

# ISRAEL HIGH-TECH & INVESTMENT REPORT

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## Iron Dome ko's grad

During the 2006 Second Lebanon war approximately 4,000 Hezbollah-fired rockets, the great majority of which were short-range rockets and artillery shells.

Most all of the rockets fired were Qasams but Hamas has expanded their range by introducing 122 mm Grad launchers smuggled into the Gaza Strip. Nearly 1,000,000 Israelis living in the south are within rocket range, posing a serious security threat to the country and its citizens.

As a response to this threat Rafael Advanced Defense Systems developed the Iron Dome designed to intercept incoming rockets. The system was designed as a defensive countermeasure to the rocket threat against Israel's civilian population in its northern and southern borders. It is designed to intercept very short-range threats of up to 70- kilometers, in all weather conditions. On March 27, 2011 the system became operational for the first time. On April 7 the system proved its worthiness when it intercepted, for the first time, a Grad rocket fired from Gaza.

Following a successful deployment against a rash of rocket fire in early April, Israel is investing \$1 billion in the development and production of batteries

for its Iron Dome interception system. According to Defense News, Israeli Major General Udi Shani said that five countries are interested in the technology.



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On top of the \$1 billion, the systems developers, Haifa-based Rafael Advanced Defence Systems, will also receive \$205 million from the United States. The period of time over which this investment will be spread has not been announced.

The first of its kind, the system targets artillery shells as well as rockets, and was successfully deployed in two separate rocket attacks recently fired at Israel from Gaza.

Iron Dome is the localized portion of a three-tier protection system along with Arrow, which covers long-range ballistic missiles — and David's Sling, medium-range missiles.

### **Tempe-based Limelight acquires Israeli tech firm**

Tempe-based Limelight Networks Inc. said that it has acquired an Israeli company that offers technology to help speed up the presentation of websites and applications.

Limelight, which provides services that accelerate the delivery of videos, music, software updates and other content via the Internet, did not disclose how much it paid for Tel Aviv-based AcceloWeb. This transaction was completed with a combination of cash and Limelight stock.

YL Ventures participated in the deal as an investor, strategic adviser and board member.

AcceloWeb's technology addresses the bottleneck of presenting a site or application within a browser.

### **Broadcom acquires SC Square**

Wireless communications company

Broadcom Corporation (Nasdaq: BRCM) has announced that it is acquiring security software developer SC Square Ltd. for \$41.9 million in cash. Headquartered in Tel Aviv's Ramat Hahayal district, SC Square is a subsidiary of Nisko Projects and Communications Ltd.

In reporting the acquisition, Broadcom said, "With SC Square Ltd., Broadcom is acquiring an expert team of engineers focused on security, which is an essential ingredient across Broadcom platforms. This acquisition is part of Broadcom's strategy to acquire innovative technologies and high quality teams with a solid track record of execution."

Broadcom said that the boards of directors of the two companies have approved the acquisition, and that the transaction remains subject to the satisfaction of closing conditions and is expected to close in Broadcom's second quarter, ending June 30, 2011.

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SC Square is Broadcom's ninth acquisition in Israel and fourth acquisition since October 2010. The company bought semiconductor developer Provigent for 340 million in March 2011, image processing company Sightic Vista for \$10-20 million in November 2010, and femotocell co Percello Ltd. for up to \$98 million in October 2010.

Broadcom has hundreds of Israeli employees in eight centers around the country in Park Yakum, Airport City, Ramat Gan, Or Yehuda, Netanya, Herzliyah, Ra'anana, and Tel Aviv.

Intel Israel to produce n Ivy Bridge processor  
The company's Fab 28 in Kiryat Gat will be one of only two fabs worldwide to produce the processor.

Intel Israel Ltd. will produce Intel Corporation's (Nasdaq: INTC) new Ivy Bridge processor, even though Intel Israel did not develop the technology. The company's Fab 28 in Kiryat Gat will be one of Intel's two fabs to produce the processor. Intel spent \$2.7 billion to upgrade Fab 28 to 22-nanometer production technology.

Intel unveiled its next-general Ivy Bridge processor yesterday at a virtual event, which the company touted as the "most important technology announcement of the year."

At a conference call following the publication of Intel's first quarter financial report, CEO Paul Otellini said, "We will begin production of the 22-nanometer technology processor at the end of the year. This revolutionary technology will widen Intel's differentiation from its competitors in all segments of the computing world."

The solution Intel found to run forward and increase the number of processors on silicon chips has been on the agenda for a long time, and marks a fundamental change in chip design of the past 50 years: changing the transistors' operating space on processors to operate in three dimensions. Intel designed the Ivy Bridge processor to utilize a more complex silicon structure that includes an additional silicon layer on the wafer around which the flow control is more efficient than for regular transistors.

### **An Israeli technology that's groundbreaking – literally**

Archeologists around the world rely on a repertoire of only partially effective methods - historical texts, surface indicators and technology - to decide where to break ground to uncover sites of archeological significance. But the decision often comes down to educated guesswork, because it isn't possible to get a really clear look at what is going on underground.

Thanks to Prof. Lev Eppelbaum of Tel Aviv University's Department of Geophysics and Planetary Sciences. Eppelbaum has created a new non-disruptive, ecologically sound geophysical methodology, an "algorithmic toolkit," capable of cutting through the "background noise" of irrelevant underground features. It can detect archeological structures and artifacts up to 150 meters deep, producing an accurate 3D or even 4D image. Eppelbaum's method, dubbed the "Multi-PAM" (physical archeological models) System, uses a combination of up to seven different geophysical components to get an estimation of the underground landscape: magnetism; gravity; self-potential; VLF (very low frequency electromagnetic radio transmissions, the type the military uses to communicate

with nuclear submarines deep below the water's surface); resistivity; induced polarization (based on differences in electromagnetic properties); and piezoelectricity, which detects minerals and some archaeological objects made from fired clay.

The new methodology is somewhat costly to perform - in the thousands of dollars range. And, as Eppelbaum puts it, "Archeology is not a profit maker." However, the system has the potential to save archeologists a lot of money and time in the long run, since surveyors will be able to determine the location of sites with much more accuracy.

Besides the expense of the new technique, there may be a more insidious factor preventing its popular adoption by excavation administrators. "Even if the money did exist for it, many archeologists would be hesitant to take it on because of the implied reduction in time and budget that would result," he says. There also may be objections from property developers and government officials in Israel, who already need to consult with archeologists before starting to build in particular areas.

In Israel, Multi-PAM may be useful not only to survey the enormous number of archeological sites underground, but also to detect minerals and elements under the earth and sea's surface, and to uncover terrorist tunnels. "We are happy to apply it to other sites if we have the possibility," says Eppelbaum.

"For Israel, I think archeo-geophysical investigation is an absolute necessity," he says. "But it's hard to gather the support."

## **VC Reports: GKH Quarterly Private Equity (PE) Survey**

The Survey reviews Israeli private equity deals involving Israeli and foreign PE funds and other investors - both Israeli and foreign. This quarter is based on the activity of 34 private equity funds of which 16 are Israeli and 18 are foreign private equity funds.

In the first quarter of 2011, 11 private equity deals were closed in Israel, with an aggregate deal value of \$216 million. This amount was down 68 percent from 2010's quarterly average of \$668 million and 74 percent below the \$826 million (17 deals) of the previous quarter. Q4 2010 had included an exceptionally large deal - Apax's buyout of Psagot Investment House for \$576 million. Q1 2011 was also 78 percent under the \$979 million of Q1 2010 (19 deals), which was the highest quarter in 2010 based mainly on two large clean-tech-related deals in which Better Place raised \$350 million and BrightSource raised \$200 million.

In the first quarter of 2011, private equity deals valued at over \$50 million represented 49 percent of total aggregated deal value. Deals valued at \$20 million to \$50 million accounted for 16 percent, while deals valued at under \$20 million accounted for the remaining 35 percent. In the fourth and first quarters of 2010, deals valued at over \$50 million accounted for 70 percent and 71 percent, respectively, of total

aggregated deal value.

The industrial sector was the most attractive area for private equity funds in Q1 2011, accounting for 29 percent of total deal value. The infrastructure sector followed with 26 percent. In Q4 2010, the financial sector attracted 72 percent of capital invested, followed by real estate with 8 percent. In Q1 2010, the most attractive sector was cleantech with 56 percent of total deal value, followed by the industrial sector with 12 percent.

“The Israeli private equity industry spreads its investments over diverse sectors, with no specific focus. The most important factor in attracting PE investment is company revenue levels,” notes Marianna Shapira, Research Manager at IVC. “Successful companies with international sales and high overall revenues have the best chance of appealing to PE funds, especially foreign ones,” concludes Shapira.

The average deal in the first quarter of 2011 was valued at \$20 million, compared to \$49 million in the previous quarter and \$51 million in the first quarter of 2010.

#### Israeli Private Equity Deal Types

This survey reviewed the following types of financing deals in the Israeli private equity arena: straight equity, buyouts, mezzanine, distressed debt and turnaround/distressed equity.

Straight equity deals accounted for \$95 million (six deals) or 44 percent of total deal value in Q1 2011, compared to \$35 million (five deals) in the previous quarter, and \$670 million (six deals) in Q1 2010.

Buyout deals (three) were valued at \$82

million or 38 percent of aggregate deal value in Q1 2011, which compares with \$621 million or 75 percent in Q4 2010 and \$122 million or 13 percent in Q1 2010.

One mezzanine financing accounted for \$36 million or 17 percent of aggregate deal value, compared to \$68 million (three deals) or 8 percent in the previous quarter, and \$63 million (one deal) or 6 percent in Q1 2010.

One distressed debt deal was reported in Q1 2011 in an amount of \$3 million (1 percent), compared to six deals valued at \$102 million (12 percent) in the previous quarter, and six deals valued at \$124 million (13 percent) in Q1 2010.

In Q1 2011, the three largest Israeli private equity deals accounted for 65 percent of aggregate deal value. Israeli Infrastructure Fund (IIF) closed a buyout of Hayovel Lines, a toll highway operator of Highway 431, for \$55 million. Silver Lake followed with a \$50 million straight equity deal for Prime Sense. FIMI had the third largest deal - a \$36 million mezzanine financing of Alon Brands.

#### Israeli Private Equity Funds

IVC online database includes 27 Israeli private equity management companies, with total managed capital of \$7.1 billion. Of these, six Israeli companies had been established since 2009.

According to Rick Mann, Managing Partner of GKH, “What we see from Q1 2011 results is that PE funds with a strong local presence still represent the bulk of all private equity deals in Israel. Foreign PE funds are typically involved only in the larger PE deals, and those deals do not occur every quarter. I expect, however, that along with the continued

investment activity of the local PE funds, we will see foreign PE funds entering into several large transactions during the course of 2011.”

Will Leviathan oil shale discovery make Israel the next energy giant?

Talk about a game changer. Last year while prospecting the aptly named Leviathan Field in the waters between Israel and Cyprus, Texas based Noble Energy (NYSE: NBL) discovered a gargantuan deposit of natural gas buried a mile beneath the ocean floor and beneath an additional 20,000 feet of rock.

The Israel oil find, estimated at some 16 trillion cubic feet, is large enough that Israeli Prime Minister Benjamin Netanyahu told CNN interviewer Piers Morgan that his nation could forego building additional nuclear reactors and enjoy generations of natural energy, instead. “It is only a matter of time before Israel becomes a big gas exporter,” said Philip Wolfe, an energy banker at UBS, the investment bank” was quoted on the UK financial Web site Fullermoney.com

But the bigger news was still to come. Harold Vinegar, formerly Royal Dutch Shell’s chief scientists and currently chief scientist for Israel Energy Initiatives (IEI), “has devised an ambitious plan that would, if successful, turn Israel into one of the world’s leading oil producers,” according to the Energy Tribune. Vinegar believes that the oil shale deposits within a 238 sq km area known as the Shefla Basin hold some 250 billion barrels of oil, an amount roughly equal to Saudi Arabia’s proven reserves.

While a debate is currently being waged among Israelis over how royalties from these newly discovered energy riches should be utilized, some early winners

are have already become apparent. IEI, for example, is a division of the U.S. owned telecommunications firm IDT (IDT), whose stock has risen from below \$24 in mid March to nearly \$30 in April, while Noble Energy (NYSE: NBL) has gone from a mid-March price of around \$88 to a March 30 high of \$98.

Heavy hitting individuals have also moved into position. The Australian reports that “In November, 2010, an 11 per cent stake in Genie Oil & Gas, the division of IDC that is the parent company of IEI, was acquired for \$US11m... by Jacob Rothschild, the banker, and Rupert Murdoch, chairman of News Corporation.” Genie’s advisory board also includes the likes of Dick Cheney and hedge fund investor Michael Steinhardt, according to the article.

Following the excitement of the natural gas find, Delek Drilling, part owner of the Leviathan Field, has seen its share price drop from a high near \$1,600 last fall to just over \$1,400 in recent trading. Pink sheet stock Avner Oil & Gas (PINK: AVOGF), another company involved with the Leviathan field has also seen a modest fall from its November highs. Drilling at the field was recently halted due to technical reasons, Offshore Energy Today reports.

It’s important to note that exploitation of Israeli’s newly discovered energy riches has yet to begin in earnest, so even these falling stocks might pay off handsomely once a full blown extraction begins. Meanwhile, should energy revenues begin pouring into the Israeli economy, the energy boom will extend to the many high tech firms involved in energy exploration and recovery related robotics related to moving Israel’s oil and gas to energy hungry Europe.

To be sure, there are some clouds on the horizon, as Fast Company points out, “Leviathan straddles the Israeli-Lebanese maritime border. Israel is currently in a state of war with Lebanon and does not recognize the de-facto Hamas Palestinian government in the Gaza Strip.”

### **For haredi clients kosher cellular phone with Hasidic folk music**

An Israeli telecom company is offering ultra-Orthodox Jewish clients a kosher smartphone with Hasidic folk music ringtones and a menu in Yiddish.

While other firms have tapped into the religious market by offering phones free of Internet access, with no email or access to Facebook, which could lead users into temptation, none has so far offered its services in Yiddish.

“This phone has no text messages, Internet access, Facebook or email. It doesn’t even have a camera,” said the paper.

“And if you call from it on Shabbat, you will pay an exorbitant price of NIS 10 shekels (\$2.93) per minute.”

And all the menus are in Yiddish – the traditional German-derived language still widely used by haredi Jews, with the local market estimated between 350,000 to 400,000 people.

Local importer Accel Telecom said it took four months for a pair of ultra-Orthodox translators to come up with the interface which is written in Hebrew characters and uses words such as “Klingen” (ringtone) and “Schirm Verteidigung” (screen-saver).

But to win rabbinical approval for the device, which is based on an Alcatel T-701 handset, Accel had to first prove that tech-savvy users would not be able to work their magic to circumvent the safeguards and succumb to sin.

“It is not simple to make the phones kosher and bring them to a level in which you prove that the phone cannot be breached or changed in such a way that it will be possible to send text messages or surf the Internet with it,” Accel CEO Mark Seelenfreund said.

### **Getty buys image copyright monitor PicScout for \$20M**

Getty Images has acquired PicScout, a leader in protecting the copyright of images on websites.

Getty is one of Israeli-based PicScout’s main clients. Several websites in Israel listed the sales price at \$20 million.

Getty Images said it will invest in PicScout’s technology to improve and expand the protection of intellectual property. Getty said it would maintain the PicScout brand.

PicScout’s applications based on the ImageIRC platform include ImageTracker and ImageExchange. Its ImageTracer monitors the use of images on the web for copyright protection.

With the rapid growth of social media and websites, it has become increasingly difficult for photographers and companies to protect the use of their images. In one example on PicScout’s blog, a photographer said his self-portraits were taken from his Flickr account and used in more than 40 countries.

PicScout recently released new versions of ImageExchange for Safari and Chrome browsers

In a blog post, PicScout co-founder Offir Gutelzon said that the company's R&D and operations teams will remain in Israel.

PicScout will remain as a brand, continuing to support a myriad of applications based on the ImageIRC platform, including ImageTracker and ImageExchange. The acquisition by Getty serves as an opportunity for PicScout to further expand and accelerate its offerings as it delivers against the promise of Every Image Gets Its Credit.

Over the past 15 years, Getty has made a number of acquisitions that have allowed the Seattle company to become one of the world's largest purveyors of digital images.

In April 2010, Getty acquired celebrity photo site Rex Features. In October 2008, Getty purchased Jupiter Images' online images unit for \$96 million.

In July 2008, Getty was taken private in a \$2.4 billion buyout by private equity firm Hellman & Friedman.

### **Rafael lines up \$1.8 billion India deal**

Israel's Rafael Advanced Defense Systems is expected to secure an anti-tank missile order worth \$1 billion from the Indian military, consolidating the Jewish state as a key arms supplier amid a major armed forces upgrade.

Rafael, which posted a record net profit of \$178.6 million in 2010, is also in line to secure arms sales to South Korea

worth \$500 million a year.

These underline a new focus by Israel's high-tech defense industry on the Asian market, spurred in part in response to China's military buildup.

According to Defense News, a U.S. weekly, Rafael will sell the Indian army 8,356 Spike anti-tank missiles with 321 launchers, 15 training simulators and associated equipment.

Rafael was the only bidder in the Indian tender unveiled last June and the Indian army had to obtain a special government permit to sign a deal with the sole bidder.

It isn't clear whether companies that didn't make bids -- General Dynamics Corp. and the Raytheon Co. of the United States, Rosoboronexport of Russia and Europe's MBDA -- had refused to share technology.

The Indians intend to mount the precision-guided Spikes on Russian-built combat vehicles. The Israeli missiles reportedly met all the Indians' requirements -- a range of 1.5 miles in day or night conditions, a 90 percent accuracy rate and include a 3G active-passive fire-and-forget guidance system.

Rafael, which a decade ago was a loss-maker, announced financial results March 23, listing 2010 sales at \$1.97 billion and an orders backlog of \$3.56 billion at year-end.

Rafael also cited a slowdown in demand for defense products in key world markets as defense budgets were adjusted following the 2008 financial meltdown.

But Chief Financial Officer David Vaish told the Globes, an Israeli business daily:



“We’re still talking about a very handsome orders backlog, which amounts to almost two years of sales. This is not a crisis.”

Israel depends on military exports to keep its defense industry going to supply much of its own military needs.

Rafael is pinning export hopes on its newly unveiled Trophy missile defense system for tanks, currently being fitted to the Israeli army’s Merkava tanks and armored personnel carriers.

The South Koreans are set to deploy the long-range version of Rafael’s Spike missile in 2012 on Yeonpyeong Island, which was shell by North Korea in November.

“The military is hoping to purchase some 50 Spike missiles equipped with a global positioning system,” a government source in Seoul told the Yonhap News Agency in February.

The Indians are keen on acquiring the Arrow-2 anti-ballistic missile system built by Israel Aerospace Industries and the Boeing Co. that has been used in Israel since 2000 to counter Iran’s Shehab-3b missiles.

But any deal on that would require U.S. approval since the Americans share in the financing, development, production and assembly of the system.

The Arrow hasn’t been cleared for foreign sales but when it is India, one of the Israeli defense industry’s largest customers, is likely to be top of the list.

Among recent big-ticket Israel arms sales to India are:

-- Rafael’s \$1 billion contract in 2009 to provide 18 Spyder surface-to-air missile systems by 2012.

-- IAI’s 2009 \$1.1 billion deal for advanced Barak-8 tactical air-defense system, primarily for use aboard warships.

-- India launched an IAI-built RISAT-2 all-weather spy satellite from the Sriharikota launch site in southern Andhra Pradesh state, forging strategic cooperation in space projects between the two allies.

-- IAI sold the Indian air force three Phalcon early warning aircraft worth \$1.1 billion in 2004., during which New Delhi supported the Arab cause.

But it wasn’t until the Hindu Bharatiya Janata Party came to power in 1998 that the defense partnership was really forged.

All told, Israeli companies have sold India weapons systems and other military equipment worth more than \$10 billion over the last decade, making Israel New Delhi’s second largest supplier after Russia.

Hindu-dominated India established diplomatic relations with Israel in 1992 following the end of the Cold War.

### **Learning how to live in a parched environment**

Approximately 45 percent of the people in the world live in dry lands, defined as regions that get 600 millimeters or less of rain a year, according to Alon Tal, a professor at Ben-Gurion University, which oversees the Blaustein Institutes.

Deserts, moreover, are on the march. About 15 percent of the world’s lands

have been degraded in recent decades though salinity, overexploitation, rapid population growth and soil loss.

“Desertification has been left behind because it is perceived as an African issue, but there is not a challenge that is easier to overcome than desertification,” Tal said. “You aren’t going to plant the same crop in a hyper-arid zone as an arid zone. You can’t plant the same kind of trees [in regions that get] 270 millimeters of rain.”

Climate change further exacerbates the problem. For example, Sde Boqer, a small Negev town where the three Blaustein Institutes are based, usually gets around 40 to 90 millimeters of rain a year. In 2010, only 30 millimeters fell and nearly everyone can tell you the

The research spans the gamut of dry: hydroponics, plant breeding, demographics, solar technology.

Evyatar Erell, for instance, has a number of projects underway on desert architecture and urban planning. (The urban heat island, he informs me, was actually first identified in England in the early 1800s.)

David Faiman, meanwhile, oversees the National Solar Energy Center, another part of the umbrella. Some of the intellectual property behind concentrator companies like ZenithSolar has come out of here. The Center also lets private companies like HelioFocus test prototypes.

Is desert research an economic opportunity or a tool for diplomacy? Both, actually. Researcher Yair Kaufman at the Zuckerberg Institute for Water Research (one of the organizations inside Blaustein)

is developing a desalination membrane powered by aquaporins, a protein in human and animal cells that purifies water.

Ideally, aquaporin desalination could cut the amount of energy required for desalination by 50 percent and the ultimate cost by one-third. A Danish company, appropriately called Aquaporin, is racing toward the same goal.

Meanwhile, Professor Zeev Weisman and a team of researchers want to optimize olive strains for food production and fuel. Approximately 5 to 7 percent of the total olive mass, however, can be converted to biodiesel. The olive stone can also serve as a feedstock for cellulosic ethanol. In other words, two fuels (and food) from one plant. He’s also working on pomegranates for medicinal use. Either crop could become a money spinner for farmers.

Another idea that could go commercial is a solar thermal hot water heater that helps ensure that warm water will be available early in the morning by manipulating liquid flows and pressure in a novel manner. Professor Dan Blumberg likens it to virtualization for solar hot water.

At the same time, projects and initiatives seem calculated to win friends, too. A prototype system for inland desalination — which relies on brackish swamps rather than seawater — will go live this year in Jordan.

“As water stressed as Israel is, Jordan is even more so. In Amman, not everyone has water,” said Jack Gilron, the CTO at Rotec, the company commercializing tapered flow, and a professor at the Zuckerberg Institute.

Jordan may also become the locale of a large-scale desalination plant that will dump its brine into the Dead Sea through a link billed as the Peace Conduit.

Some researchers are examining how to preserve gerbils and other native animal species. Others, meanwhile, are making an argument for water conservation: Reliance on desalination could lead to a need for nuclear power in a region already known for fractured politics. 'Soil is very precious. You should stop thinking about it as dirt.'

Bruins, who also serves as a consultant to the United Nations and other organizations as a food-security specialist, adds that this work — or failure to continue this work — will have global consequences. Droughts and desertification lead to humanitarian crises, which can turn into border conflicts and refugee migrations.

The margin for error, moreover, has become thin. Back in the '70s, banks convinced agribusiness conglomerates to cut costs by eliminating silos and storage facilities.

Biofuels consume a small portion of harvested crops, but have a disproportionate impact on pricing due to razor-thin supplies.

"Because of that, for the first time ever, there are no food stocks. In a good year, there is barely enough," he said. If China were to experience a major crop failure, all of the food exports in the world couldn't make up the difference.

### **Electric car**

Shai Agassi, the founder of Better Place, the most sophisticated electric-car enter-

prise in the world, projects the ebullient confidence of a man facing a giant wave of money. "Within less than this decade the No. 1—selling car in the world will be the electric car," he says. "It's the biggest financial opportunity the world has ever seen. We're seeing a \$10 trillion shift in an industry in less than a decade. It's the Internet, and add another zero."

The People's Republic has been busy creating a bourgeoisie, and the middle class does like to drive. Beijing's next five-year plan foresees at least 170 million new vehicles, or perhaps twice that, according to Agassi. The lower estimate alone is as many cars as there are in Germany, France, Spain, Italy and Britain combined. The 8 million barrels of oil that would be required every day to fuel them is about as much as the U.S. imports every day. "Do you know what the price of oil will be in five years if they're not using electric cars?" Agassi asks.

Enter Better Place, the start-up that makes more than electric cars. It also makes an entire infrastructure intended to free automobiles from the stubborn limits of battery life. When the enterprise launches in Israel later this year, drivers should be able to travel anywhere in the country in cars with a battery range of 100 miles (160 km). If they set off from Tel Aviv to the Red Sea, a journey of 200 miles (320 km), they will be able to pull into a Better Place station along the highway and exchange their low battery for a fully charged one. The process should take about five minutes. Otherwise, the car can recharge overnight via a plug that snaps into the little door above the rear wheel where gas would go if the car burned gas. The vehicles can also trickle charge in parking lots where the company's distinctive blue-topped posts

## Marvell to invest \$200m in Israel R&D center

Marvell Technology Group (Nasdaq: MRVL) co-founders, chairman and CEO Dr. Sehat Sutardja and his wife, VP Weili Dai will tell President Shimon Peres that the company will invest \$200 million in the coming year in its Israeli development center. Marvell's Israeli development center has 1,200 employees, and it is the company's largest center outside the US. Marvell has 5,800 employees altogether.

Although Marvell has \$3 billion in cash, Sutardja says that acquisitions are not necessarily on the agenda. He said "you are invited to propose suitable companies for us. The truth is that we bought most of the technologies we wanted years ago, including storage technologies. I tell anyone who asks me about a particular technology, 'What do you know? We did that long ago'."

Marvell has acquired three Israeli companies including Galileo Technologies Ltd. in 2001 for \$2.7 billion.

## Medigus unveils world's smallest medical camera

The camera is for endoscopic diagnoses and surgical use. Its disposability is an economy, explains Medigus: since sterilizing such cameras is expensive and difficult - and can lead to infection.

## Citigroup to buy Ness for \$307m.

US Citigroup said that it would acquire information technology service provider Ness Technologies Inc, for about \$307 million in cash.

The acquisition is being done by Citigroup's venture capital arm Citi Venture Capital International (CVCI), which will pay Ness \$7.75 per share, a 16 per cent premium to yesterday's closing price of Ness on Nasdaq.

Founded in 1999 and based in Tel Aviv, Israel, Ness provides IT and business services and solutions with specialised expertise in software product engineering; and system integration, application development, consulting and software distribution.

## Permira buys drip copy Netafim for \$850m.

In a surprising development this weekend, the privately-held European investment fund Permira closed a deal to buy out four of irrigation technology company Netafim's five main shareholders.

Permira is buying out the interests of Markstone (20% ), Tene (10% ), and the kibbutzim Magal (24% ) and Iftach (8% ), for about \$530 million. The deal prices Netafim, a pioneer in drip irrigation technology systems, at \$850 million, not including the company's debt. Including the debt, the deal prices Netafim at about a billion dollars.

Left outside the deal is Kibbutz Hatzerim, which owns 38% of Netafim.

None of this means the deal is done: Hatzerim has a right of first refusal to buy out its partners in Netafim. It can either grant the buyout its blessing or meet the price.

Netafim was founded 45 years ago in Kibbutz Hatzerim. Over the years certain

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The

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divisions have been sold off.

Octopuses are not only smart, but they

### **Image sensor co Advasense acquired by Pixim**

Advasense raised \$31 million in 2005-07, but has reportedly been sold for only a few million dollars.

Pixim Inc. of the US has acquired Advasense Technologies Ltd., a developer of next-generation CMOS image sensor technology. The companies did not disclose the value of the deal, which was mostly in shares, warrants, and the assumption of Advasense's debt, but it was reportedly for a few million dollars.

Advasense was founded in 2005, and a review of the company's founders and management indicates its potential. The company chairman is backed by Gideon Barak, one of Israel's top high-tech entrepreneurs, whose achievements was the sale of DSP Communications to Intel Corporation (Nasdaq: INTC) for \$1.6 billion, and by Vladimir Koifman, a former executive at Applied Micro Circuits Corporation (Nasdaq: AMCC). Advasense CEO Naftaly Sharir was formerly CEO of Emblaze Research Ltd., which was sold to Zoran Corp. (Nasdaq: ZRAN), and of Electronics Line 3000 Ltd. (EL3K) (FSE:ELN).

According to Israel Venture Capital (IVC), Ra'anana-based Advasense raised \$31 million in 2005-07 from Giza Venture Capital, BlueRun Ventures, VentureTech Alliance, and Taiwan's CIDC.

But the names, money, abilities, and technologies were not enough. Advasense's story is more complicated than that of the usual start-up, as is its acquisition agreement with Pixim. A lot of

money and quick footedness are needed to complete in the target markets, and in 2009, in the midst of the global financial crisis, the company's investors gave up. Advasense changed direction, and its management and employees, took control of the company together with Kreos Capital. The company restructured, fired employees, and focused on a business model that quickly generated millions of dollars in revenue from the sales of user licenses to its technology. The road ahead was clear. Sharir said, "When the acquisition offer came, we knew we'd take it."

### **Israel hits \$7.2 billion in arms exports**

Israel's defense industry racked an unprecedented \$7.2 billion in exports in 2010, up on the \$6.9 billion achieved in 2009.

That put Israel among the world's top four arms exporters but declining military budgets around the world are likely to reduce sales over the coming years.

"We recognize the challenges but we're working hard to maintain the level we're currently at and even to increase it," said Reserve Brig. Gen. Shmaya Avieli, head of the Defense Ministry's Foreign Defense Assistance and Defense Export Department.

The Israelis are hoping to secure big-ticket deals at the Paris Air Show, a major international defense industry showcase next week at the Le Bourget exhibition center.

Government figures indicate Israeli defense companies sold military hardware worth \$9.6 billion in 2010, \$2.4 billion of it to Israel's military.

But meantime, China, once a promising market for Israeli weapons and electronic systems, remains off-limits, largely because of Israel's ally, the United States.

The Americans blocked the sale of four \$250 million Phalcon advanced early warnings aircraft to the People's Liberation Army in 2000, citing U.S. components used in the systems carried by the aircraft. Beijing was furious.

Israeli Defense Minister Ehud Barak, who sanctioned the Phalcon deal, is currently in Beijing, the first such visit in a decade.

Israeli officials, however, stressed the policy of no weapons sales to China is still in place.

In 2005, Israel agreed to upgrade Israeli Aerospace Industries unmanned aerial vehicles sold to Beijing in the 1990s. The United States responded by downgrading Israeli's participation in the F-35 Joint Strike Fighter program. The drone upgrade was scrapped.

The Americans remain uneasy about Israeli defense links to China, in particular about the Chengdu J-10, China's new air force fighter, which reputedly involves technology from the joint U.S.-Israeli Lavi fighter project of the 1980s.

The delta-winged Lavi, being developed by IAI, was canceled in 1987 under political pressure from Washington because of soaring costs.

The Americans, who provide Israel with \$3 billion a year in military aid, were also reluctant to fund a project that would compete with Lockheed's F-16 Fighting Falcon, the leading U.S. fighter of the day.

Arieh Herzog, head of the Israeli Missile Defense Organization, said in May that Israel halted sensitive technology transfers to China in 2005 and created an office to oversee military exports.

Six years after the Pentagon blocked Israel from advanced military technology over concerns about leaks to China, Washington is once again funding Israeli high-profile air-defense missile systems development.

These focus mainly on IAI's Arrow high-altitude, long-range interceptor designed to down Iranian ballistic missiles and deployed in 2000, and the Iron Dome, intended to counter short range projectiles, which got its baptism of fire in March and April.

Iron Dome is being built by Rafael Advanced Defense Systems of Israel. The U.S. Congress authorized \$205 million to support the Iron Dome program in early 201

The system will be one of the main attractions in the Israeli pavilion at the Paris Air Show.

Another Israeli missile defense system, David's Sling, designed to counter medium range rockets and missiles, is currently being developed by Rafael in partnership with the U.S. Raytheon Corp.

Increasingly, Israel's defense industry is looking to the Third World for exports. Asia and Latin America, where several states' energy-fueled economies are taking off, have become prime targets, particularly since Israel's alliance with Turkey, a major arms market, collapsed in 2009.