

Tomorrow's hot areas for Israeli investors

Israel's venture capitalists will be looking to new areas in which to invest over the coming years. IVCJ convened top executives from Giza Venture Capital to provide their assessment of the technology areas that will be most important to Israeli investors.

The panel included:

Ori Kirshner, Managing Partner;
Zvi Schechter, Co-founder and Managing Director; **Ori Israely**, Managing Director;
Elka Nir, Managing Director;
Eyal Niv, Managing Director



Ori Kirshner



Zvi Schechter

IVCJ: Which is the single most important technology to emanate from Israel and why?

Kirshner: The Pentium is probably the most important. Its unique architecture has been implemented in hundreds of millions of PCs, laptops, consoles and telephones. It seems to me that this is the most impressive contribution that Israel has made.

Schechter: Fast telecom processors, an Israeli idea that was implemented first in Israel, may have actually been a greater accomplishment.

Niv: Speaking about important technologies originating in Israel without mentioning Check Point or Amdocs is unthinkable. Although both companies don't like to be associated with their Israeli origins, they are pure Israeli success stories. While Check Point was no revolutionary, and many other firewall solutions are out there today, it has become a giant international corporation, and that definitely counts.

Nir: Israeli innovations in the areas of miniaturization, minimally invasive navigation technologies and medical sensors among others represent Israel's significant innovative technologies. I am talking about companies such as Biosense Webster and Given Imaging. Another example for an innovative solution is the PET CT that was developed by the Israeli functional imaging center of GE. The system provides vital cancer detection information – both functional and anatomical.

The fact that so many big companies like GE, Philips, Edwards, J&J and others have large medical development centers in Israel is a clear demonstration of Israel's unique innovation. These centers create an important knowledge base from which start-ups in the medical area can develop.

IVCJ: Which current trends can be expected to continue well into the future?

Kirshner: I see the area of sensors as the next big thing in technology development. Interaction with the world, whether as biological sensors for

medical treatment or as audio and visual sensors, is key. Although we haven't yet seen a human eye sensor, or a dog's nose sensor, we are witnessing the beginning of such developments, and I expect this to increase over the next few years.

Israely: From the point of view of Internet and new media, I can say that the existence of the Internet has enabled free access to target markets, making Israeli entrepreneurs more market oriented. In the past, our inventors tended to develop according to what they knew, rather than what the market was demanding. Today, in the age of abundant information, Israeli start-ups are looking at the market and inventing accordingly. Both entrepreneurs and investors have matured in this respect.

There are groups of people today in the Internet sphere with lots of experience that know not only to develop code, but have a deeper understanding of the user and user needs, and can potentially produce significant breakthroughs. I must admit that we still get people coming here with ideas that are far removed from any kind of market, but overall the approach is to follow market trends and to specify the targeted user.

The problem is that competition is fierce in the Internet area. It's all about 'real estate grabbing.' Those who are quick to secure the most online users can grow into multi-million dollar corporations. We haven't seen that in Israel, mainly because we (the investors) are quick to sell.

Schechter: Currently, investments in semiconductors are focused on system-on-a-chip rather than a simple chip. The implications are: 1. a high proportion of software development around the chip, 2. more integration with different IPs, 3. an increase in complexity, 4. increased costs. We have seen it in companies like iamba, Horizon Semiconductor and Altair among others.

Israely: Passave, for example, could not have been a giant company if it hadn't been sold, or even if it was a public company, because it only had a limited number of chips.

Schechter: The integrated approach makes life more difficult for chip companies. They need to integrate more technologies and cooperate with other companies. It generally complicates things for them. Having said that, semiconductors remains an area of interest to VC funds in general and to Israel in particular. The target markets have also changed. In the past, chips were mainly made for the communications market. Today, the target market is the consumer.

The other important issue is that of standards. In semiconductors, a standard determines the main functionality, the frequencies and so forth. VCs have two approaches to this issue. On one

hand, if a start-up attempts to introduce a new industry standard, it will have to make considerable investment in the technology and in persuading the industry and market to accept its proposed standard, but it will reap the benefits as the leader and as a first mover. On the other hand, if you "ride" an established standard and work with it, you have a market ready to accept your product. The first track might be more appropriate for big corporations because of the capital demands, and the second more suitable for start-ups. However, it is important to remember that really big companies, such as Broadcom or Cisco, that grew from start-ups to global giants, were always the innovators.

In home networking, for example, there were three technologies, one that won big time – wireless – and the other two – MoCA and HPNA – that are somewhat behind. But there are Israeli companies operating in all three technologies, and it's always a bet to choose which standard to follow.

Kirshner: Libit and Passave are two examples of companies that won the standard because they influenced it in a competitive way. But not every company that decides to follow a standard is set for success.

Nir: Standards allow small companies to play the big company game. Once you contribute to its creation, you are connected to a global network of companies. In the medical world, one such standard is the DICOM standard (Digital Imaging and Communications in Medicine). Elscint – even when it was a relatively small company – was active in standards definition.

IVCJ: Where is the technology going? Are biochips going to be the next big thing in 20 years?

Nir: In telecom, the field of long range broadband communication and 4G will spell breakthroughs in the near future. 4G is bound to provide mobile phone users with a speed of 50 megabits per second. In short range communications, such as today's Bluetooth, we will be seeing 20 Ghz technologies. I expect a new company to emerge in the 60 giga short range communications space. The leading company in this area is Willocity, though it's too early to tell where it is going.

Nir: We will increasingly see synergy and migration of technologies from IT and semiconductors into the medical field. Wireless, for instance, started in the communications world and is being incorporated into medical devices. Technologies that will continue to develop are minimally invasive tools for imaging and treatment, implantable miniaturized assisting devices as well as closed-loop miniaturized monitoring and treatment devices. Another (higher risk) direction is gene therapy technologies.

IVCJ: How about computers and other systems on biochips?

Kirshner: Yes, absolutely. In Israel we have a unique project, led by Prof. Shacham at Tel Aviv University, in which a biologic sensor has been developed. It's a semiconductor technology with biological elements that can be used in homeland

security applications. Another aspect of this is in blood testing, a technology that should be commercialized soon, offering a faster and more cost effective way to get blood test results. That being said, I think that biochips are still quite a distance away from where we are now. Before we see biochips enter the market, we will see more quantum computing and artificial intelligence. We might even see the beginning of this in the next fund.

Artificial intelligence has been researched in past years, but we should soon start seeing stronger computing power that would be able to predict more steps ahead than could a human being.

Nir: In medical devices, it makes sense that a biochip will perform the initial testing of various physical conditions in a patient to help doctors reach the most precise diagnosis and treatment decisions.

IVCJ: What about cleantech and agriculture? Are these areas where Israel could be a global innovator?

Schechter: The cleantech investment hype exists abroad, not in Israel. Although many venture capital funds have started to concentrate on clean technology investments, there really isn't much of it going on in Israel. Water treatment technologies could be considered promising, with more traditional companies such as Arad Dalia – a world leader in water measuring devices – or Netafim – a world leader in irrigation technologies – leading in technology development. But these are well-established companies. Though I don't currently see any start-up reaching that kind of magnitude, Israeli technological leadership in IT may lead to innovations in energy or water metering.

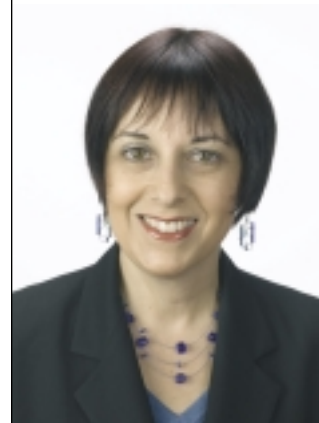
In the short-term, if the cleantech trend continues to soar around the world, the market in Israel will increase, as more money flows into deals and more entrepreneurs gain experience building cleantech companies. Over the long term, the development of cleantech in Israel will grow with global demand. To date, three cleantech-dedicated VC funds have been created in Israel – Israel Cleantech Ventures, Terra Venture Partners, and AquAgro. All are in early investment stages.

IVCJ: Which technologies would you place your bets on?

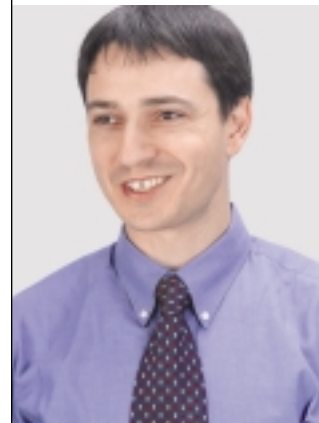
Nir: Miniaturization technologies, minimally invasive and efficient localized treatment and closed loop monitoring and treatment technologies.

Niv: In all areas, we see Israeli companies stepping up from pure technology providers to capturing a longer value chain, that is, they are getting closer to the consumer. A company that in the past developed, say, only the chip, will today also develop the software and the device. Or a company that developed a semantic technology for the Internet today will develop the application and perhaps even the destination site.

Altair Semiconductors would be my choice for the next big thing from Israel. The company develops fourth generation mobile wireless communication technologies, or mobile WiMax,



Elka Nir



Ori Israely



Eyal Niv

and is positioned to become the success of this generation. I feel safe to say that this company is the 4G chip start-up with the best potential to become a giant telco company if we, the investors, are brave and patient enough to hold on to it and not sell.

We need to think larger, have some more 'chutzpah' if we want to cultivate a really big company. Let's not forget that TI was also established on a single application – the digital processing chip, and Motorola was established in order to develop radio communications for the police in Chicago. It is possible, but we just need to believe.

Israely: In the Internet space, it's all about real estate and the simplicity of usage. That's what counts. If you want to succeed in the Internet, you must show ingenuity and innovation, but ultimately, the determining factor is if your idea runs smoothly and simply. In the area of social networks, I believe the start-up Koolanoo is going to be the next big thing. The company, which offers social networks to Chinese youth, is unique in the combination of its people, its market and its offerings. As for the underlying trend, I see more companies targeting the Asian markets, and this is likely to increase over the coming years.

Kirshner: In software it's hard to come up with an entirely new paradigm. In general, the main areas of interest are business process management, ERP and applications that enable managers to effectively manage their companies. ActionBase, for example, created an organizational infrastructure that enables all employees to be focused on the target through the visualization of information. Sometimes there are trends that can stimulate new ideas. Such was the case with the regulation and compliance trend that jumpstarted Actimize. Specific trends can enable a company to reach success in a relatively short period of time, but usually software companies need seven years before they are ripe for any sort of exit. Another noteworthy trend is grid networking. Xeround, a

new company that focuses on in-network, or grid computing, is on the verge of introducing something really innovative. But as the potential is so big, it is too early to tell at this point what would be their killer app. I would say that the field of cloud computing and grid data management will spur new, very interesting companies going forward, but still there is some way to go before we can see a one billion dollar company.

IVCJ: What are the next winning business models?

Israely: Services. Thanks to the Internet, companies can now move into service models, where not only an application or product is sold, but support for it is provided as well. The transition to service models will also have to depend on broader and stronger networks, which is where broadband fiber networks come into play. Interestingly the two leading start-ups in fiber GPON chips are Israeli companies iamba and Broadlight. There will be an increasing need for massive broadband networks across the globe to enable more and more online service and support and to prevent congestion.

The basic assumption is that the consumer has no interest in understanding processes or waiting for them, therefore everything needs to be streamed at ultra-fast speeds. This is the next wave in telecommunications – network upgrading.

IVCJ: So what is an example of a success story you would like to see repeated?

Consensus: Iscar. The company is where it is today because of excellent management and a brilliant vision. Possession of these skills will lead to the next multi-billion dollar success story.

Elinor Arbel, Panel Discussion Editor

Eyal Niv's Past Winners and Future Hopefuls

| Past Winners | |
|--|--------------------------------|
| Sector | Company |
| Short Range Wireless Communications - WiFi | BT – Envara |
| Access Communications, Cable/DSL Docsis | Libit, Metalink, Orckit, Savan |
| Computer High Speed Buses – InfiniBand | Mellanox |
| WAN Landline Communications | Wintegra, Galileo |
| Passive Optical Communications | Passave, Broadlight, iamba |
| Cellular | ModemArt, DSPC |
| Wireless | Ceragon Provigent, DSPG |
| High Definition Video Codes | VisionTech, Horizon, Zoran |
| Flash Memory | M-Systems, Saifun |
| Potential Winners | |
| 4G Cellular | Altair |
| 60 GHz Short Range | Willocity |
| IOs & Sensor | 3DV, PrimeSense |
| Image Sensors | Advasense |
| Next Generation Flash Memory | DenseBit, AnoBit |