

ISRAEL HIGH-TECH & INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES JOSEPH MORGENSTERN, Publisher
February 2009 Vol. XXIII Issue No.XII You are invited to visit us at our website: <http://ishitech.co.il>

From the Lab to the Market Place



From its establishment, YEDA, the commercialization arm of the Weizmann Institute, has concluded numerous contracts with various investors. Examples of products and processes transferred to industry: Interferon- β , both native and genetically engineered; COP-1, a synthetic copolymer for treatment of multiple sclerosis; novel vitamin D derivatives; bovine growth hormone; Hepatitis B vaccine; Fine chemicals, research and diagnostics reagents; Improved crop varieties and new hybrids cultivars; flame retardant materials; data security products, and computer-related technologies.

YEDA has participated in the establishment of a large number of companies to directly exploit Institute discoveries, some of the prominent ones being InterPharm Laboratories Ltd., today a subsidiary of Serono N.V., XTL Ltd, NDS Ltd, Proneuron Biotechnologies, and Portman, Pharmaceuticals Inc., now part of Peptor Inc. Even when the results of the basic research at the Weizmann Institute are translated directly to medical application, it may take years to reach patients. But, once in a while, a finding can change lives almost immediately.

In this issue we bring to you some recent developments of ongoing scientific research at the Institute.



In 2006, Prof. Nava Dekel of the Institute's Biological Regulation Department, together with doctors in the IVF unit of Kaplan Medical Center, made the surprising discovery that

performing a uterine biopsy – causing a slight injury to the lining of the uterus – just before a woman undergoes in vitro fertilization (IVF) doubles the chances of a successful pregnancy. Although the mechanism was not completely clear, Dekel and her team assumed that the injury provokes a response in the uterus that makes it more receptive to the embryo's implantation.

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Vector finally gets Aladdin

VC survey indicates widespread pessimism for 2009

The next year, Dekel was in Toronto, Canada, giving a lecture in the framework of the Weizmann Women and Science series, organized by Weizmann Canada. That lecture was reported in detail in a local Jewish newspaper, where it caught the attention of Howard and Roslyn Kaman. After many years of undergoing unsuccessful fertility treatments, failed IVF and miscarriages, the article gave the couple new hope. They contacted Dekel by e-mail, and she referred them to Drs. Amichai Barash and Irit Granot, who had participated in the original research along with Drs. Yael Kalma and Yulia Gnainsky of the Weizmann Institute.

The doctors in Rehovot sent, as requested, a detailed description of the procedure, which was then performed in a fertility clinic in Toronto. The result: A healthy baby girl, Hannah Esther Angel Kaman, was born this past October.

Weizmann Institute Scientists Create Working Artificial Nerve Networks

Scientists have already hooked brains directly to computers by means of metal electrodes, in the hope of both measuring what goes on inside the brain and eventually healing conditions such as blindness or epilepsy. In the future, the interface between brain and artificial system might be based on nerve cells grown for that purpose. In research that was recently featured on the cover of Nature Physics, Prof. Elisha Moses of the Physics of Complex Systems Department and his former research students Drs. Ofer Feinerman and Assaf Rotem have taken the first step in this direction by creating circuits and logic gates made of live nerves grown in the lab.

When neurons – brain nerve cells – are grown in culture, they don't form complex “thinking” networks. Moses, Feinerman and Rotem wondered whether the physical structure of the nerve network could be designed to be more brain-like. To simplify things, they grew a model nerve network in one dimension only – by getting the neurons to grow along a groove etched in a glass plate. The scientists found they could stimulate these nerve cells using a magnetic field (as opposed to other systems of lab-grown neurons that only react to electricity).

Experimenting further with the linear set-up, the group found that varying the width of the neuron

stripe affected how well it would send signals. Nerve cells in the brain are connected to great numbers of other cells through their axons (long, thin extensions), and they must receive a minimum number of incoming signals before they fire one off in response. The researchers identified a threshold thickness, one that allowed the development of around 100 axons. Below this number, the chance of a response was iffy, while just a few over this number greatly raised the chance a signal would be passed on.

The scientists then took two thin stripes of around 100 axons each and created a logic gate similar to one in an electronic computer. Both of these “wires” were connected to a small number of nerve cells. When the cells received a signal along just one of the “wires,” the outcome was uncertain; but a signal sent along both “wires” simultaneously was assured of a response. This type of structure is known as an AND gate. The next structure the team created was slightly more complex: Triangles fashioned from the neuron stripes were lined up in a row, point to rib, in a way that forced the axons to develop and send signals in one direction only. Several of these segmented shapes were then attached together in a loop to create a closed circuit. The regular relay of

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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nerve signals around the circuit turned it into a sort of biological clock or pacemaker.

Moses: "We have been able to enforce simplicity on an inherently complicated system. Now we can ask, 'What do nerve cells grown in culture require in order to be able to carry out complex calculations?' As we find answers, we get closer to understanding the conditions needed for creating a synthetic, many-neuron 'thinking' apparatus."

Weizmann Institute Scientists Discover How Cancer Cells Survive a Chemotherapy Drug

What separates the few cancer cells that survive chemotherapy – leaving the door open to recurrence – from those that don't? Weizmann Institute scientists developed an original method for imaging and analyzing many thousands of living cells to reveal exactly how a chemotherapy drug affects each one.

For research student Ariel Cohen, together with Naama Geva-Zatorsky and Eran Eden in the lab of Prof. Uri Alon of the Institute's Molecular Cell Biology Department, the question posed an interesting challenge. To approach it, they needed a method that would allow them to cast a wide net on the one hand – to sift through the numerous cellular proteins that could conceivably affect survival – but that would let them zoom in on the activities of individual cells in detail, on the other. Letting the computer take over the painstaking work of searching for anomalies enabled the team to look at the behavior of over 1000 different proteins. Even so, it took several years to complete the project, which entailed tagging the specific proteins in each group of cancer cells with a fluorescent gene and capturing a series of time-lapse images over 72 hours. A second, fainter fluorescent marker was added to outline the cells, so the computer could identify them. A chemotherapy drug was introduced 24 hours into this period, after which the cells began the process of either dying or defending themselves against the drug.

The team's efforts have produced a comprehensive library of tagged cells, images and data on cancer cell proteins – a virtual goldmine of ready material for further cancer research. And they succeeded in pinpointing two proteins that seem to play a role in cancer cell survival.

Although most of the proteins behaved similarly

in all the cells, the researchers found that a small subset of them – around five percent – could act unpredictably, even when the cells and drug exposure were identical. The scientists called these proteins bimodal, as they acted in one of two ways. The team then asked whether any of the bimodal proteins they had identified were those that occasionally promote cell survival. They found two molecules that seem to fit the bill. One of them, known by the letters DDX5, is a multitasking protein that, among other things, plays a role in initiating the production of other proteins. The other, RFC1, also plays varied roles, including directing the repair of damaged DNA. When the researchers blocked the production of these proteins in the cancer cells, the drug became much more efficient at wiping out the growth.

Cohen: "This method gave us tremendous insight into how a cell responds to a drug. By conducting an unbiased study – we started with no preconceived notions of which proteins were involved – we were able to pinpoint possible new drug targets and to see how certain activities might boost the effectiveness of current drugs." —

Check Point earnings beat analysts' estimates



Check Point
SOFTWARE TECHNOLOGIES LTD
Secure the Inter...

Internet and network security company Check Point Software Technologies Ltd (CHKP) reported higher fourth-quarter profit before one-off items, beating analysts' estimates and sending its shares higher.

The Israel-based company said first-quarter results should be in line with analysts' expectations but said it could not provide a full-year outlook due to economic uncertainty.

"All guidance is very risky now," Chairman and Chief Executive Gil Shwed told a news conference. "The global economy makes full-year guidance difficult."

Forecasts were also made difficult by uncertainty over the precise timing of its acquisition of Nokia's (NOK1V.HE: Quote, Profile, Research, Stock Buzz) security appliance business, expected in March.

"While it's hard to predict the effect of the economy

on our market, we will continue to invest and innovate," Shwed said.

Following the Nokia deal Check Point is continuing to look for acquisitions, Shwed said, adding that the global financial crisis had created more opportunities.

The company has cash of \$1.44 billion.

Fourth-quarter net profit totalled \$86.5 million, or 41 cents a diluted share, compared with \$87.9 million, or 39 cents a share, a year earlier.

Excluding one-time items, earnings per share rose to 50 cents from 46 cents a year earlier.

Revenue in the quarter increased to \$217.6 million from \$206.7 million a year earlier.

Analysts on average expected EPS of 47 cents excluding items on revenue of \$216.36 million.

"Overall, fourth-quarter results were respectable in a challenging environment," Bank of America Merrill Lynch analyst Garrett Bekker said.

Shwed said Check Point experienced good performance from all regions, including the United States, which was surprisingly strong despite the weak economy.

"The investments we have made in emerging markets began to pay off as we realised over 20 percent growth in Asia and Eastern Europe and over 40 percent growth in Latin America and the Middle East," Shwed said.

He estimated the company would earn 40 to 46 cents a share, excluding one-off items, in the first quarter on revenue of \$190 million to \$208 million.

The first quarter is typically weaker than the fourth.

Analysts estimate Check Point will earn 43 cents a share on revenue of \$200.8 million in this quarter, according to Reuters Estimates.

Shwed said Check Point had managed to maintain

a strong financial position in part because the security market was less sensitive to recession than other technology sectors. Tessera focuses on higher quality camera phones

Tessera focuses on higher quality camera phones

Tessera, a US-based provider of miniaturization technologies for the electronics industry has acquired Israeli technology firm Eyesquad, in a move that could lead to the development of cell phone cameras so advanced that they can compete with long lens professional cameras in terms of picture quality.

Tessera's \$24 million takeover of Eyesquad, completes a two-year acquisition program during which Tessera bought Israeli chip wafer manufacturer Shellcase and North Carolina-based micro optics company Digital Optics. Tessera now owns all the technology it needs to provide image sensor and camera module manufacturers with a camera module that includes advanced auto-focus and optical zoom, wafer level packaging, and wafer-level optics.

Eyesquad's technology is key to this strategy as it equips cell phones with features such as high quality images, optical zoom, automatic focus and close up images, without changing the lens of the cell phone camera. Its technology automatically brings objects into focus without the use of moving parts.

When the acquisition is complete Eyesquad will become a wholly-owned subsidiary of Tessera and will be integrated with the Tessera Israel operations.

Teva and Swiss Lonza in biogenerics collaboration



Teva Pharmaceutical Industries Ltd. (Nasdaq: TEVA; TASE: TEVA) and Switzerland's Lonza Group Ltd. (SWX: LONN) will set up a joint venture to develop, manufacture and market biosimilars of selected biologic pharmaceuticals.

Teva said that the venture would bring together

Lonza

the complementary capabilities of the two companies that will significantly advance their efforts to secure a leading position in the emerging biosimilars market.

Teva president and CEO Shlomo Yanai said, "We had identified biosimilars as a major growth driver for Teva in our long-term strategy and have been augmenting our knowledge base, capabilities and infrastructure to position Teva as a leader in this market. This strategic partnership bolsters our biologics capabilities. Lonza is an ideal partner for Teva in this field with its deep knowledge and experience in biopharmaceutical development, large scale manufacturing and state of the art manufacturing facilities. Combined with Teva's global leadership and expertise in clinical development and marketing of generic pharmaceuticals, the joint venture generates significant opportunities and benefits for both companies."

Lonza CEO Stefan Borgas added, "The field of biosimilars is a natural extension of Lonza's existing life-sciences portfolio, and represents the next strategic step for the company. With Teva we have found the right strategic partner to develop this new activity, which will deliver new opportunities for both companies."

The joint venture is due launch during the first quarter of 2009. Teva did not disclose the financial aspects of the deal.

Lonza is headquartered in Basel, Switzerland. In 2007, Lonza had sales of CHF 2.87 billion.



Insight into the origin of galaxies advanced by Hebrew University Astrophysicists

A new theory as to how galaxies were formed in the Universe billions of years ago has been formulated by Hebrew University of Jerusalem cosmologists. The theory takes issue with the prevailing view on how the galaxies came to exist.

The new theory, motivated by advanced astronomical observations and based on state-of-the-art computer simulations, maintains that the galaxies primarily formed as a result of intensive cosmic streams of cold gas (mostly hydrogen) and not, as current theory contends, due primarily to galactic mergers. The researchers show that these mergers had only limited influence on the cosmological makeup of the universe as we know it.

The results of the cosmology research group, led by Prof. Avishai Dekel, who holds the Andre Aisenstadt Chair of Theoretical Physics at the Racah Institute of Physics of the Hebrew University, appear in the current issue of the journal Nature.

The galaxies are the building blocks of the Universe. Each of them comprises some hundred billion radiant stars, such as our sun, which extend across about 50,000 light years. Every galaxy is embedded in a spherical halo made of dark matter that cannot be seen but is detected through its massive gravitational attraction. The exact nature of this matter is still unknown.

The galaxies are composed into two major types: spiral and elliptical. The spiral galaxies, such as our Milky Way, are rotating disks, rich in hydrogen gas, and are constantly forming new stars. The young stars give the spiral galaxies a blue tint. In contrast, the elliptical galaxies have bodies with a larger, more rounded shape, and are made of old, red stars that are devoid of gas. They are therefore referred to as red and dead.

The attempt to understand the way in which these two types of galaxies form is the primary challenge facing modern cosmological researchers. The formation of galaxies is an essential stage in the cosmological process that leads to the formation of life.

The accepted model until now has as its basis the idea of spherical gas infall into a central disk, followed by mergers between disks. The assumption is that the stars formed slowly within the gaseous disks, and that the disks converted into globes when they merged. In such a merger, the colliding gas clouds produce a big burst of new stars at a rate of

hundreds of solar masses per year.

This model has lately been put to question as a result of astronomical observations using new and more powerful telescopes which enable observations at greater depth into the Universe, making it possible thus to examine what happened in the galaxies some ten billion years ago (about three billion years after the Big Bang which first established the Universe). "The large galaxies, as they appear in this early stage, indeed created stars at a very rapid rate, but this does not appear to be at all a result of galactic mergers," says Prof. Dekel. The astronomical observations were led by researchers in Garching, Germany, headed by Prof. Reinhard Genzel of the Max Planck Institute, whose group is collaborating with the Hebrew University researchers.

The question that emerged was how these galaxies were able to form stars so quickly and in large quantities at such an early stage without massive galactic mergers.

In the article published in *Nature*, Prof. Dekel and his Hebrew University and French associates, pose their new theoretical model, which explains these observed phenomena. Their findings are based on computer simulations carried out by the French researchers headed by Prof. Romain Teyssier. The simulations, using one of the most powerful supercomputers in Europe, made it possible in an unprecedented manner to carry out a detailed investigation of how galaxies formed in the early Universe.

The picture that emerges is of galaxy-building that results from a continuous flow of cold gas along a few narrow streams rather than by mergers. These gas streams follow the filaments of the "cosmic web" that defines the large-scale structure of matter in the Universe, filaments that feed the dark-matter halos in the first place. These cold gas streams penetrate through the dark-matter halo of each galaxy and the hot gas that fills it and reach the center, where they become a rotating disk. These disks, each subject to its own, local, gravitational forces, break into a few giant clumps in which the gas converts into stars very efficiently.

In their calculations, Dekel and his group show that the rate of star formation, as predicted by this theory, is compatible with the observed rate. The researchers refer to these massive star formers in the early universe as Stream-Fed Galaxies (SFG). The galaxy merger phenomenon, in this view, was not the primary factor as maintained in current theory.

Prof. Dekel and his Hebrew University associates, Prof. Re'em Sari and Dr. Daniel Ceverino, worked out a simple physical theory that explains the formation of giant clumps in the early massive disks, and how they are driven by the cosmic streams. They predict that the migration of these clumps to the disk centers led to the formation of elliptical galaxies already in the early Universe, independent of galaxy mergers. They are thus making the revolutionary proposal that the role of cosmic gas streams is not limited only to the formation of star-forming disks, but that these streams are also responsible for the subsequent formation of the red-and-dead elliptical galaxies. New state-of-the-art simulations confirm this theory.

TASE 2008 Highlights



The downturn in world financial markets, which began in 2007, picked up steam in 2008, affecting the Israeli economy and Tel Aviv Stock Exchange (TASE).

In the course of the year, the U.S. real estate market tumbled and dragged the U.S. financial services industry down with it, a development, which in turn impacted banks around the globe. These events precipitated a crisis, which placed the global financial system at risk.

Developments in Israel differed from those elsewhere, since in many respects, the state of the economy coming into the crisis was favorable, as reflected in growth, fiscal and balance-of-payment figures. The local real estate market did not suffer from "bubble" conditions nor did the local banks become inordinately entangled in either bad debts or "innovative" financial instruments.

Despite these positive macro-economic conditions, TASE investors were not spared the precipitous decline in share prices, similar to that experienced in Europe and U.S. markets. There are several reasons for this.

First, Israel's economy is oriented towards export markets and other international activity. It is expected that the global crisis will adversely affect exporting firms as well as Israeli entrepreneurs active abroad. These companies, particularly those exporting raw materials or engaging in activities linked to commodities markets, carry significant weight in TASE major indices. Second, foreign investors liquidated substantial holdings since the outbreak of the global crisis. Third, the shockwave endured by the global financial system, to a certain extent, shook confidence in Israel's system as well.

The unprecedented fall of corporate bond prices, is another development that impacted Israel in 2008. This decline was particularly prominent for bonds issued by internationally active real estate companies.

In previous bear markets, members of pension and provident funds suffered losses resulting primarily from the depreciation of share prices. In 2008, however, the decline in corporate bonds, which constituted a key component of many institutional portfolios, left its mark as well.

The Role of Open Markets and Tradable Securities

It is a matter of course that when a major crisis occurs, attitudes regarding the role of government intervention in economic activity are re-examined. These questions arose in Israel as well; however here in Israel two additional issues, regarding the activity and economic role of the stock exchange were placed in the spotlight of public discussion.

First, the appropriateness of opening the exchange on days in which extreme stock declines are anticipated was questioned. This issue arose in anticipation of renewed trading on Sunday, October 12, the day preceding the Succoth holiday, following three consecutive days, during which TASE was closed for a long Yom Kippur weekend (Yom Kippur

eve, Yom Kippur day and Friday) and during which stock prices in international markets crashed. The TASE Board of Directors took the position that the renewal of TASE trading was imperative. This position was supported by the Minister of Finance, the Governor of the Bank of Israel and the Chairman of the Israel Securities Authority. The necessity of opening TASE stems from the dual role the stock market plays in the economy; it provides liquidity to securities investors and arbitrates the process of "price discovery", by which transparent transaction prices reflect, at any given moment, the trader's valuation of traded securities.

A decision not to open the TASE for trading would prevent it from fulfilling these important functions and would contribute additional uncertainty and unease to already-concerned investors. Very few exchanges around the world closed their gates during this period, and those that did were not among the more advanced markets.

TASE is aware of the repercussions of tumultuous trading and extreme price volatility, and for this reason, it deploys 'circuit breakers', which halt trade for 45 minutes during periods of acute price fluctuations in either direction. The circuit breakers are designed to allow buyers and sellers time to weigh their options and operate under less pressure.

As a matter of fact, the recent intermission provided by the circuit breakers contributed to the mitigation of volatility on days marked by particularly sharp price decreases.

The second issue, which arose during discussions concerning the best way to address the crisis, relates to the liquidity of bonds held by institutional investors. Some called for the reissuance of non-tradable bonds, as a remedy to solve the crisis facing pension and provident funds. We are compelled to reiterate the importance of market liquidity of all classes of securities for the proper functioning of the economy and particularly, of retirement savings schemes. In our opinion, the issuance of non-tradable bonds will adversely affect the economic system, while the problems of retirees can be best addressed by social insurance payments, tax benefits and direct support to affected individuals.

A return to the era of non-marketable bonds constitutes a retreat from the long and momentous road taken by the Israeli economy since institution of the comprehensive stability program undertaken to contain inflation in 1985.

The performance of corporate bonds during the current crisis does not impinge on the importance of maintaining a strong market in exchange-traded bonds. The problematic fluctuations in the corporate bond market and their effects on savers would not have been avoided if institutional investors were to invest in non-tradable bonds, government-issue or otherwise.

Temporary Adjusting TASE Rules

After the outbreak of the crisis, the TASE was required to adjust numerous rules to conform to the new reality, and in the past quarter the TASE Board of Directors adopted resolutions on several important issues.

First, the public float thresholds qualifying companies to remain in the leading TASE stock indices were made less stringent. This decision was made with a heavy heart, since in the past, the threshold was raised incrementally to a level of 25% of the issued shares. However, given the new conditions, TASE was compelled to settle for a 20% threshold, with the institution of emergency provisions that will remain in effect until the end of 2009.

Second, a similar temporary provision was adopted, which obviates the need to relegate many companies to the maintenance list, since the ability for small companies to raise equity or the public float has been significantly reduced.

Third, trading hours were shortened in order to allow TASE members and the TASE itself to save on operating costs. This decision was made based on data from the period in which trading hours were shortened during the TASE employees' dispute, indicating that shortening the trading day is not likely to adversely affect trading volume.

The tumultuous price fluctuations that have plagued TASE since September 2008 compel it to stress test additional rules and arrangements and to evaluate their operation under extreme conditions: circuit

breakers, derivative margins, the clearing systems, regulation of TASE members, etc. These issues will be addressed in 2009.

It is noteworthy that throughout 2008, the routine work load did not decline. Turnover remained high, both in terms of value and the number of orders and transactions on TASE. However, towards the end of the year, there was a decline in the turnover. Service to listed companies increased this year, since treatment of distressed corporate bond issuers entails significant work by the TASE.

Infrastructure Projects

In addition to the treatment of the crisis and its implications on regular operations, TASE advanced several infrastructure projects designed to enhance Israel's capital market. The first, the creation of the infrastructure required to clear 'repo' transactions in government bonds, was carried out according to principles outlined together with the Ministry of Finance, Bank of Israel and key financial institutions active in the capital market. TASE completed preparations and the launch of the new market is scheduled for the beginning of 2009.

The completion of preparations for the launch of equity options, a product whose absence has been felt for a long time, on a select number of highly liquid shares was the second. Arrangements for opening the new market were completed in December 2009; however their launch was postponed until March 2009 for technical reasons.

The third, in 2008 TASE began preparations for transferring the clearing and settlement of corporate bonds from same-day settlement (t+0) to t+1, following similar measures already taken for government bonds and 'T-bills' (makam). The shift to t+1 clearing in 2007 was necessary as a means to reduce clearing and settlement risks and as a prerequisite to joining the Real Time Gross Settlement (RTGS) system initiated by the Bank of Israel. The transfer of corporate bond clearing and settlement to t+1 is expected to be complete in 2009, and will be followed by similar arrangements for stock transactions, rendering TASE's clearing and settlement to a "delivery versus payment" (DVP) regime, as is customary throughout the world.

Fourth, preparations for constructing a new building for the TASE continued. Unfortunately, approval of the blueprints took longer than expected and actual construction did not begin before the close of the calendar year. The time lapsed was used for detailed planning of the building in the hopes of making up for some of the lost time.

Fifth, at the beginning of the year the Knesset approved amendments to the Securities Law that enhanced the stability of TASE clearing houses.

International Activities

In 2008 the TASE continued its international activities, which aim at consolidating links between Israel's capital market and foreign markets. This activity is designed to enhance the exposure of Israeli companies among the international financial community, attract foreign investor activity in TASE and attract foreign investment houses to become TASE members.

In this respect, the following events were particularly noteworthy:

- * Cooperation agreements (MOU) were signed with NYSE-Euronext and the Shanghai Stock Exchange;
- * TASE co-sponsored two major conferences for foreign investors, in London (with the London Stock Exchange) and New York (with NASDAQ-OMX);
- * The TASE Board of Directors approved the application of a subsidiary of Merrill Lynch to become TASE's first remote member;
- * An ETF tracking the TA-25 index was launched in the New York Stock Exchange.

Summary

In summary, Israel's economy and the Tel Aviv Stock Exchange has endured serious crises in the past, which were no less grave than the current crisis. The fundamentals underlying Israel's economy prior to the crisis were positive by many respects, and they constitute a source of hope that, with proper measures, the economic slowdown can be shortened and growth renewed. These developments are not dependent solely on us, since

Israel is part of a global system, which is facing one of the largest crises in its history. However, after four months since the outbreak of the crisis, it is the duty of the Israeli leadership to define an action plan and execute it expediently and with consistency.

2008 Summary of Israeli High-Tech Company Capital Raising

Israeli high-tech capital raising in 2008 reaches \$2.08 billion - highest in eight years

First Investments by Israeli VCs declining

This Survey reviews capital raised by private Israeli high-tech companies from Israeli venture capital funds and from other investors. The Survey is based on reports from 82 venture investors of which 48 are Israeli management companies and 34 are other – mostly foreign – investment entities.

In 2008, 483 Israeli high-tech companies raised \$2.08 billion from local and foreign venture investors, 18 percent above the \$1.76 billion raised in 2007 and 28 percent above 2006 levels.

"While 2008 was an exceptional year for capital raising" said Zeev Holtzman, Chairman of IVC Research Center and Giza Venture Capital, "the global recession cannot be ignored. In the upcoming year investments in Israeli high-tech companies will undoubtedly be lower." Holtzman nevertheless remains optimistic regarding Israeli high technology as a whole: "2009 will be a tough year for all companies, maintains Holtzman, "yet Israeli high-tech industry will continue to be a highly abundant source of technology innovation."

In the fourth quarter, 109 Israeli high-tech companies raised \$394 million - 22 percent below the \$503 million raised in the fourth quarter of 2007, and 34 percent below the \$600 million raised in the previous quarter – the highest third quarter reported in the last eight years.

The average financing round was \$3.61 million, compared to \$4.37 million in the fourth quarter of 2007 and \$4.83 million in the previous quarter.

Seventy-six companies attracted more than \$1

million each. Of these, 18 companies raised \$5 million to \$10 million each, nine companies raised \$10 million to \$20 million, and one company raised over \$20 million.

Israeli VC Investment Activity

In 2008, Israeli VCs invested \$780 million in Israeli high-tech companies, 38 percent of the total amount invested in Israeli high-tech companies. This compared to \$678 million or 39 percent in 2007 and \$651 million or 40 percent in 2006.

In the fourth quarter, Israeli VCs invested \$151 million, which accounted for a 38 percent share of the total invested in Israeli high-tech companies. The remainder came from foreign investors as well as non-VC Israeli investors.

In 2008, First investments made by Israeli VCs were 31 percent of the total amount invested by Israeli VCs, compared to 43 percent in 2007. The average First and Follow-on investments in 2008 were \$2.6 million and \$1.15 million, respectively.

Israeli VC Activity in Foreign Companies

Israeli VCs invested \$57 million in companies outside Israel during 2008 (in addition to their investments in Israeli high-tech companies), compared to \$50 million in 2007 and \$60 million in 2006. Eleven of the 33 investments were First investments and the remainder were Follow-ons.

Capital Raised by Sector

In 2008, the Communications sector led capital raising with \$516 million or 25 percent of total capital raised, followed by Software with \$407 million or 20 percent and the Semiconductors sector with \$323 million or 16 percent of total capital raised. Internet firms continued to attract investor attention with 14 percent of capital raised in 2008 and 15 percent in 2007. In the last two years, Internet investment has soared from the minute levels of the preceding few years.

Capital Raised by Stage

In 2008, 70 Seed companies attracted \$104 million or 5 percent of capital raised. The Seed company share of capital raised was well below the 8 percent average of the previous four years.

Stryker Corp. to launch world's first wireless HD

surgical monitor

Stryker Corp.'s endoscopy division will use technology developed by an Israeli company to launch the world's first wireless, high-definition monitor used in surgeries.

The Kalamazoo-based medical device maker's new HDTV surgical monitor will use wireless technology from Amimon Inc.

"Only AMIMON's High-Definition Wireless Technology is capable of transmitting the surgical video with no perceptible lag or interference throughout the entire operating room," William Chang, Stryker Endoscopy's vice president of research & development, said in a written statement. "This will allow surgeons greater flexibility in positioning the surgical display while operating."

Chang also said eliminating wires will save hospitals and surgery centers the cost of routing cables through ceilings and booms that hold the display equipment.

Amimon is a venture-backed startup company headquartered in Herzlia, Israel, with offices in Santa Clara, Calif. and Tokyo.

Earlier this month, Stryker said it would incur a \$20 million charge this year in part to "substantially reduce its development efforts associated with" SightLine Technologies, an Israeli startup it acquired in 2006. SightLine was working on commercializing flexible endoscopy technology used in colonoscopies and other gastrointestinal surgeries.

TransPharma obtains European CE Mark approval for its Transdermal Drug Delivery

TransPharma Medical Ltd., a specialty pharmaceutical company focused on the development and commercialization of drug products utilizing a proprietary active transdermal drug delivery technology, announced today that it received European CE Mark approval for its ViaDerm, a transdermal drug delivery device.

"We are excited about receiving the European CE approval for our unique ViaDerm device. This achievement confirms the safety of the ViaDerm device and brings us closer to offering patients a

method for the accurate delivery of biologics, thus avoiding the need for injections," said Dr. Daphna Heffetz, CEO of TransPharma Medical.

The device incorporates a reusable, battery-operated handheld electronic control unit and a disposable microelectrode array that together with a patch containing a drug comprises the ViaDerm System. Once applied to the skin, microscopic pores are created utilizing TransPharma's proprietary RF-MicroChannel technology, which are covered seamlessly with the patch. The drug is then diffused from the patch, through the microscopic passageways, into the skin's inner layers, and from there into the systemic circulation. The ViaDerm system provides a cost-effective, easy-to-use, self-administered solution that enables the safe, reproducible and accurate delivery of a broad range of product candidates, including hydrophilic small molecules peptides and proteins.

TransPharma has completed fourteen clinical studies with over 350 subjects, as well as numerous pre-clinical trials, demonstrating excellent skin tolerability and efficacious transdermal delivery of various sizes and types of drug-molecules. The Company's lead product is ViaDerm-hPTH (1-34), a transdermal hPTH (1-34) drug-product, for the treatment of osteoporosis, currently in Phase 2 clinical studies. This drug-product will enable patients to better manage their disease by eliminating the need for daily painful injections while easing handling and administration. In a recent collaboration, TransPharma out-licensed the ViaDerm-PTH (1-34) to Eli Lilly, and was granted, in return, an upfront payment of \$35 million and may also receive development and sales milestones, as well as royalties on sales if the product is successfully commercialized.

We first wrote about Transpharma in the June 2003 issue

Vector finally gets Aladdin

The private equity firm will pay \$160 million cash for Aladdin Knowledge Systems, representing a 20% premium over Friday's closing share price.

Tel Aviv-based information security company Aladdin Knowledge Systems (Nasdaq: ALDN; TASE: ALDN) announced today that it had entered into a definitive

merger agreement to be acquired by an investor group lead by Vector Capital. The transaction is valued at approximately \$160 million, which compares with a market cap of \$133.48 million for Aladdin at the close of trading on Friday in New York.

Trading in Aladdin shares on the Tel Aviv Stock Exchange has been suspended.

Aladdin shareholders will receive \$11.50 per share in cash for each share of common stock they hold. This represents a premium of approximately 20% over Aladdin's closing share price on Friday, and a premium of approximately 64% over Aladdin's closing share price on January 5, 2009, the last trading day before Aladdin's announcement that it was in continuing discussions with Vector Capital on a possible strategic transaction.

Vector Capital has been attempting to take over Aladdin since August 2008, when it announced that it had reached a 9.1% stake in the company. On August 20, Vector announced an offer of \$13 per share, but Aladdin's board rejected it.

Of the current transaction, Margalit said today, "After extensive negotiations and careful and thorough analysis, conducted with our independent advisors, the board has unanimously endorsed this transaction as in the best interests of the company and our shareholders."

Fishman said, "We are very excited about adding Aladdin to our portfolio of outstanding technology companies and believe that placing Aladdin's DRM and authentication assets under common management with those of our portfolio company, SafeNet Inc., a global leader in information security, makes considerable strategic sense and will greatly benefit all stakeholders."

"Aladdin is an exceptional company, with significant potential and a strong commitment to its employees, partners and customers worldwide. We understand Aladdin's industry and business well, and look forward to working collaboratively to ensure a

smooth and expeditious transition."

Vector Capital's announcement said that the transaction was subject to certain closing conditions, including the approval of Aladdin's shareholders and antitrust regulatory approvals. Approximately 14% of Aladdin's outstanding shares in the aggregate are held by an affiliate of Vector Capital, and directors of Aladdin, including Margalit, have entered into a voting agreement for 19% of the outstanding shares under which they have agreed to vote all of their shares in favor of the transaction. The transaction is expected to close in the next two to three months.

VC survey indicates widespread pessimism for 2009

Three out of four VC Indicator respondents expected at least 10% of venture capital-backed companies to close in 2009.

The fourth quarter VC Indicator survey of venture capitalists by Deloitte Brightman Almagor Zohar shows widespread pessimism as 2009 approaches. 74% of respondents expect at least 10% of venture capital-backed companies to be shutdown in 2009.

Not a single respondent believed that start-ups will post an increase in revenue. 44% believe we will see a major decrease in the revenue, and 46% believe we will see a slight decrease.

Deloitte Israel High Tech Leader Asher Mechlovich said that the difficult year ahead will essentially leave mostly strong companies. "Tech companies are headed for rough times. The revenues forecasts for the next year are all for decrease, albeit at varying levels, with no increases in the foreseeable future. Shareholders are going to keep 'hands on' intervention with regards to reducing salaries, cutting expenses and layoffs. Credit lines and equity funding opportunities are becoming very limited. All of the above will make the survivors of the year 2009 an excellent investment opportunity, as long as you know who is going to make it to 2010."

Employment expectations were also gloomy. 21% of the respondents believe there will be more than 5,000 layoffs, 46% believe there will be between 3,000 and 5,000 layoffs, 26% see between 1,000 and 3,000 layoffs, 3% see less than 1,000 layoffs, and only 5% believe there won't be major layoffs. The vast majority of respondents -92% - believe that high tech companies that do not fire employees are likely to slash salaries, compared with 70% in the third quarter survey.

87% of the venture capitalists surveyed claimed the government should support the high tech industry. 72% of venture capitalists surveyed believe that the government should provide a wide range of R&D grants, though only a third felt the government should extend direct support to technology companies facing difficulties.

Mechlovich said, "The decision whether or not to support the industry will be influenced by the upcoming general election."

Though most respondents did not expect IPO opportunities on Nasdaq, 41% did think that mergers and acquisitions will increase during 2009, and 36% felt it will ramp up in early 2010. 79% of respondents expect exit valuations to decrease, compared with 17% in the fourth quarter of 2007.



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