added that MARS feeds into existing wireless command, control and communications system

### **Israel, Canada Ink UAV Deal**

Israel Aerospace Industries has signed a contract to supply unmanned aerial drones to Canada for use

by its special forces. The Heron-TP drones each have a wingspan of 26 meters (85 feet) and can remain airborne for 36 hours at a time and at an altitude of up to 1.5 kilometers (about a mile).

The first aircraft, worth an estimated \$90 million, would be delivered by 2011, with another series furnished in the following three years at a cost of \$35 million.

An official at the aerospace company confirmed the agreement had been signed but declined to give further details.

The company is hoping to sign another contract worth hundreds of millions of dollars to supply similar drones to Germany, according to a company official.

### **U.S., Israel seal deal for missile radar defense system**

The United States and Israel have agreed on the deployment of high-powered, early-warning missile radars in the Negev desert, to be manned by U.S. military personnel.

The radars, known as X-Band, will be linked to a U.S. satellite-based alert network.

A spokesman for the Pentagon's Missile Defense Agency (MDA) said the new system could double or even triple the missiles' range of identification, which would be particularly useful should Iran launch an attack on Israel.

Details of the deal, which caught the public's attention at the end of July, were reported recently in the periodical Defense News, and were corroborated by senior U.S. and Israeli officials.

The agreement had previously been discussed in meetings with Israel Defense Forces Chief of Staff Lt. Gen. Gabi Ashkenazi and his American counterpart, Admiral Mike Mullen, and by civilian defense leaders of both countries.

According to the periodical, the radar will be operated by staff from the U.S. European Command, starting in early 2009.

The system's deployment may even be moved up to this autumn, in order to integrate it with the Arrow missile defense system.

Under the terms of the agreement, U.S. military staff will be permanently based in Israel for the first time. U.S. Army personnel was temporarily based in the country during the first Gulf War in 1991, and during brief periods of tension with Iraq following that conflict.

Lt. Gen. Henry Obering, the head of MDA, told Defense News that from his perspective, "We're moving ahead as quickly as we can."

The IDF's current early-warning system, known as Green Pine and a component of the Arrow network, has a range of 800-900 kilometers. When combined with the American satellite system, its range expands to 2000 kilometers.

"We've been studying architectures to provide an integrated layered defense that will plug into various architectures for the region for many years," he said. "And having an X-Band radar, like the one we have in Japan, has always been part of our calculation."

An Israeli security expert said the significance of the deal lies primarily in its linking Israel with the U.S. satellite system, which will add "precious minutes" to its early warning ability.

### **Hi-Tech tidbits**

Scientists in Israel, found that the brackish water, drilled from underground desert aquifers, hundreds of feet deep, could be used to raise warm-water fish. The geothermal water, less than one-tenth as saline as sea water, free of pollutants, and a toasty 98 degrees on average, proves an ideal environment.

Israeli-developed designer-eyeglasses, promise mobile phone and iPod users, a personalized, high-tech video display. Available to US consumers next year, Lumus-Optical's lightweight and fashionable video eyeglasses, feature a large transparent screen, floating in front of the viewer's face that projects their choice of movie, TV show, or video Game.

When Stephen Hawkins visited Israel recently, he shared his wisdom with scientists, students, and even the Prime Minister. But the world's most renowned victim of amyotrophic lateral sclerosis (ALS), or Lou Gehrig's disease, also learned something, due to the Israeli Association for ALS' advanced work in both embryonic and adult stem cell research, as well as its proven track record with neurodegenerative diseases. The Israeli research community is well on its way, to finding a treatment for this fatal disease, which affects 30,000 Americans.

Israeli start-up, Veterix, has developed an innovative new electronic capsule that sits in the stomach of a cow, sheep, or goat, sending out real-time information on the health of the herd, to the farmer via Email or cell phone. The e-capsule, which also sends out alerts if animals are distressed, injured, or lost, is now being tested on a herd of cows, in the hopes that the device will lead to tastier and healthier meat and milk supplies.

The millions of Skype users worldwide will soon have access to the newly developed KishKish lie-detector. This free internet service, based on voice stress analysis (a technique, commonly used in criminal investigations), will be able to measure just how truthful that person on the other end of the line, really is.

Beating cardiac tissue has been created in a lab from human embryonic stem cells by researchers at the Rappaport Medical Faculty and the Technion-Israel Institute of Technology's biomedical Engineering faculty. The work of Dr. Shulamit Levenberg and Prof. Lior Gepstein, has also led to the creation of tiny blood vessels within the tissue, making possible its implantation in a human heart.

Israel's Magal Security Systems, is a worldwide leader in computerized security systems, with products used in more than 70 countries around the world, protecting anything from national borders, to nuclear facilities, refineries, and airports. The company's latest product, DreamBox, a state-of-the-art security system that includes Intelligent video, audio and sensor management, is now being used by a major water authority on the US east coast to safeguard the utility's sites.

It is common knowledge that dogs have better night vision than humans and a vastly superior sense of smell and hearing. Israel's Bio-Sense Technologies, recently delved further, and electronically analyzed 350 different barks. Finding that dogs of all breeds and sizes, bark the same alarm when they sense a threat, the firm has designed the dog bark-reader, a sensor that can pick up a dog's alarm bark, and alert the human operators. This is just one of a batch of innovative security systems to emerge from Israel, which Forbes calls 'the go-to country for anti-terrorism technologies.'

Israeli company, BioControl Medical, sold its first electrical stimulator to treat urinary incontinence to a US company for \$50 Million. Now, it is working on CardioFit, which uses electrical nerve stimulation to treat congestive heart failure. With nearly five million Americans presently affected by heart failure, and more than 400,000 new cases diagnosed yearly, the CardioFit is already generating a great deal of excitement as the first device with the potential to halt this deadly disease.

### **Aladdin receives buyout offer from Vector Capital**

Israel-based Aladdin Knowledge Systems Ltd (ALDN.O: [Quote](#), [Profile](#), [Research](#), [Stock Buzz](#)) said it received an unsolicited offer from private equity firm Vector Capital to acquire the software security firm, and that it is reviewing the proposal.

As a potential alternative to a full buyout, Vector Capital also proposed a possible acquisition of the company's digital rights management software business, with Aladdin repurchasing its shares held by Vector Capital.

Vector Capital's alternative proposal includes the sale of the authentication business of its affiliate SafeNet Inc to Aladdin.

Aladdin has rejected the offer.

### **Ormat 2nd-quarter profit climbs 44 percent**

Ormat 2nd-quarter profit rises 44 percent on increased domestic electric generating capacity

Ormat Technologies Inc., which builds and operates



geothermal power plants, said Wednesday its second-quarter profit jumped 44 percent on an increase in domestic electric generating capacity offset by lower product revenue.

The company reported net income of \$12.2 million, or 28 cents per share, in the second quarter of 2008 compared with \$8.5 million, or 22 cents per share, in the second quarter of 2007.

Revenue slipped to \$80.2 million from \$84.1 million.

Analysts surveyed by Thomson Financial, on average, expected earnings of 24 cents per share on revenue of \$80.4 million.

Ormat said its products backlog increased to \$186 million. Projects scheduled to come online over the next two years will contribute 101 megawatts by year's end and 73 megawatts in 2009, the company said.

### Israel leads OECD in R&D

In fixed prices, Israel's expenditure on civilian R&D rose by 7.2% in 2007, over the year before, after rising by 3.3% in 2006 and 4.5% in 2005

The Central Bureau of Statistics reported that Israel tops the OECD in terms of civilian R&D expenditure as a proportion of GDP.

The CBS noted that Israel spent NIS 31.5 billion on civilian R&D expenditure, 4.7% of GDP. The OECD average was 1.7% of GDP; Japan and South Korea each spent 3.2% of GDP on R&D, and the US spent 2.2%.

Israel's civilian R&D expenditure was 4.6% in 2006. In fixed prices, Israel's expenditure on civilian R&D rose by 7.2% in 2007, over the year before, after rising by 3.3% in 2006 and 4.5% in 2005.

In 2006, national expenditure on civilian R&D in Israel, as a percentage of the GDP, was 4.5% -higher than in all developed industrialized countries that are members of the OECD. The share of R&D in the GDP was 3% and more in Sweden (3.6%), Finland

(3.4%), Japan and Korea (3.2%); in six countries it was between 2.1% and 2.9%: Austria, Iceland, United States, Denmark, Germany, and Switzerland, and in the rest of the countries it ranged from 0.5% to 1.9%

Government ministries' expenditure on civilian R&D amounted to about NIS 4.0 billion in 2007, including research, commissioning of research from other institutions and transfers for financing of R&D conducted by other sectors, including the General University Fund. The main expenditure of government ministries was by the Ministry of Industry Trade and Labor. In 2007, the expenditure of this ministry constituted 60% of the overall expenditure of government Ministries on R&D (excluding GUF). Expenditure on R&D by the Ministry of Industry Trade and Labor, at current prices, decreased by 11% in 2007, following an increase of 4% in 2006.

Most of the increase in R&D spending was by high-tech and life sciences companies, including biotechnology firms, in which spending in 2007 was 13% higher than in 2006. R&D spending by software services companies rose by 10%, R&D spending by manufacturers rose by 4.3%, and R&D spending in NPOs rose by 4.8%. However, R&D spending in universities fell a further 0.4% in 2007 after falling by 1.4% in 2006.

### Robo-skeleton lets paralyzed walk

A robotic suit is helping people paralysed from the waist down do what was previously considered impossible - stand, walk and climb stairs.

ReWalk users wear a backpack device and braces on their legs and select the activity they want from a remote control wrist band.

Leaning forwards activates body sensors setting the robotic legs in motion.

Users walk with crutches, controlling the suit through changes in centre of gravity and upper body movements.

The device effectively mimics the exoskeleton of a crab.

Former Israeli paratrooper Radi Kaiof has been paralysed for the last 20 years following an injury during his service in the Israeli military.

He says the device has changed his life.

“I never dreamed I would walk again. After I was wounded, I forgot what it’s like. Only when standing up can I feel how tall I really am and speak to people eye to eye, not from below.”

The device, which is now in clinical trials in Tel Aviv’s Sheba Medical Centre, is the brainchild of engineer Amit Goffer, founder of Argo Medical Technologies, a small Israeli high-tech company.

It was Goffer’s own paralysis that inspired him to look for an alternative to the wheelchair for amobility.<sup>a</sup>

The company claims that by maintaining users upright on a daily basis, and exercising even paralysed limbs in the course of movement, the device can alleviate many of the health-related problems associated with long-term wheelchair use.

Kate Parkin, director of physical and occupational therapy at NYU Medical Center in the US said the potential benefits to the user were two-fold.

“Physically, the body works differently when upright. You can challenge different muscles and allow full expansion of the lungs.

“Psychologically, it lets people live at the upright level and make eye contact.”

Dr Mark Bacon, an expert at the UK charity Spinal Research, said: “There are a number of devices about which stabilise the trunk and can help with gait.

“Often they are very bulky and are only used for rehabilitation in specialist centres.”

He said ReWalk might be a good option for some people.

“Sitting down in a wheelchair can be an issue for some people. Devices like this one might be appeal-

ing. However, it might not be any better than a wheelchair in terms of convenience.

“And these devices are only suitable for people who still have good control over their hands and shoulders.”<sup>a</sup>

## **NASA Technology illuminates faded Dead Sea Scrolls**

Scientists are using American space-age technology to bring to light the faded script on thousands of fragments of the Dead Sea Scrolls, the oldest existing record of the Old Testament. Israeli authorities said experts will digitally photograph the scrolls and post them on the internet for the entire world to see.

The Israel Antiquities Authority unveiled the project at a news conference in Jerusalem to mark the 60th anniversary of the discovery of the first Dead Sea scrolls. The scrolls were found in 1947 by a Bedouin shepherd near the ancient ascetic community of Qumran; some 2,000 years had elapsed from the time the pottery jugs containing the scrolls were placed in cool Judean Desert caves, until their chance rediscovery.

The technology developed by retired NASA scientist Dr. Greg Bearman, will also be used to monitor the scroll fragments on an ongoing basis for conservation purposes. But even more exciting is the expectation that it will reveal portions of the text that were invisible until now.

High-tech cameras using infrared photography are now being used to uncover sections of the 2,000-year-old scrolls that have faded over the centuries and become indecipherable, the Israeli Antiquities Authority said.

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## **China becomes Israel’s second largest importer in 2007**

Chinese exports to Israel surpassed Germany’s in 2007, making China Israel’s second largest importing country, Israel’s Central Bureau of Statistics reported.

Imports from China grew to 4.6 billion U.S. dollars in 2007 from 3.2 billion dollars in 2006, the bureau

said.

In 2006, Germany was the second largest exporter of goods to Israel excluding diamonds. Its exports to the Jewish country rose to 3.3 billion dollars in 2007 from 3.1 billion dollars in 2006.

Analysts said that the increase in Chinese imports was part of a trend of growth that would include a wider variety of products over time.

“The big difference is that Israel will start importing an increasing amount of high-tech equipment, not just consumer equipment,” Amos Yudan, Chairman of the Israel China Chamber of Commerce, told Xinhua.

“The Israeli market will understand that China is not only supplying cheap materials but also items which are really high-tech,” Yudan said, noting that some Chinese high-tech equipments were already being imported.

“This is a trend that is likely to change the trade between Israel and China,” he said.

Yudan noted that Israeli exports to China would also witness a yearly increase of 15 to 20 percent, noting that the exports of some products, including fertilizer and potash from the Dead Sea, will surely grow.

Israeli exports of medical apparatus and communications technology to China were also likely to rise, he said.

Over the past five years, Chinese exports to Israel have more than quadrupled while the imports from the United States, the top exporter to Israel, were nearly unchanged between 2002 and 2006.

In 2007, U.S. exports to Israel rose to 8.1 billion dollars from 6.2 billion dollars in 2006.

Israel's total imports, 43 percent of which were from Europe, were up at 56.6 billion dollars in 2007 from 47.8 billion dollars in 2006. Excluding diamonds, Israeli imports rose to 46.6 billion dollars in 2007 from 38.8 billion dollars in 2006.

Countries from which Israel imported more than a billion dollars worth in goods, excluding diamonds, included Italy, the Netherlands, the United Kingdom, France, Turkey, Japan, and South Korea.

Including diamonds, Belgium ranked third after China with four billion dollars in exports to Israel, while Israel's imports from Russia, Switzerland and India were all above one billion dollars.

However, some analysts downplayed the effect of the increase in Chinese exports to Israel, saying it did not carry any immediate importance for the Jewish country.

“It is simply part of the global trend of China's growth and is not just specific to Sino-Israeli relations. The fact that Chinese exports surpassed Germany's doesn't really mean much for the Israeli economy,” Inon Dafni, chief economist of the Israel Discount Bank said.

But Yudan noted that the increase in Chinese imports to Israel was not paralleled by the increase in Israeli exports to China, saying that the balance of trade has become more difficult than before with the disparity.

### **Drug proven to slow progression of Parkinson's**

Azilect not only ameliorates the symptoms of Parkinson's disease - it has been proven to slow the disease's progression, Teva Pharmaceutical Industries announced.

The drug, an original one made by the Israeli drug company, reached all its goals in a Phase III late-stage clinical trial, the company said. It is the only drug known to not only treat the symptoms of Parkinson's, an incurable neurodegenerative condition, but to actually slow the disease.

Azilect, known as rasagiline in its generic form, is already approved to treat symptoms of Parkinson's. But the Israeli drugmaker wants U.S. and European regulators to expand the official labeling of Azilect's approved uses.

In its clinical trial, named “Adagio”, patients who took a tablet of Azilect once a day experienced slower disease progression in the early part of the trial and a steadying of symptoms in the last part of

the trial, Teva said yesterday. They also experienced a smaller decrease in baseline function.

Parkinson's disease patients who took Azilect tablets once a day from the time when they joined the trial demonstrated significant improvement compared to those who started the drug only nine months later.

In the trial, some patients were given an Azilect tablet once per day for 72 weeks, while others received a placebo for the first 36 weeks before being treated with Azilect. The Azilect tablets were given in strengths of 1 or 2 milligrams.

Adagio, one of the largest studies conducted on Parkinson's, encompassed 1,176 patients with very early-stage disease in 14 countries at 129 medical centers. Results were evaluated with the Total-Unified Parkinson's Disease Rating Scale, which measures the symptoms and progression of the disease, including its effects on mental state, motor skills and daily activities. The results were presented at the 12th congress of the European Federation of Neurological Societies in Madrid, Spain.

### Israel's first solar power station up and running in Negev

Israel's first solar power station is up and running. Moshe Tenne built the plant on his Negev farm for NIS 1.3 million, and he estimates he will sell NIS 220,000 of electricity a year to the national power grid.

The state incentives to produce solar power took effect on July 1; they allow home and industrial customers to install solar power panels and receive NIS 2.01 per kilowatt hour for the electricity they produce compared with the NIS 0.50 per kilowatt hour they pay the Israel Electric Corporation.

The new agreement is for photovoltaic cell array technology, and the power produced is intended for the producer's use, while any extra power may be sold to the IEC. The state limits household power plants to 15 kilowatts, and business customers to 50 kilowatts.

Tenne inaugurated his 50-kilowatt solar array. It will provide two-thirds of the needs of his central Negev farm, located on the region's so-called Wine Route. The Tenne family established its farm three years ago, and makes its living from a sophisticated dairy barn with 70 cows producing about 800,000 liters of milk a year.

Tenne's power plant has thin-film solar panels made by Sharp on 600 square meters of the cowshed's roof. He also installed another array of multicrystal silicon solar cells, a different technology. These are mounted on systems that track the sun during the day and are spread out over about a dunam of his farmland, about a quarter acre. The arrays were installed by the company Solar-Power. Tenne paid for the new power generating system with loans and out of his own funds.

## Our Best Wishes for a Happy, Healthy and Prosperous New Year



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