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Commercial Department

Israel Technology & Innovation 2022

Checkmarx CEO Emmanuel Benzaquen: "We understand code, and we understand security."

Table of **Contents**

04 **Eran Feigenbaum**, Oracle Israel
05 **Yaniv Garty**, Intel Israel
06 **Erel Margalit**, JVP
07 **Dan Slasky**, SCD Semiconductors
08 **Israeli Hi-Tech** - How it started and where it's going
10 **Or Lavi**, Primesec Consulting
11 **Yossi Weiss**, NewRocket
12 **Dr. Solomon Dadia**, Ichilov
14 **Laurence Keselbrener and Ori Hadomi**, Medtronic
16 **Emmanuel Benzaquen**, Checkmarx
20 **Eyal Haimovsky**, Jerusalem Development Authority
21 **Gene Golovinsky**, Intuit
22 **Elay de Beer**, Buff Technologies
24 **Yossi Bornstein**, Ruach Chama
26 **Doron Sarai**, Algatech
27 **Kinneret Farzon**, Fjord Investments
28 **Doron Dvir**, Menta Global
29 **David Harel**, Asio Technologies
30 **Orli Glick**, ESGgo
31 **Ohad Shaked**, ThinkUp
32 **Smart Door Systems**
33 **Mordi Laloush**, Aquatech Fisheries
34 **Maayan Bachar**, Chats des Rues

Managing Editor EINAT FRIEDMAN
Magazine Editor ALAN ROSENBAUM
V.P of Commercial & Partnerships GALIT EREZ
Commercial TAMIR GUY TSABARY
Graphic Designer SG - Studio

Management and production
FRIEDMANPR – EINAT FRIEDMAN

Writers
ALAN ROSENBAUM
LIDAR GRAVÉ-LAZI
MAAYAN HOFFMAN

From the **Editor**

Einat Fridman Photo: Eitan Tal

What accounts for Israel's success in technology and innovation? While some may attribute it to 'Jewish genius,' others posit that it derives from a need for self-reliance born from the constant threats that have confronted the Jewish State since its inception. Numerous theories abound, but Israel's position as one of the world leaders in technology and innovation is indisputable.

Israel's preeminence in hi-tech has continued through the years of the pandemic and is documented in the stories featured in these pages. From revolutionary rocket technology that propels humans through space, to cutting-edge medical devices that improve the quality of life on earth, from microscopic, health-enhancing nutrients to advanced silicon chips used in the most innovative computing devices, Israeli know-how continues to inspire and advance humanity.

The high-tech field has enjoyed unbridled growth in recent years, which has led to high salaries and generous employment benefits. But now, with the economic slowdown in hi-tech, it seems as though this situation may change, at least for the foreseeable future.

The Jerusalem Post's Israel Technology & Innovation 2022 magazine includes interviews with 22 of Israel's top innovators in science, technology, medicine, fintech and cybersecurity, who explain their strategies for success, the ways in which they are facing this new reality, and their plans for the future in dealing with these challenges.

We extend our very best wishes to our readers for a happy Shavuot and a pleasant summer. Special thanks to all who have contributed to the creation of this magazine.

Einat Fridman

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Intel Israel

Living in the golden age of semiconductors

By Alan Rosenbaum

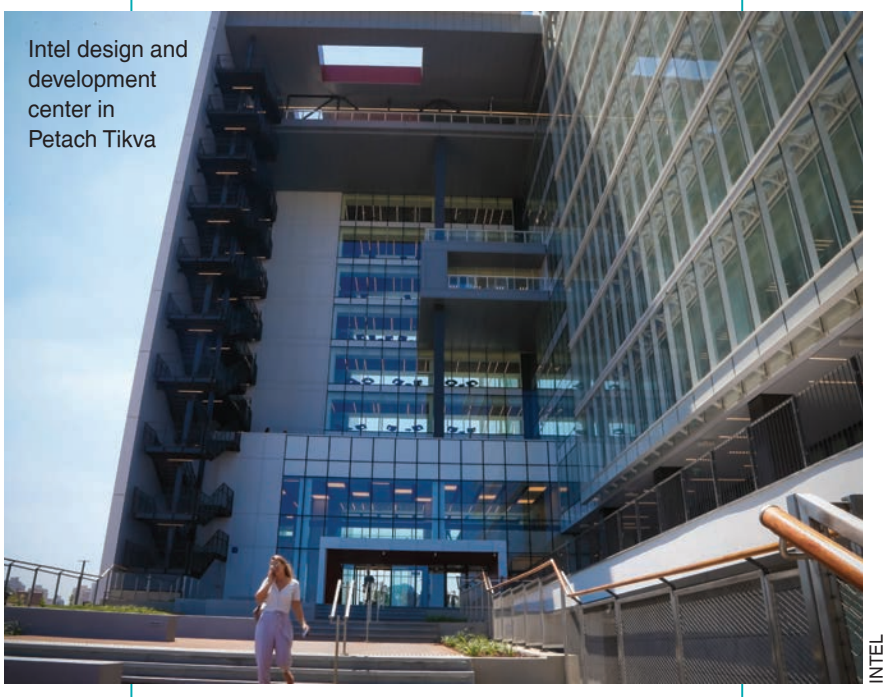
Yaniv Garty

Eyal Tueg

In the midst of a fascinating interview discussing current and future trends in hi-tech, Yaniv Garty, Intel Israel's CEO, almost apologetically interjects, "Let me speak for 90 seconds about Intel Israel." Singing the praises of Israel's largest hi-tech company can take much more than a minute and a half, but Garty succinctly captures the company's essence with three impressive numbers. Intel Israel today employs 12,000 workers in Kiryat Gat, Haifa, Jerusalem and Petach Tikva. The company exported over $8 billion of products from Israel last year, which makes up 2 percent of Israel's total gross domestic product. Finally, Intel Corporation, over the years, has invested $45 billion in Israel in capital investments and acquisitions.

Intel Israel focuses on five areas of development, including computers, communication, artificial intelligence, cyber-security, and manufacturing. "In some ways," says Garty, "Intel Israel is a microcosm of the parent Intel company, developing and manufacturing the technologies and products at the forefront of the digital transformation." That's quite an accomplishment for a company that began in a small Haifa office in 1974 with just five employees.

The world has undergone a path of digital transformation over the past few years that was accelerated by the pandemic, says Garty. Everything digital runs on semiconductors, explains Garty, including smartphones, computers, TVs and even cars manufactured within the past ten years. To illustrate the tremendous amount of computing power in today's chips, Garty holds a 1 cm x 1.5 cm Intel CPU (central processing unit), which includes 100 billion transistors. He says that 'Moore's Law,' which posits that the number of transistors in a dense integrated circuit (IC) doubles every two years, still holds true. He adds that in addition to chip density, additional technologies, such as power consumption, must evolve to maintain computer efficiency.Garty explains that the continued demand for more powerful computers and digital services can be divided into four main areas: ubiquitous computing, which allows people to interact with technology anywhere; cloud and edge computing, in which part of the computing world is not physically connected to the user's device; pervasive connectivity, in which everyone can communicate instantly; and artificial intelligence. Regarding AI, Garty says, "We envision that within this decade, more decisions will be made by artificial intelligence techniques than by humans. Part of our job is not just to enable the technology but to make sure that they are ethical and good decisions."Intel worldwide will continue to develop technology in these four vectors, says Garty. Intel is one of the three major semiconductor manufacturers in the world today, along with Samsung in South Korea and TSMC in Taiwan (one of Intel's semiconductor factories is in Israel in Kiryat Gat). It is estimated that by the end of the decade, the semiconductor market will be valued at one trillion dollars. Intel is undertaking a new strategy to make semiconductors at its FABs (semiconductor fabrication plants) for competitors.



Intel design and development center in Petach Tikva

INTEL

Garty acknowledges that Intel's leading position in Israel's hi-tech market carries a large degree of responsibility. "We can't successfully operate a company without a strong society," he says. To that end, Intel advances multiple projects in diversity and inclusion, STEM education, green energy and many others. One example is Intel's AI for Youth program, which teaches young students the digital skills needed for the 21st century, such as high-level problem solving, project presentations and interdisciplinary thinking.Intel integrates workers from different backgrounds into its workforce, and Garty says Intel is committed to advancing diversity and inclusion at every level. "Diversity and Inclusion are key to innovation. Intel employs a large number of Israeli Arabs, and more than 700 are registered in the Israeli Arab community at Intel. "They reach out to their communities, and help kids, highlighting what they will experience if they go into hi-tech," says Garty. He adds that Intel Israel employs a large number of men and women from the Haredi community as well.

Yaniv Garty believes Israel's success in hi-tech can be attributed to a number of factors, including its unique cultural attributes and the fact that the country had to stand alone and not rely on others for assistance. "Here, you need to do the stuff on your own, and no one will do it for you," he points out. In addition, Israel has a number of successful 'talent engines,' including the country's universities and the IDF. Ultimately, says Garty, one of the key reasons for Intel Israel's success is the fact that its employees know that they can impact the lives of millions through their efforts. Where does Intel Israel see itself in the next five to ten years? "We are on a mission to deliver leadership products across all of our businesses," says Garty." He summarizes: "Intel is an industry leader, creating world-changing technology that enables global progress and enriches lives. Inspired by Moore's Law, we continuously work to advance the design and manufacturing of semiconductors to help address our customers' greatest challenges. By embedding intelligence in the cloud, network, edge and every kind of computing device, we unleash the potential of data to transform business and society for the better."

Oracle Israel

Helping people collect, organize and visualize data

By Alan Rosenbaum

Eran Feigenbaum

Photo: Ezra Levy

"We love Israel on many levels," says Eran Feigenbaum, Country Leader for Oracle Israel. "The number of ideas and disruptions that come from Israel in technology, health care and education – we are involved in them, and we want to continue to be involved in them."

Oracle Corporation has been operating in Israel for thirty years and is headquartered in Petah Tikvah, with additional offices at Azrieli Center in Tel Aviv and Beersheva. Feigenbaum explains that Oracle Israel's activities are divided into two main categories – research and development of products for company use and Oracle's customers worldwide, and sales, marketing, and professional services for Oracle's local Israeli customers.

This past summer, Oracle increased the size of its footprint in Israel when it opened a cloud region here. "We are the first major cloud provider in Israel to build a public cloud region in Israel," says Feigenbaum, "with our first data center in Jerusalem that launched last summer."

Oracle's data center was built nine floors underground, taking Israel's unique security requirements into account. "If you are going to be the first provider to open a data center in Israel," says Feigenbaum, "what better place to do it than the capital." He reports that the center has been so successful that Oracle will be launching a second data center in northern Israel later this year.

Feigenbaum explains that having data in a local cloud region here allows clients to maintain primary and backup data in Israel, allowing the data to remain in the country, and providing better performance, since it is nearby. In addition, he says, customers who store data with Oracle receive additional advantages. "When we bring a cloud region, we bring all of the Oracle cloud services, including exclusive services."

Oracle successfully rolled out its Israel data center this year, he notes, despite the difficulties presented by the pandemic.

Feigenbaum says that Oracle's relatively late entry into the cloud market has benefited the company. "Oracle was a second comer to the cloud market," he says, "and Oracle did a great job using that to its advantage." The company looked at the first-generation cloud products and determined that they could improve on them with better security, pricing and performance. "We did revolutionary things that offer the highest level of security that no one else can match. That is what made it unique and made us very popular with customers that care about security and performance and are also cost-sensitive."

In 2021, the State of Israel awarded its Nimbus cloud tender, a large-scale project to provide comprehensive cloud services for the Israeli government, to Amazon Web Services and Google Cloud, bypassing Oracle's bid. In July 2021, Oracle filed a petition with the Jerusalem District Court appealing the government's decision. Feigenbaum says that he cannot comment extensively because the case is in trial. He did state, however, "I think the government made a mistake in their criteria and the selection process. It's not even so much about awarding it to Oracle. Being a new Israeli citizen, it's about having the right security requirements for something that is going to be essential and critical for the State of Israel." I wouldn't build a data center in a flood zone in Holland. I have to build a data center in Israel that is underground and can withstand all of those threats associated with where we live in Israel, and those weren't even threats that they thought about as a requirement. We know that the more competition you have, the more it drives innovation and prices to benefit consumers. There's no real reason why Nimbus shouldn't allow it to all vendors that meet certain requirements."

Commenting about Oracle's role in medical studies during the pandemic, Feigenbaum says that the company's advanced performance infrastructure has been invaluable in finding new covid therapies and vaccines and helping to predict where covid outbreaks would occur next. Oracle's Covid-19 therapeutic learning system allowed physicians and patients over the United States to record the effectiveness of drug therapies, and Oracle Cloud is being used to run clinical trials that test the safety and efficacy of Covid drugs and vaccines. Feigenbaum added that in the early stages of the pandemic, Oracle Israel worked with the Migal Institute in northern Israel, donating its cloud infrastructure for researchers to analyze enormous amounts of genetic sequences to track the vulnerabilities of the virus.

What fascinates Eran Feigenbaum most about the Israeli hi-tech scene? "It's the people," he comments. "The amount of grit that exists here in not taking 'no' for an answer, in looking at a problem that we all have in day-to-day life and finding a new solution for it. It is fascinating, and it is part of the culture here. That comes from the grit of living in Israel."

Beyond the company's advanced database and cloud services, Oracle Israel, says Feigenbaum, is working on a fascinating collaboration with the IDF's Unit 8200 Alumni Association and the Ministry of Education to help develop the social and emotional intelligence skills of students, especially important after attending school via Zoom for the past two years. "Oracle is a partner and sponsor of the 8200 SEL Challenge (social and emotional learning challenge) to get one hundred startups focused on this problem by awarding money and trials in front of students, to give a push to be as transformative and innovative bring this type of innovation into learning."

Eran Feigenbaum is certain that Oracle will continue its success in Israel. "I am confident that we will come out with transformative technologies and startups that will have an impact in Israel and beyond."

SCD - SemiConductor Devices
Detecting the invisible

SCD has been ranked by an independent IR market survey as number one in the world in mid-wave infrared detectors and short-wave IR military detectors. It is Israel's fourth-largest defense company

By Alan Rosenbaum

Dan Slasky

Photo: Liz Kadar

"There is hardly a platform – whether underwater, on land, in the air, or in space that we are not present," says Dan Slasky, CEO of SCD, one of Israel's leading semiconductor defense companies. SCD was established some forty years ago, in the aftermath of the Yom Kippur War, with the realization that the IDF needed to improve its night vision capabilities. The company has grown from a small lab in the 70s into a high-tech company that is among the world's largest developers and producers of infrared and night vision detectors.

"We develop unique chips and products that enable infra-red (IR) night vision for many types of applications," explains Slasky. He ticks off a list of systems that integrate SCD chips and products, such as commander and gunner sites for tanks and armored vehicles, handheld systems used by soldiers, short- and long-range imaging systems, and missile seekers that are used in systems such as Israel's renowned Iron Dome missile defense system, and more. While SCD supplies the Israeli military with top-of-the-line technology for strategic and tactical systems, notes Slasky, approximately 70% of its revenue comes from the export of its products to many countries worldwide.

SCD develops a wide range of technologies, ranging from semiconductors to the product level. "We have a vast amount of technical expertise including material science, physics, microelectronics, image processing, designing of integrated circuits with VLSI (very-large-scale integration), programming, packaging and more everything under one roof," he notes. The sheer number of different technologies that are being developed, quips Slasky, has made SCD into a "playground for engineers." The company has subsidiaries in the United States and the United Kingdom, and in other locations around the world, in addition to its Israeli headquarters in the northern Galilee. SCD's fabrication infrastructure (FAB), where it produces its semiconductor devices, is one of the largest FABS of its type in the world, Slasky says.

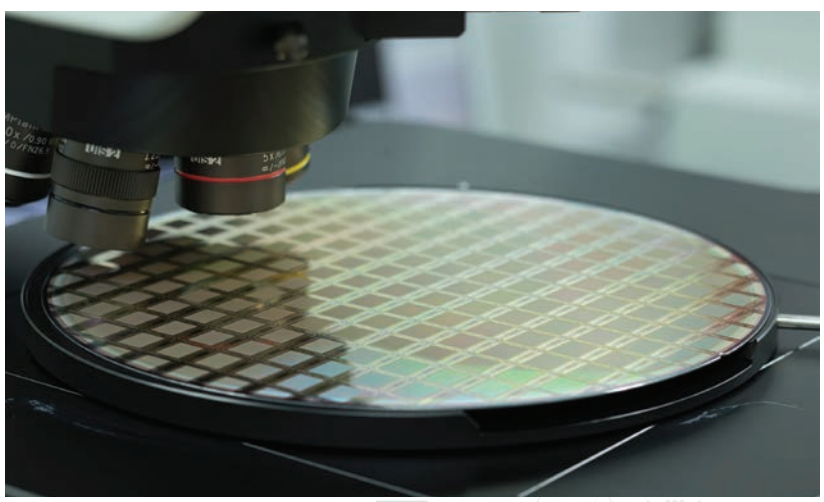
In addition to developing high resolution and high sensitivity infrared detectors, SCD is pioneering what Slasky calls "smart imaging," in which infra-red detectors can not only see in the dark or in adverse weather conditions, but can actually extract important information from the scene.

While most of SCD's work is in defense-based systems, it has also established a large footprint in the commercial and industrial markets. For example, recent regulations in the United States and Europe limit the amount of gas that can be extracted in industrial operations. The company has thus developed unique IR detectors for remote sensing that can detect gas emissions from afar. SCD's sensors are also used in machine vision technology for product lines, helping filter and improve product quality in consumer production lines.

Looking ahead, Slasky says that adding more intelligence to sensors is the next significant trend in the field. "The whole artificial intelligence theme is being implemented in many different vectors," he says. "There is a lot of information that is detected– whether it is physical or data. However, the user needs to attain only the relevant information that they need and when they need it – here enters the "smart imaging" aspect."

Commenting about the effects of the pandemic on the company, Slasky says, "We needed to make a lot of adjustments." The company was organized into different shifts, while relevant marketing and development teams worked from home. Ultimately, says Slasky, "people need to be on campus in a "hybrid" structure since human interaction is required to enable innovation and engagement."

SCD has been ranked by an independent IR market survey as number one in the world in mid-wave infrared detectors, known as cooled detectors, and in short-wave IR military detectors. It has been growing significantly over the past five years – and today is Israel's fourth-largest defense company with orders exceeding $200 million per year. In analyzing the company's success, Slasky says that SCD invests a significant amount in research and development, has excellent production capabilities, and has managed to identify trends in technology that have significant impact in the world of infra-red. He expects that the need for IR technology will increase on all platforms in the next several years. "Our vision is to continue growing, implementing novel and smart solutions inside infra-red imaging systems, and to be one of the top three companies in the world for IR detector solutions."



Harvesting innovation in Jerusalem, with Israel as a technological light unto the nations

Leading tech-entrepreneur Erel Margalit tells a very modern Shavuot story.

By Alan Rosenbaum

CEO Erel Margalit

Photographer: studio LOVEN

"Today, we are leading the way in innovation and investment in foodtech, climate tech, and agricultural technologies that are changing the world, combating the challenge of food security, and helping conserve resources for the planet's sake." These are the words of Erel Margalit, Founder and Executive Chairman, of JVP and Margalit Startup City, in a pre-Shavuot interview held with this writer.

"Shavuot celebrates the Biblical food innovation revolution," says Margalit, sitting in the offices of JVP, not far from the fields where Ruth met Boaz, the heroes of the Book of Ruth that is read on the festival. "From setting aside a corner of the field to leaving the forgotten bundles, the Biblical approach to the harvest incorporated some very modern understandings."

The challenge of food security, the need to make food production sustainable for the world's growing population, and its impact on the environment has long been a target that combines profitable investment with genuine social responsibility.

Margalit points to the importance of excellence in this area, not only as part of Israel's contribution to the world but also to the country's national resilience. He recalls, "In 1948, David Ben Gurion, Israel's first prime minister, said that in order to survive, we had to be as strong as the seven countries around us, and the only way to do it, in addition to our courage, would be through technology."

Margalit attributes Israel's hi-tech success to several factors. For many years, he says, the country was prized for its technological prowess, but it did not become sufficiently business-oriented until the 1970s, when companies such as Motorola and Intel arrived in Israel, bringing American corporate culture to Israeli technology. Next came venture capital, "and that was the match that lit the spark of hi-tech." The influx of venture capital helped young Israelis build companies and created revolutions in communication and enterprise software. "When the world of telecom changed to data and then to video," says Margalit, "Israel was instrumental in bringing about the technology that helped change world networks into a data video network."

The second phase of Israel's tech maturation began in 2001 after 9/11, with the advent of Israeli cybersecurity and artificial intelligence technology. "Cybersecurity and artificial intelligence have been the key to unlocking many vertical industry challenges," says Margalit. "They are changing insurance, banking, enterprise, the automotive industry, food tech and agritech."

The next phase of Israel's technological evolution, Margalit notes, must be more inclusive, both demographically and geographically.

Margalit discusses his work in the periphery, including a groundbreaking international Foodtech Center in the Galilee, saying that it has the potential to become a world leader. In today's hyper-connected world, it can affect change beyond its immediate area. "Our role is bigger than changing the Galilee," says Margalit. "This revolution can be performed in the Galilee with Amsterdam as a partner, with Cornell University as a partner, and with a variety of places in Asia that can be partners."

Margalit notes that Israel must include more parts of its population in its development. "If the Galilee is hungry to succeed," he says, "let them take foodtech and agritech and make it an innovation center with between 30,000 and 40,000 jobs." The area will need more than jobs: it will require culture, creativity and high-quality education. In Margalit's view, Israel needs to create seven new regions of excellence – the eastern and western Negev, the Gaza envelope, the eastern and western Galilee region, Eilat and the Arava. He foresees an increase in hi-tech employment from the Haredi and Arab sectors, but he says that a joint public-private policy is needed to move it forward. "I think it will happen, but the government can make it happen faster. We need incentives, education, and rewards for individuals and companies that will make some of the first moves."

An Israeli tech scene that is not limited to Tel Aviv and Jerusalem will be primed to play a major role in the coming years in foodtech, agritech, health care and climate tech. Speaking of the need to change the world through food tech, Margalit says, "We cannot continue to eat the way we do if the planet is going to survive."

Returning to Shavuot and the importance of the climate and environment, Margalit says that the term 'climate technology' can apply to a host of different technology areas, including fintech, cyber, foodtech and health care. "Technology can come from a variety of sources for changing the climate and saving the planet," says Margalit. "Israel can play a major role, but it needs to be redefined not only in terms of the core identified technologies that affect climate change, but also other technologies."

JVP will continue to maintain its major presence in Margalit Startup City innovation center in New York and its headquarters in Jerusalem. It has created new opportunities in Israel, including 18 companies in Beersheva, its Galilee Food Tech Center, its Haifa center for Health Care IT, and its fintech and AI centers in Tel Aviv. "I see JVP as continuing to thrive, with centers of excellence in Israel, international centers and allowing Israeli hi-tech to identify and serve the big ideas needed to change the world in the next twenty years."

Looking at the Jerusalem hills from his window, Margalit concludes, "When Boaz saw Ruth in the field, he was part of a revolution in food innovation. We have come a long way, but we have a ways to go."

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leadership to understand that the state could not rely on anyone but itself. If it wanted to continue to survive, it would need to develop independent research, development and production capabilities – not just for arms, but for everything."

Ultimately, he writes, this need for self-reliance led to the birth of Israel's hi-tech revolution. De Gaulle's decision pushed Israel to develop its first drone in 1969, accelerated the development of Israel's Merkava tank, and spurred the development of the Lavi, Israel's homegrown jet fighter. Though the development of the Lavi was canceled in 1987, its development, writes Katz, "laid the foundations for Israel's drones, satellites, avionics and missile systems."

Additionally, Katz notes, the Technion invested in new fields of study, including computer science and electronic engineering, the Israeli government appointed chief scientists in its various ministries, and began investing in technological incubators.

Still others have suggested that Israeli chutzpah is what has propelled the country in its hi-tech success. This characteristic is well-established in the IDF, where military recruits are taught to "challenge the chief" and IDF ground forces innovate and create new tactics as situations develop. According to this school of thought, the innate Israeli self-confidence and audacity is the cause of its success in hi-tech.

Ultimately, Israel's remarkable accomplishments in hi-tech may be attributed to a combination of all, or some of the above factors.

The first Israeli hi-tech firms were created in the 1960s. ECI Telecom, which initially specialized in telephone transmission products that manipulated the signals carried on telephone lines, was founded in 1961. Tadiran was next in 1962, followed by Elron Electronic Industries.

The first multinational company that came to Israel was Motorola, which set up a research and development unit in Israel in 1964. Intel Israel was formed in 1974, and these and other multinational companies gradually brought the American corporate culture to Israeli hi-tech.

As the emphasis in the hi-tech market shifted from hardware to software, Israeli companies began to compete in global software markets. Between 1984 and 1991, pure software exports from Israel increased from $5 million to $110 million.

During the 1980s and 1990s, a number of Israeli companies began to enjoy worldwide success, including companies such as Amdocs, Aladdin Knowledge Systems, NICE Systems, and Check Point Software Technologies, among others.

International developments in the 1990s, including increased aliyah from the Former Soviet Union, which increased the numbers of qualified hi-tech workers, as well as the Oslo Peace Accords, which boosted investment in Israel, also played a significant role at that time.

The dot.com boom of the 1990s was felt in Israel as well, as thousands of start-ups were established between 1998 and 2001. One of the first major financial successes of that period was America Online's $407 million purchase of Mirabilis, an Israeli start-up that had developed the ICQ messaging program.

As Erel Margalit, Founder and Executive Chairman of JVP, mentions elsewhere in this magazine, the arrival of significant amounts of venture capital helped ignite the hi-tech boom in this country, as Israelis built new companies and created revolutions in communications and enterprise software. Between 1991 and 2000, Israel's venture capital expenditures rose from $58 million to $3.3 billion. In 2021 alone, venture capital investment in Israel was $25.6 billion, which was a 136% increase over the previous year.

Over the past twenty years, Israeli technological developments have changed the lives of millions of people, both in Israel and around the world in their everyday lives. Some examples are:

Continued on page 10

The Development of Israeli Hi-Tech

How it started and where it's going

By Alan Rosenbaum

For many, Israel is known simply as 'the start-up nation' or 'Silicon Wadi,' the Middle Eastern version of California's Silicon Valley. Companies such as Intel, Microsoft, Cisco, IBM and Apple selected Israel as the location for their first development centers outside of the US. Other tech powerhouses, such as Oracle, Google, IBM, Facebook, Hewlett-Packard and many others, have also established research and development facilities in Israel.

Israel's investment in research and development as a percentage of its gross domestic product (GDP) is higher than any country in the world, with 2,000 start-ups founded in the past decade, another 3,000 small and medium-sized start-ups and high-tech companies, 30 growth companies, 50 large technology companies, and 300 multinational corporation's R&D centers.

In the second decade of the 21st century, this seems commonplace and widely accepted. Yet, these achievements are mind-boggling for a country that is not yet 100 years old. The pioneering Zionists that arrived in the Holy Land during the 19th century had difficulty eking out a living from the land that had lain desolate for hundreds of years. In the state's early years, from 1949-1959, as hundreds of thousands of immigrants arrived, doubling its population, Israel imposed rationing and other austerity measures. From the 1970s until the 1990s, the country endured economic stagnation, declining immigration and runaway inflation. The Arab-Israeli conflict has not provided an unending period of peace for the country. With all of these factors considered, how and why has Israel become known as the Silicon Valley of the Middle East?

Many reasons have been advanced for Israel's success in hi-tech. One of the most thorough summaries on the subject can be found in "Start-Up Nation – The Story of Israel's Economic Miracle," written by Dan Senor and Saul Singer. The bestselling book, first published in 2009, proposes several theories.

The first idea posits that Israel has thrived and succeeded in hi-tech because it has been threatened by adversity. "Adversity, like necessity, breeds inventiveness," write the authors. Senor and Singer reject that proposal, because other small countries that have been threatened, such as South Korea, Singapore and Taiwan, though they too have experienced impressive growth, do not have an entrepreneurial culture that compares with Israel's.

Others attribute Israel's hi-tech success to the idea of 'Jewish genius.' "The notion that Jews are "smart" has become deeply embedded within the western psyche," write Senor and Singer. The authors express skepticism as to this being the reason for Israel's prowess in hi-tech, reasoning that Israel's population is comprised of seventy different nationalities, and the idea that such a disparate group could form a hi-tech power seems unlikely.

A third reason that has been suggested by some for Israel's hi-tech success is the country's military and defense industry, which has spun off into different companies. If that is the case, contend the authors, why have other countries with military conscription not experienced the same successes?

Beyond the ideas mentioned in the book, other reasons have been posited. Some date the beginnings of Israel's hi-tech industry to the period immediately before the Six-Day War in June 1967, when French President Charles de Gaulle imposed an arms embargo on Israel, stating that France would not support the first country that would start the conflict. Until that time, France had supplied the IDF with state-of-the-art weaponry, including the Mirage fighter aircraft.

The French arms embargo not only pushed Israel towards a greater alignment with the United States, but as Yaakov Katz, Jerusalem Post editor-in-chief wrote (June 2, 2017), "De Gaulle's embargo did something even more significant: It pushed Israel's

NewRocket

The sky is (not) the limit

Revolutionizing the propulsion industry for the space missions of tomorrow.

By Alan Rosenbaum

Yossi Weiss PR

It is the stuff of science fiction, but it is based on solid scientific fact. NewRocket, a small, Netanya-based startup, has developed a revolutionary, gel-based fuel for spacecraft that will revolutionize the propulsion industry for the 'New Space' missions of tomorrow.

Unlike the highly toxic and hazardous fuel used to power today's spacecraft, NewRocket's PowerGel fuel is safe and non-toxic. Yossi Weiss, NewRocket Chairman, and former CEO of Israel Aerospace Industries, explains that the technology was developed and pioneered by Prof. Benny Natan of the Faculty of Aerospace Engineering at the Technion–Israel Institute of Technology in Haifa.

Photo: Nadav Harel

NewRocket engine in operation

The technology was integrated into Incubit Ventures, a technology incubator owned by Elbit Systems Ltd, and in 2018, the proof of concept of the product was established, which showed that spacecraft and satellite engines powered by gel-based fuel could be developed. Two and a half million dollars were raised in a Round A funding round in 2020. The company's primary investor is CBG Group, which is led by the British businessman Vincent Tchenguiz.

Weiss says that after confirming its attractiveness in the local market, and the rapid progress in its product development toward space demonstration in 2024, the company is heading for the international market, primarily (but not only) in the U.S. NewRocket has recently established a U.S subsidiary – HighSP (High Space Propulsion) to commercialize its products in the growing U.S market.

"There are two vectors that are coming together at this time," explains Weiss. "The first is the tremendous interest in space." Weiss is referring to the term known as 'New Space,' which refers to the large number of new aerospace companies developing low-cost access to space or spaceflight technologies and advocates of low-cost spaceflight technology and policy. SpaceX, for example, founded by Elon Musk, is a privately owned company with the goal of reducing space transportation costs and colonizing Mars.

The second vector that Weiss is referring to is NewRocket's PowerGel fuel, which is far safer, less expensive, and more practical in the long run than legacy fuels, that are based on hydrazine, which is highly toxic and dangerous. Burning hydrazine creates significant safety risks and causing high operational costs. PowerGel allows simple, safe, flexible, and cost-effective storage and operation, significantly reducing overall mission costs.

Weiss says that since NewRocket's propulsion solution is very powerful, allowing full control of the thrust while being extremely cost-effective, it is ideal for integration in New Space applications, which is the fastest-growing segment in the space industry in the coming decade. These applications include launches of manned flights, satellites de-orbiting, space stations propulsion, cargo missions and the use of 'space tugs' to move and position satellites in space orbits. NewRocket is a very attractive option for investors at its current position and valuation. The company is currently beginning a new round of funding to raise an additional $20 million for further development, to transfer its innovative product concept to a commercial production line for the development of the propulsion system that includes engines, fuel tanks and gel-based fuel and to expand its grip in the international markets.

The company currently has 14 employees, most of whom hold advanced scientific/engineering degrees, and is refining and developing its expertise for the next generation of spacecraft, which, it hopes, will utilize its revolutionary technology. "Our ultimate goal and our vision," says Yossi Weiss, "is to become a manufacturer of spacecraft systems that will incorporate our technology. The market is huge, and it is eager for innovative development of this kind."

Continue from page 9

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Agriculture and Environment

Drip Irrigation – Developed by Israeli company Netafim in 1967, drip irrigation uses specially designed pipes to drip water on crops. This technology has improved crop yields by 70% in the Arava while reducing water usage by 5%. It is used in 110 countries around the world.

Watergen – Based in Petah Tikva, Watergen produces clean drinking water by extracting humidity from the air. Watergen devices are used in disaster areas around the world where water supplies are scarce.

Medicine

PillCam – Developed by Medtronic (mentioned elsewhere in this magazine), the PillCam is a plastic, vitamin-sized capsule outfitted with a tiny camera and light that takes photos of the entire gastrointestinal tract. The camera visualizes the small bowel and colon, allowing physicians to diagnose diseases such as Crohn's Disease, a type of inflammatory bowel disease, and detect bleeding in the GI tract.

ReWalk – The ReWalk exoskeleton system, developed by ReWalk Robotics, is a wearable robotic exoskeleton that provides powered hip and knee motion to enable individuals with spinal cord injury to stand, walk, turn and climb and descend stairs.

Computer Technology

Disk on Key – The ubiquitous USB drive was developed by Israel-based M-Systems.

Firewalls – Frist developed by Check Point Software Technologies in 1993, a firewall is a network security system that controls incoming and outgoing network traffic, establishing a barrier between a trusted network and the Internet.

Transportation

Waze – Developed in Israel initially as a free digital database of the map of Israel in Hebrew, Waze was purchased by Google in 2013 and is used around the world for satellite navigation by drivers around the world. It has been translated into 50 languages.

Mobileye – Founded by Hebrew University professor Amnon Shashua, Mobileye develops autonomous driving technologies and driver-assistance systems. In 2017, Intel Corporation acquired the company for $15.3 billion, the largest-ever acquisition of an Israeli hi-tech company.

Defense

Iron Dome – Developed by Rafael Systems, Israel's air defense system is the world's most deployed missile defense system and provides a success rate of more than 90%. The system detects incoming rockets, determines the threat level of the missiles, and destroys the incoming missile before it strikes.

These are just a few of Israel's many achievements in hi-tech. New advancements and innovations from Israel in health, science, finance, agriculture and medicine will help create a better world for all humanity.

Primesec Consulting

Protecting the cybersecurity needs of private companies and organizations

By Alan Rosenbaum

Cybersecurity and its relevant regulations come naturally to Or Lavi, Adv., CEO and founder of Primesec, which provides information security consulting, privacy and cyberprotection for organizations and companies. Lavi served in the IDF's legendary 8200 intelligence corps units, which is responsible for collecting signal intelligence and code decryption, and holds a BA degree in computer science, a law degree, and a master's degree in law.

Primesec, which he founded in 2010, provides information security consultation to companies in the capital markets, the financial sector, hi-tech and startup companies in the biomedical field, as well as government, municipalities, and the academic sector.

Or Lavi

Photo: Yair Weller

Interestingly, two-thirds of the company's thirty employees are women. Fully half of the staff come from fields unrelated to cybersecurity, such as law, industry and engineering. The company does not have centralized offices. Instead, the employees work at home or onsite.

Lavi explains that while companies in the defense and communication sectors are aware of cybersecurity needs and privacy regulations, many other organizations in Israel, such as retail companies, NGOs and municipalities, are not fully protected in these areas. The information security regulations put into effect in 2018 influenced all public, business and corporate sectors in the country and tripled the size of the information security sector in Israel, he says.

The pandemic, adds Lavi, has also influenced information security and privacy. "Since Covid," he says, "people are using more digital channels for communication. Not all of these channels are secured with proper measures." Some applications and websites have not been sufficiently configured, and as a result, he says, hackers have been able to penetrate systems and extract data.

Lavi notes that while there was an initial decrease in company sales at the very beginning of the pandemic in March 2020, Primesec's sales have risen steadily, and in 2020 and 2021, revenue grew to the highest levels since the company's creation in 2010.

While Primesec deals with corporate and institutional customers, Lavi offers a word of advice for individuals on how to best defend themselves from hackers. "It's about awareness. Check the SMS you have received, the WhatsApp that came in, and the email that appeared in your inbox. Make sure that the source is familiar." Lavi recommends that people use strong passwords, keep their antivirus programs up-to-date, and back up their data frequently. "If you back up every week or every day, it can save you if you are attacked," he says.

What are Primesec's plans for the future? "We will continue to provide quality, agile and fast service to our customers," says Lavi. "We hope to grow in Israel and expand into new sectors, as well as reach new markets abroad. Our goal is continuing our steady growth while maintaining our quality of service."

A virtual image of the spine and ribs from the patient's superimposed CT scan, shown while the team prepares for surgery. This is for the purpose of an epidural injection.

Novarad

Doctors practice freezing cryotherapy to treat a malignant tumor in the pelvis using a Novarad augmented reality system. Credit: Levin Center of Surgical Innovation and 3D Printing Unit at Tel Aviv Sourasky Medical Center

are light, comfortable and aesthetic and "you can go swimming the next day," Dadia said.

Moreover, because the cast is made specifically for the individual's broken limb, it is less likely to have unintended pressure points, which can cause chafing and bruises.

Sourasky is the only hospital in Israel currently providing the casts; they are not yet available for lower limbs and are not covered by insurance, so cost close to NIS 1,000.

Up Next: 3D-printed organs and augmented reality

Moreover, the lab can print patient-specific instruments for use during the surgeries, Dadia said. They are printed from biocompatible materials that have been validated by the Food and Drug Administration.

And, it is now working on producing bone and other implants, as well.

Today, bone implants are generally made of plastics, titanium or other metals that can cause infection, mechanical loosening and lead to repeat surgeries. Dadia said his lab is working with teams in Israel and Europe to develop hybrid implants with 3D-printed biological filler that Dadia believes could be available even within the next two years.

"There will be prints made of bio-ceramic, biodegradable materials, which we can implant in children, so that the bone grows and the foreign material dissolves as the child grows," Dadia said.

And he envisions that from there, the transplantation of 3D-printed organs into human bodies will come.

Finally, Dadia said that augmented reality glasses are already being used in some instances at Sourasky and he believes that within the next two years, the full blown technology with all its aspects of patient registration and guidance will be ready and implementable.

Dadia said that surgeons tend to be conservative and the medical field in general often struggles to keep pace with technology. However, he believes that the more innovation can be integrated into the clinic, the better the surgical workflow will be, the more exact procedures will take place and that patient results will improve.

"This could be anything from a robot to a new tool or software," he said. "I find that in the operating room there are huge gaps in technology. We are trying to close those gaps."

Today, the innovation center is working with around 40 companies - companies that at the beginning his team was chasing after, but now "they come to us."

"The collaboration with the industry is the heart of all this activity," he said.

Next, Dadia is hoping to get some of the newest innovations covered by the Health Basket. He said he is working with the Health Ministry to achieve that goal.

"Hopefully by the end of 2022 the ministry will embrace this technology nationally. If that happens, it will really open the doors."

Could 3D-printed organs cut their way into the operating room?

Tel Aviv's Levin Center of Surgical Innovation and 3D Printing Unit is bringing technology into the clinic

By Maayan Hoffman

From three-dimensional (3D) pre-surgical simulations to augmented reality (AR) guidance during an operation - coming soon - technology has cut its way into the surgical ward.

The result: Better patient outcomes.

According to Dr. Solomon Dadia, surgical innovation is a "multifaceted" term. As the head of the Levin Center of Surgical Innovation and 3D Printing Unit and deputy director of the Orthopedic Oncology Department at Tel Aviv Sourasky Medical Center, Dadia has spent the last six years collaborating on innovative approaches to improving surgical processes and outcomes. He has also served as a matchmaker between technology companies looking to integrate into the clinical world and surgeons who have medical ideas and needs that through technology could be made a reality.

The center is composed of doctors, engineers, product designers and radiology experts, who meet together to come up with the next big clinical innovation.

One area already in practice is the use of 3D printing. By using computer software, layers of two-dimensional diagnostic images from CT and MRI can be converted into 3D images that are then printed and provide "one very beautiful" physical rendering of the organ or body part at hand.

"It is amazing," Dadia told The Jerusalem Post. "I don't think our mind can even process all those images together."

Before 3D printing, variant scans were delivered to surgeons in 2D pictures, and the doctors were forced to scroll up and down and create a 3D image in their minds. Now, "when all the data is in one image," Dadia explained, "the doctor can better understand the pathology and anatomy, plan and design the surgery and tackle any potential problems before they happen."

The technology is particularly important in Dadia's field of orthopedic oncology, where surgeons are repeatedly called upon to excise malignant bone tumors without destroying the bone. If any of the tumor is left behind, the individual could relapse.

This is especially important when it comes to children, whose bones are still growing, or in cases where a tumor needs to be removed near a joint. By printing a 3D model in advance of the surgery, the location of the tumor and its exact boundaries can be assessed and the removal of it done with utmost precision, improving the patient's life, Dadia explained.

"We can print the models on multi-color, multisensory materials that can mimic human tissue and the surgeon can do a dry run before the operation," he said. "This is happening every week in our innovation center."

The team is also providing 3D-printed casts for upper limbs.

Dadia said that individuals who come to the ER with a broken arm can have their limb scanned with a 3D scanner and then a cast created within only a couple of hours. Unlike traditional casts, which are heavy, dirty and that must be kept away from water, these

Dr. Solomon Dadia prepares to insert screws into spinal vertebrae using a virtual system where the anatomy and virtual design are projected onto the patient. This practice is done on a phantom model with the support of a surgical theater company.

Credit: Levin Center of Surgical Innovation and 3D Printing Unit at Tel Aviv Sourasky Medical Center

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Medtronic Israel

Developing healthcare solutions for complex conditions

By Alan Rosenbaum

PR

"Innovation is key at Medtronic," says Laurence Keselbrener, Medtronic vice-president of research and development for the company's Gastrointestinal division and site leader at the company's Yokne'am office. After conducting a wide-ranging interview with Keselbrener and Ori Hadomi, Medtronic Israel's vice-president of Strategic Initiatives & Partnerships, it is clear that the Israeli branch of this worldwide company is rapidly improving medical innovation for the benefit of patients around the world.

Medtronic is one of the largest medical device companies worldwide, with more than 90,000 employees in 150 countries. Medtronic Israel has a team of 1,000 workers in nine different locations throughout the country in Jerusalem, Herzliya, Petah Tikva, Yokne'am, Caesarea, and Tel Aviv.

One example of the company's innovative work is the PillCam, which is used for capsule endoscopy. The PillCam is a plastic, vitamin-sized capsule outfitted with a tiny camera and light that takes photos of the entire gastrointestinal tract. The camera is used to visualize the small bowel and colon, allowing physicians to diagnose diseases such as Crohn's Disease, a type of inflammatory bowel disease, and detect bleeding in the GI tract. "There is almost no other way to visualize the small intestine," explains Keselbrener. "It is four meters long, and it is very difficult to get in there. You just swallow the capsule, it takes the pictures, and you know what is happening inside. It is very easy for the patient and very good for the physician."

Keselbrener notes that Medtronic has a broad portfolio of additional products in the gastrointestinal field, including products used to diagnose acid reflux and motility issues in the esophagus. Another product, called PillCam Colon, is used as a triaging tool prior to traditional colonoscopies. Keselbrener adds that Medtronic is greatly increasing the use of artificial intelligence in its products, such as an AI tool that is used to detect polyps in colonoscopies.

Medtronic Israel focuses on a number of areas, including gastrointestinal products, patient monitoring, visualization for laparoscopic surgery, AI for nutrition for diabetics for a closed-loop insulin pump, and spinal robotics.

Before joining Medtronic, Ori Hadomi, Medtronic Global vice-president of Strategic Initiatives & Partnerships, headed Mazor Robotics for 18 years, which was acquired by the company several years ago. The products developed by Mazor are the primary focus of Medtronic's current and future robotic technologies used for spine surgery. "Israel became the center of gravity for Medtronic current and future surgical robotics in the spine and brain, " says Hadomi. "We can be proud that technology invented by Israeli academics and developed by Israeli engineers has become the standard of care in the world." While the use of robotics in surgery today is primarily to assist surgeons in their tasks, Hadomi notes that Medtronic is thinking ahead of the curve and foresees a future when the knowledge and data it has accumulated will be able to be used to automate procedures and enable robots to perform surgical tasks autonomously. "We are moving surgery from an art to a science. Surgery should be predictable – both in terms of the procedure and the outcome," he says.

PR

Ori Hadomi - VP of Strategic Initiatives & Partnerships at Medtronic

PR

Laurence keselbrener – VP R&D at Medtronic GI

PillCam™ SB

Within Medtronic, Hadomi is also responsible for the development and realization of the corporate Insight-Driven-Care strategy. "Medtronic has the power to unlock the full potential of data technology," he explains. The Insight-Driven-Care strategy focuses on connecting all "the dots" into one, clear story, for patients and providers, harnessing the vast wealth of data, within and across systems, devices, therapies and patients and transforming it into actionable insights and actions in order to deliver precisely personalized medicine at scale. "Most medical devices today, says Hadomi, focus on a specific procedure that is performed in the point of care and that follows a standard, protocol. Patients are not looked at holistically. Hadomi says that the ability to connect a wide range of data sources will allow Medtronic to form a holistic picture of the patient's condition and offer customized insights and therapies for each patient and for many patients at scale. This strategy and vision will guide the development of therapies in Medtronic in the coming years.

"What makes Medtronic special in research and development," says Laurence Keselbrener, "is that we are multidisciplinary. We know how to take a lot of different disciplines, such as electronics, optics, software, and artificial intelligence, and blend them into innovative products. As we continue to evolve as an organization, we are bringing more and more talent as we continue to grow our products."

Keselbrener suggests that Medtronic Israel is an ideal talent destination for capable engineers, programmers, and developers. "We have state-of-the-art technologies and innovation, and there are many career opportunities. We are investing a great deal in training our employees and giving them opportunities to grow. Our mission is to help people be healthier. Every day, when you come to work, you know that you are doing something that is touching patients. Medtronic is a talent destination for engineers who want to work on the coolest tech but also want to help treat people and save lives."

Yanai Rubaja

Checkmarx office in Ramat- Gan

couldn't find anything decent, and I said I have twenty years of software development experience and nine years of application security experience. I can do better." Siman decided he could do better, and so he did, founding Checkmarx and teaming up with Benzaquen for the journey.

As the company's technology visionary, Siman has been instrumental in overseeing its product strategy from the very beginning, helping customers achieve their goals of developing and releasing more secure software. Today, he is the Chief Technology Officer (CTO) at Checkmarx.

The road from startup to multi-billion-dollar company was not always smooth. Checkmarx started at the Naiot Incubator in Yokne'am. The company received a small amount of funding from the government and created a prototype program as a proof of concept to attract investors and succeeded in attracting institutional and strategic investors from Israel, the United States and Japan. In 2011, Salesforce, the large US cloud-based software company, invested in Checkmarx. "Salesforce was an early strategic investor," says Benzaquen. "They are early adopters, visionary and are very sensitive to software security. It was a match made in heaven."

Dalit Krainer, CHRO

Shelly Avidor

Maty Siman, CTO

Benzaquen says that the company went through several stages until it reached success. "There was the incubator, and then we had to bootstrap using loans and the proceeds of our first sales because we were in a low funding period, and it felt quite alone." He calls it the 'Garage period,' when the company literally operated from above a garage in south Tel Aviv. During the 2008 financial meltdown, he says, it was difficult to raise funds.

Fast forward to 2015. The market for application security software was becoming mature, and Checkmarx was becoming well-known in the industry. Benzaquen brought in Insight Partners, one of the top US growth equity firms, and fully recapitalized the company for $84 million. This was the company's first exit. Between 2015 and 2020, Checkmarx nearly doubled in size each year. In 2020, the company fully recapitalized again and was sold to Hellman & Friedman, a large US private equity firm known for acquiring best-of-breed companies. Benzaquen says that while technically it reflected a change of shareholder, in actuality, it was another full exit at scale for Checkmarx and its employees. The exit took place on March 16, 2020; as much of the world shut down because of Covid, Checkmarx sold for over $1 billion.

Benzaquen says that the pandemic raised the platform and visibility of software to a higher level. During the first months of the pandemic, he notes, people were in shock, but once people got used to the new reality, Checkmarx resumed its sustained growth. "We have grown throughout Covid," says Benzaquen. "We never stopped growing even though it was a bit slower than we were used to." He adds that the company can work with its customers either online via the cloud, or in-person, which helped the company during Covid lockdowns.

The emergence of application security

Benzaquen explains the importance of application security. Most people are familiar with the idea of network security, which protects a network of computers from attacks, as well as antivirus software, which protects an individual's computer from malicious software. "In the early 2000s," he explains, "another layer of security, known as application security, emerged." Applications that simplify functions, says Benzaquen, are the bridges that connect the organization with the outside world. Checkmarx deals with this layer.

In 2005, he continues, there were no smartphones, and applications were not in widespread use. "Today, everything runs using applications. Whether it is your car, your smart home, or simply your air conditioner, you may not be able to use them without one. This has been driven by software over the past fifteen years and has accelerated exponentially with the growth of smartphones and internet interconnectivity," he says.

Checkmarx designed a platform that allows developers to develop code securely throughout the Software Development Life Cycle (SDLC). "Originally, we built a Static Application Security Scanner for developers and Chief Information Security Officers (CISOs) that are responsible for security." In today's security-conscious world, says Benzaquen, "code needs to be secured in order to exist."

Benzaquen says that the company had to do quite a bit of product evangelism in the early days, educating CISOs, developers and industry members about the need to provide application security during software development. Eventually, he says, application security became mainstream due to the exponential growth of software code being developed and run by applications. "It became an important layer of the security stack," says Benzaquen.

All organizations that develop code today, he emphasizes, must use a software solution that checks code for vulnerabilities. Siman and Benzaquen

The world runs on code, and they secure it

Read the fascinating story of Checkmarx, the leader in Application Security solutions. What are the secrets of its success? How has the company overcome challenges, and what role does passion play in its achievements? This is a story you don't want to miss.

By Alan Rosenbaum

Emmanuel Benzaquen, CEO

Sam Itzhakov

Checkmarx, the software security firm headquartered in Ramat Gan, has more than 1,000 employees and offices in twenty-four countries around the world. More than half of the Fortune 50 companies are Checkmarx customers. While some Israeli hi-tech companies are dubbed 'unicorns,' indicating a $1 billion valuation, Checkmarx has exceeded that amount, and as the company's CEO, Emmanuel Benzaquen says jokingly, it is a 'multi-corn.' Yet, there is far more to the Checkmarx story than financial and artistic success. The company is about people, passion and performance.

Emmanuel Benzaquen was born in Paris and after completing his master's degree in electrical engineering, moved to the UK, where he began a Ph.D. program in robotics and computer science. Benzaquen was more interested in a business-oriented environment and soon moved to California, where he completed an executive MBA degree. He spent ten years in Silicon Valley working in the software and semiconductor field. "There is a saying in our field," says Benzaquen, smiling, "that if you can do embedded software (which is part of semiconductor work), then everything else is easy."

Beginnings - From Silicon Valley to Israel

After three successful business 'exits,' Benzaquen decided to go back to his original plan and try his luck at what he calls "the other Silicon Valley," Israel. Between 2003 and 2005, he frequently traveled between Israel and the United States, consulting in the Israeli hi-tech industry. During that period, he met Maty Siman, a talented programmer and security expert who wanted to create an application security company. "I really loved the idea, and Checkmarx was at an embryonic stage in his mind," says Benzaquen of his meeting with Siman. "I loved it so much that I said to him, 'This is great. Let's do it.' We joined forces, and I became the CEO, and that's how the company got off the ground. I've been working with Checkmarx ever since. It's been over 16 years since we started the company, and it's been a long journey."

Living in San Francisco, Benzaquen had a good life, and making Aliyah was a real change of culture. "It was a bit of a shock," he recalls." Coming to Israel, Benzaquen wanted to create a company that would last, that would be sustainable, and that would create job opportunities in Israel and around the world. He hoped that Checkmarx would be that company.

Maty Siman, the company's founder, was born in Jerusalem and received his first computer, an 8-bit Amstrad 6128 home computer that included the BASIC computer language, when he was seven years old. "I got hooked," he recalls. "On that day, I knew that's what I wanted to do when I grew up. Since then, I've been writing software every day."

Siman spent seven years in the IDF, working in the army's software development school and later in one of the army's special information security units. After completing his army service, he spent two years in the Prime Minister's Office as a senior IT expert and project manager.

Siman's IDF service and work in the Prime Minister's Office inspired him to found Checkmarx. "One of my tasks during my work," he says, "was to find a product to help developers write secure code. I

PR

Learning event in Singapore, April 2022

Yanai Rubaja

Partner Summit Event, EMEA, May 2022, Tenerife

PR

Yanai Rubaja

Hanukkah party, December 2021

Krainer says that Checkmarx invests in its managers in a similar way. "It is interconnected," she says." Leaders have a significant effect on the company, and Checkmarx trains its leaders, offering courses and workshops for managers at all different levels.

The training even extends to the very highest level of the company. Checkmarx recently held its very first Checkmarx Leadership Forum, which included all 28 vice-presidents, thereby expanding the level of leadership in the company beyond the key executives who report to CEO Benzaquen. This forum included staff from all the company's different regions and veterans and new hires from various departments within the organization. "We held one week of conferences," says Krainer, "which provided a great deal of leadership content. It also gave them time to work together and develop strategic projects to help grow and advance the company." Given the large investment in leadership and organizational development, she says that the company first considers promoting from within when selecting managers for different departments.

Checkmarx, like many companies around the world, has had to deal with the challenges of increased resignations in the wake of the pandemic. Krainer says that the company has become more creative and flexible in order to bring more talent to its ranks. First, it developed a hybrid employment model and decided to open employment to contractors, subcontractors, freelance workers, consultants, and part-time and temporary employees. This, she explains, brought a new wave of talent to the company.

In addition, says Krainer, the firm has begun to hire and train university graduates who have minimal or general experience in software security. She says that while the training process may be slow at first, college graduates who come to Checkmarx with creativity and a willingness to think out-of-the-box catch on quickly and become valued employees.

Regarding the hiring of employees from the minority communities in Israel, Krainer says that Checkmarx is working with a contractor that employs Haredi women in research and development. The company is planning on hiring more members of minority groups in Israel and other Checkmarx sites around the world. Additionally, Checkmarx is working to ensure equal compensation for men and women throughout the company.

Of the company's 1,000 workers, approximately 350 are in Israel, 200 are based in the United States, and the rest are stationed in France, Germany, the UK, India, Singapore, India and Portugal for the most part. Interestingly, Portugal has turned out to be a great source of talent for the company, which now has an office in Braga, which is located near Porto. "Portugal is our hidden gem," says Maty Siman. "Ten years ago, when we were a small company, we needed an alternative to Israeli developers that would scale faster." Siman located a woman in Portugal who did some contract work for the company. He was very impressed with her work, and she told him that she taught at the university in Braga, which had many students who were expert in code analysis and were available. Checkmarx began hiring people in Braga, and today, after ten years, there are over 150 people employed in the Braga office. The woman who completed the first project for Maty Siman is now vice-president of Engineering and Checkmarx site manager in Braga.

The future of Checkmarx

Long-term partners Benzaquen and Siman are optimistic about the company's future. Maty Siman quantifies his hopes numerically. "I predict tenfold growth in the market over the next five years," says Siman, "and it will have a direct positive impact to our own market valuation. There are 30 million software developers in the world, and all of them need to develop secure software. We want to keep our position as the best solution in the market."

"I came to build something sustainable and make a mark on the industry and on people," says Benzaquen. "We are continuing to develop the company, and we are investing heavily in innovation and acquisition. This is a growth industry, and our focus is on growth in the coming years."

Benzaquen continues and says that Checkmarx is a classic story of enterprise software that has succeeded. "For me, the story of Checkmarx is a story of being in the right place at the right time with the right people with a strong vision, never giving up, and not looking for a quick fix. It's hard work. You must brand yourself and build trust with companies, investors and people one at a time. It's about building relationships, block by block. We will continue to go in that direction."

We conclude our interview with a discussion of the company's theme for 2022. "Every year, says Benzaquen, "I place a lot of importance on the theme of the year at Checkmarx. This year, our theme centers around passion. We want to enable our employees to let their passion speak out, not only in their work and performance but in other activities as well." Having passion for one's job makes people not only more efficient in their work but more fulfilled personally, he says.

For Emmanuel Benzaquen, Checkmarx is the "how" to support his passion to create a company that would last, be sustainable, and create job opportunities in Israel and around the world. The company's success as one of the world's leading software security firms is the result of a healthy dose of that passion, industry-leading performance, leadership and people skills.

Learning event in United States, March 2022

PR

explain that the way that code is written today necessitates application security. Fifteen or twenty years ago, developers wrote the code for their projects independently, and the use of code from outside sources was minimal, if at all. With the development of the cloud, applications today are built from many different sources, including code from the public domain known as Open-Source code. Bits and pieces of code are frequently used from different providers. Whereas in the past, developers needed to check only their own code, today they must analyze every component. Checkmarx can correlate the results and understand the ecosystem of code providers.

The top tier customers for Checkmarx products, says Benzaquen, are financial institutions, the military, and software vendors, but its customer base is across the spectrum and extends to insurance companies, the healthcare industry, and retailer companies, to name just a few verticals. Without application security, information could be stolen, monitored, or diverted and could be used by malicious actors for financial or strategic gain.

There are other companies in the application software security space, but Benzaquen says that Checkmarx is 'head and shoulders' above their competition. "We work with developers, and the primary function of developers is not to do security – it is to develop. There is a fine line. How do you tell developers to develop securely, but without slowing down their development? At the end of the day, the developer is paid to design a piece of software that functions. Now, we are adding a layer of complexity." Benzaquen says that Checkmarx software creates seamless integration within the software development lifecycle without being intrusive to the developer.

The Checkmarx advantage

Both Siman and Benzaquen, experienced software developers, explain that Checkmarx has an advantage over the competition because they are the only company that truly understands code. "You need to understand code to be a developer at heart. We understand code, and we understand security," says Benzaquen.

As a result, adds Siman, "We address a dual persona: the security team and the development team."

Checkmarx has a dedicated security research team that, over the years, has discovered many security breaches in commercial products, including Android phone software, Amazon Alexa, and others. The team found a vulnerability in Android that would enable someone to connect to Android devices and activate GPS, video cameras and microphones. They were able to hack into the Tinder dating app, which could enable hackers to see the data of its users. Checkmarx security team members discovered a vulnerability on the Amazon Alexa that would allow users to log into any Alexa device and eavesdrop.

Shelly Avidor

"Our advanced security team allows us to stay ahead of the competition and find out about new trends," says Benzaquen. "We incorporate all of these findings into our product itself." Whenever the security team discovers a security breach, it notifies the manufacturer through a responsible disclosure practice so that it provides enough time for the vulnerabilities to be fixed. Apart from improving the Checkmarx product, Siman says, "We want to make a better world."

Investing in Checkmarx employees

Making a better world within Checkmarx for its employees is the task of Dalit Krainer, Chief Human Resources Officer at the company. Krainer, who has more than 20 years of global HR experience, is responsible for leading the company's human resource strategy, mission and values throughout the company, which has 1,000 employees spread throughout 24 countries. "It's very complex to align everyone all the time towards one vision and one mission with common goals," she says.

Krainer says that for Checkmarx, "everything is about leadership, and good leaders creating more good leaders." The most important goal of the HR department, she explains, is preparing the company for its future. "This has to do with the talent we are hiring, the compensation we are offering, the learning mechanism and technology that we are providing, and the leadership we are grooming. Everything that we are doing is to make sure the organization is ready for the future that the company has chosen for itself."

The second complementary goal, she adds, is to help the company employees unleash their potential and improve themselves. "If everyone among our 1,000 employees does something better every day, the magnitude of improvement within the company is huge. This is how we can push our company forward."

Checkmarx invests in its employees to help them succeed, says Krainer. This allows them to do things they didn't think they could accomplish. The company has created a learning platform that enables its workers to constantly learn and increase their knowledge. "We believe in a mindset of growth – of learning all the time," she says.

Moreover, Checkmarx has created a mechanism by which employees can learn a new skill within the company and move from one area to another. "We want our people to grow with us," says Krainer. "If you are a field salesperson wanting to move to research and development, and you are a good employee, we want to invest in you. We want you to do it at Checkmarx rather than with another company." The company has created a career map system where each employee can assess their current skills and list the desired job they wish to perform in the future. The system provides two indicators – the current gap in qualifications between the employee's current role and the future one that they want to assume, and the requirements, qualifications and courses that they need to learn in order to assume the next role. In this way, Checkmarx employees can navigate from one point to another within the company. Since the beginning of this year, notes Krainer, close to 40 employees have moved to different departments within the company.

Intuit Israel

Unlocking Job Opportunities While Powering Prosperity Around the Globe

By Alan Rosenbaum

Gene Golovinsky

Eyal Marilus

With a customer base exceeding 100 million and 15,000 employees around the world, Intuit is one of the biggest names in the world of financial software. People across the globe use Intuit products such as TurboTax, QuickBooks, Mint, Credit Karma and Mailchimp. Given Intuit's prominence as a global technology platform, it's not surprising that in 2017, Israel was officially named as Intuit's second development center outside of the U.S.

Gene Golovinsky, General Manager of Intuit Israel and VP Security R&D, says that Intuit was quick to react to the challenge posed by the pandemic. "I'm proud to say that Intuit was one of the first companies that declared work-from-home mode across all our locations worldwide, long before the government decided to close our offices," he says.

Fortunately, Intuit was digitally prepared in its employee management and recruitment processes, even before the pandemic hit. Golovinsky says that as the situation worsened, the company took concrete steps to alleviate difficulties. As unavoidable situations rose to the surface, like Zoom fatigue and the humane need to socialize, the company realized that benefits demanded a refresh that would cushion current circumstances. "We offered extra recharge days," says Golovinsky, "which are paid vacation days on behalf of Intuit, piled on top of existing personal vacation days. We introduced new physical and mental health tools and ran countless sessions to ensure our employees feel that their work-life ratio is well-balanced. We also provided ergonomic equipment to help improve the Work from Home experience, and many more benefits were either added or increased."

Golovinsky notes that even with the pandemic at a relatively low ebb at the present time, the company's pre-Covid ecosystem cannot resume fully. He reports that 80% of Intuit employees would prefer a hybrid-workplace model that brings together the power of virtual collaboration with the benefit of opportunistic on-site interaction. Accordingly, the company has defined Intuit's future work strategy, which came into effect May 16th, 2022:

· Establishing a hybrid working model that brings together the best of virtual work and in-person connections and collaboration.

· Reimagining our workplaces by evolving our offices to be dynamic spaces for co-creating, making social connections and innovating.

· "Widening our net" to attract talent by expanding our presence in new geographies to access more top talent and build an increasingly diverse workforce.

The majority of Intuit's employees meet, collaborate and work from Intuit sites 2-3 days per week. "We are excited by the possibilities this strategy creates for our employees, our culture, and our ability to continue to deliver for our customers," says Golovinsky.

Intuit's head in Israel adds that the company celebrates diversity and inclusion, despite the hi-tech industry's relatively low female representation. "We aim to be part of a culture that celebrates diversity and inclusion," says Golovinsky. "Representation isn't enough – it takes real culture change - creating equal opportunities for men and women can strengthen both teams and organizations, yet a company has to be passionate enough about equality to make it core to their culture. Increasing diversity is a commitment, but ensuring those employees stay at the organization and contribute in an equitable way should become the priority. An inclusive workplace should normalize discussions about careers, including feelings of confusion and the desire to get answers to hard questions."

Golovinsky suggests that mentorship programs can be part of the solution. Tech Women @ Intuit has launched a global mentorship program that facilitates 1:1 mentoring relationships. He says that the company's goal is to connect mentees with leaders and champions in the organization to invest, learn and develop.

Intuit Israel has also taken its own steps to encourage greater representation and participation of women in hi-tech, especially now, with the site's aggressive growth. "For the 5th year in a row," notes Golovinsky, "Intuit Israel, in cooperation with PyData Tel Aviv, brought and drove the international Women in Data Science (WiDS) Conference to Tel Aviv. The annual technical conference aims to inspire and educate data scientists worldwide and support women in the field by providing a counter to all-male panels. While all genders are invited to participate in the conference, WiDS features exclusively female speakers.

Additionally, our Women's Network ERG (Employee Resource Group) aims to foster a diverse, inclusive workplace and helps build understanding and empathy in our employees around the world. Through this company supported and funded ERG, we motivate our employees to group together around a common identity to promote and exchange ideas they're passionate about."

Today, Intuit Israel has more than 350 employees based at its Petah Tikvah headquarters. Intuit Israel is central to the company's mission of powering prosperity around the world by developing advanced capabilities and technologies that protect Intuit's customers and enable the strategic use of data and deep insight.

The Jerusalem Development Authority

Channeling High-Tech in the Holy City

By Alan Rosenbaum

Eyal Haimovsky

Photo: PR

Since its inception in 1988, the Jerusalem Development Authority (JDA), a joint agency of the State of Israel, the Ministry of Jerusalem and Heritage and the Jerusalem Municipality, has initiated, planned, and assisted in the economic development of Jerusalem. In recent years, the JDA has concentrated its efforts on cooperative efforts in hi-tech.

"One of our main activities,"says Eyal Haimovsky," CEO of the Authority, "is utilizing the relationships that Jerusalem has with leading academic institutions in Israel that are based in the city, including Hebrew University, the Bezalel Academy of Arts and Design, Machon Lev, and Azrieli College of Engineering and Hadassah Academic College, along with some of Israel's leading hospitals that are located in Jerusalem, such as Shaarei Zedek Medical Center and Hadassah Medical Center. We act as a bridge between these institutions and the leading names in the local industry in biopharma and technology."

Haimovsky explains that the Jerusalem Development Authority has been able to connect the research that is being conducted by leading academic institutions in Jerusalem and adapt it to local industry in the city. The JDA has assisted in networking and helping in the growth of companies like Mobileye, which was created by Hebrew University computer scientist Amnon Shashua, and Lightricks, a mobile app company started by five students from Hebrew University that today has grown to more than 400 employees.

The Jerusalem Development Authority assists high-tech companies in the city, providing grants to companies that are given to students, and has created accelerators at a number of academic institutions in the city, in partnership with leading companies in the industry. "In this way," says Haimovsky, "a student will come to Jerusalem to study, find work in the hi-tech industry here, and will end up living in the city."

Recently, says Haimovsky, the JDA initiated a video gaming incubator, utilizing connections between the Hebrew University Department of Computer Science and the Design Department at the Bezalel Academy of Arts and Design that is working with some of the leading game creation companies in the world. "We predict that Jerusalem will become one of the leading centers in the world for game creation within the next five years," he says.

The Jerusalem Development Authority has also been active in the field of biotechnology and has created biotechnology laboratories at Hadassah Medical Center and at Givat Ram that can be used by Jerusalem biotech startups. "This way, startups won't have to invest the money in new labs. They can come to Jerusalem and eventually remain in Jerusalem," says Haimovsky. The JDA also revitalized the old Teva plant that had closed in Jerusalem, placing new biotech companies in the old Teva building. In recent years, says Haimovsky, the Jerusalem Development Authority has invested tens of millions of shekels in high-tech companies in the city. The most notable example cited by Haimovsky is that of Mobileye, which received NIS 350 million ten years ago, and now has 4,000 workers. The sale of Mobileye to Intel in 2017 netted NIS 1 billion in tax revenue to the state.

Haimovsky notes that the Jerusalem Development Authority is active in promoting employment in hi-tech within the Haredi and Arab sectors. The JDA created BizMax, an accelerator that assists Haredi men in internet business development, and has developed a training program for Haredi women who want to enter the business world.

The JDA will soon be opening an accelerator in East Jerusalem for members of the Arab community that will join hi-tech with workers in that section of the city. "It will be a type of hub," says Haimovsky. "Companies will hire workers from the Arab sector in East Jerusalem, and they will set up branches there." The Authority has also been active in social programs and supports PICO Kids, a Jerusalem-based organization that provides programs in STEM education and robotics to primary school children, helping to get them interested in high-tech at a young age.

Haimovsky added that the JDA provides significant support to both the Sam Spiegel Film and Television School and the Ma'aleh School of Television, Film & Arts. It has also created an animation and film incubator at the Cinematek in Jerusalem. The numerous video projects have attracted the attention of the world's foremost video production houses, including Sony, Netflix, HBO and Mattel.

The vision of the Jerusalem Development Authority is to promote Jerusalem as a leading international city in the economic sector and in the quality of life in the public domain. The projects cited here, and the organization's other activities, are helping the city realize that vision.

Buff Technologies founders, From left: Ophir Gertner, Elay De Beer, Ophir Sarapi. Credit Ilan Spira

thousands of Buff gamers in Israel and Arab countries.

Interestingly, in the past two years of the pandemic, says de Beer, sales rose dramatically. “People were stuck in their homes and in quarantine,” he says. “They worked from home and had more time available to use their computers. We were in the right place at the right time.” As a result, Buff’s user base grew, and its retention numbers increased. Even before the pandemic struck, says de Beer, Buff team members were working remotely, and as a result, the company was able to handle working conditions caused by the pandemic.

Buff Technologies office

De Beer says that Buff has several revenue streams from its core business. When users install the Buff app, ads appear on-screen before and after games are played. These ads are targeted to gamers and generate income for the company. De Beer emphasizes that ads never appear during gameplay itself.

In addition to the free version of the Buff app, the company also offers three paid subscription plans – Premium, Premium Plus and Premium Elite. The Premium plans offer players special benefits, including additional Buff points monthly for games played, exclusive Marketplace items, special raffles and promotions, a dedicated Discord channel (Discord is a free voice, video, and text chat app), and more. The higher the Premium plan, the faster the players earn Buff points.

De Beer says that Buff is also earning money from conducting direct campaigns on behalf of companies such as Alienware, a Dell subsidiary, Monster, Hulu, and Lego. Finally, Buff offers Visa debit cards for gamers, which can be used for all purchases, like regular debit cards. Buff players will earn Buff points when using this Visa card, and Buff earns a commission from sales.

“I believe in gaming as the future of entertainment,” says de Beer. “Gaming is evolving and growing at an amazing pace. The world is shifting towards more engagement, and Buff brings a needed solution for gamers. As users spend more and more time playing games, doing what they like best, Buff gives them the ultimate loyalty and rewards program.”

Buff Technologies

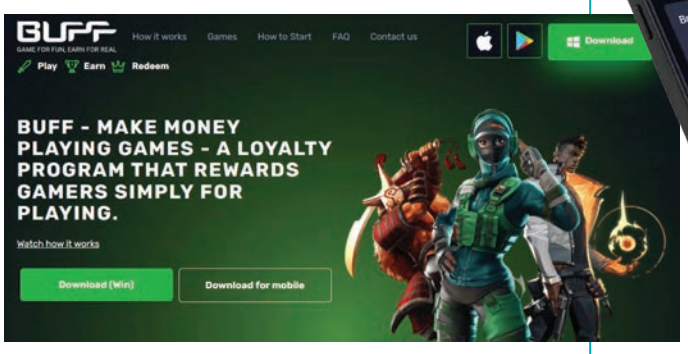
The Toolkit for every video gamer

By Alan Rosenbaum

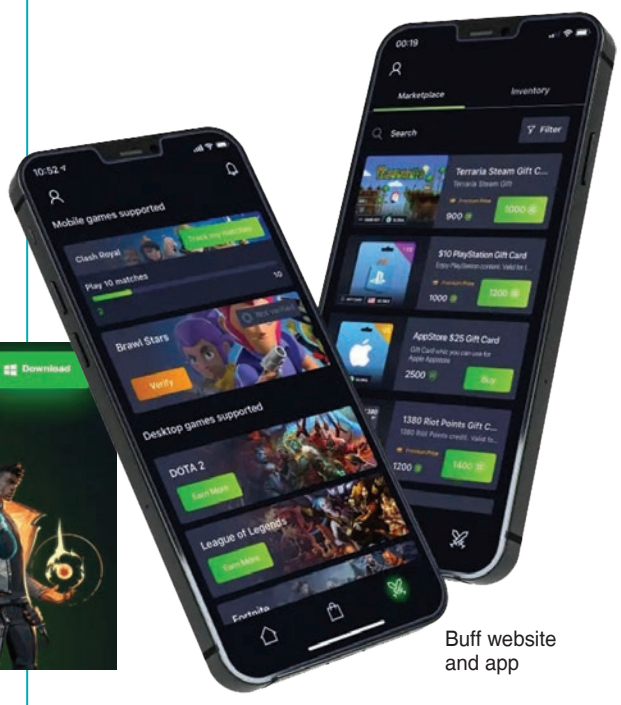
Buff Technologies office entrance

"Buff is a must-have toolkit for every gamer as part of the gaming experience," says Elay de Beer, CEO and co-founder of Buff Technologies. With a customer base of more than six million users worldwide and over 430,000 gamers who use it daily, most users apparently agree.

In video game parlance, the word 'buff' is an element that makes a game more powerful. In that sense, the company, which was founded in 2018, lives up to its name. Users install the free Buff app on their Windows-compatible computer or mobile device, which then boosts game rewards on some of gaming's biggest brands, including Fortnite, Minecraft, League of Legends, and many others. "Gamers play the game they love best," says de Beer, "and our tech provides them with a reward layer that enables them to collect in-game achievements, which can be exchanged in the Buff marketplace for game currency and gaming goods, like skins – a graphic or audio download which changes the appearance of characters – gift cards for Amazon and Spotify, and hardware like headsets and mice, and even pizzas from Dominos." The Buff app issues rewards based on the amount of time played and achievements reached by players in each specific game. The app uses machine learning, artificial intelligence, and big data information analysis to determine achievements and rewards.



Currently, Buff is compatible with nineteen video games, including Fortnite, League of Legends, Valorant, Counter Strike, Dota 2, Call of Duty, Tom Clancy Rainbow Six, Teamfight Tactics, Auto Chess, PlayerUnknown's Battlegrounds, Apex Legends, Rocket League, Splitgate, Overwatch, Hearthstone, Minecraft, Clash of Clans, Clash Royale and Brawl Stars.



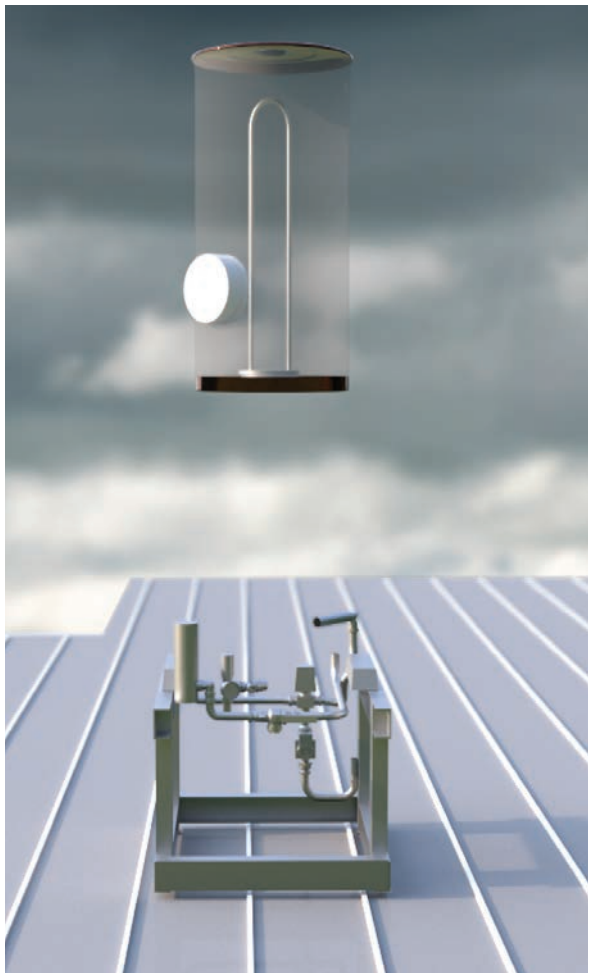
Buff website and app

CEO de Beer, age 44, has been playing video games since he was a child – today, he enjoys playing with his children – and believes in gaming as the future of entertainment. Buff was co-founded by de Beer and two friends from their Air Force days in the IDF, Ophir Gertner and Ophir Sarapi. Gertner is today the company's Chief Revenue Officer, and Sarapi is the Chief Operating Officer. "It's always good to work with people you like," says de Beer. The company is based in Herzliya and houses a team of twenty-five programmers and designers. An additional twenty-five engineers work remotely from Ukraine and Slovakia. Buff is a public company and in August 2021, became the first local gaming company to be listed for trading on the Tel Aviv Stock Exchange.

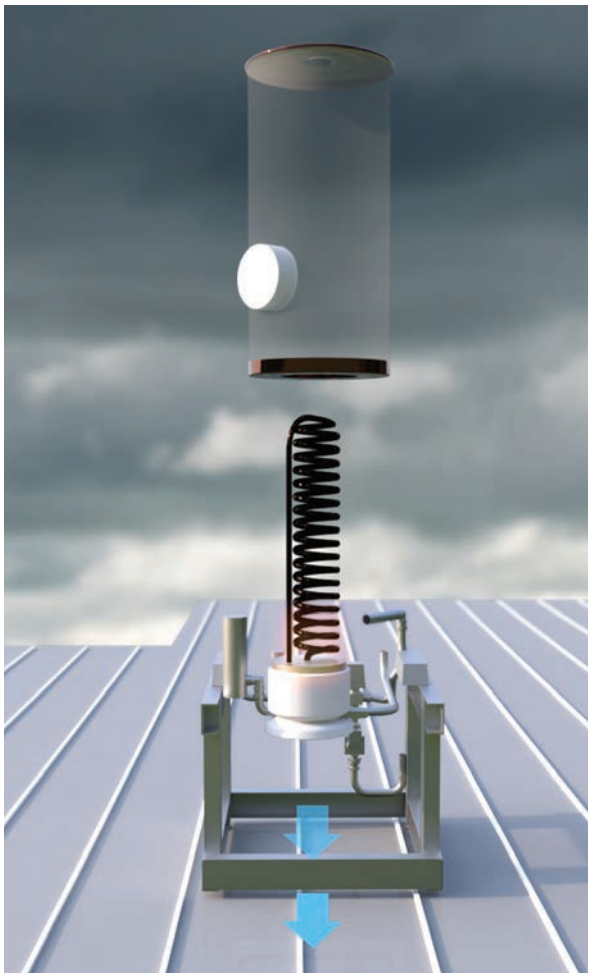
De Beer says that Buff offers a unique solution for gamers, in that the program works across three platforms – Windows, Android and iOS. Users can begin a game with Buff on one platform and continue playing the game on another system, and Buff will keep track of their rewards and achievements. Installing Buff does not affect gameplay or slow down computers or other devices in any way. Buff will run on any standard Windows PC that can run video games, as well as Android and iOS devices, and will soon be available for the X-Box and Sony PlayStation consoles. He adds that Buff can adapt itself to numerous platforms and is ideally suited for virtual gaming in the 'metaverse.'

The video gaming industry is considered by many to be the next evolution of entertainment, and gaming already generates more revenue than movies and music combined. More than two billion people worldwide play video games, and analysts say that by 2025, the video game industry will generate more than $260 billion in revenue. Given these numbers and the steady stream of popular games being released, Buff is in an ideal position to leverage the platform. Surveys have shown that approximately 60% of gamers are male, while 40% are female. The average age of gamers is between 32 and 33, but the largest percentage of gamers are in the 18–40-year-old age bracket.

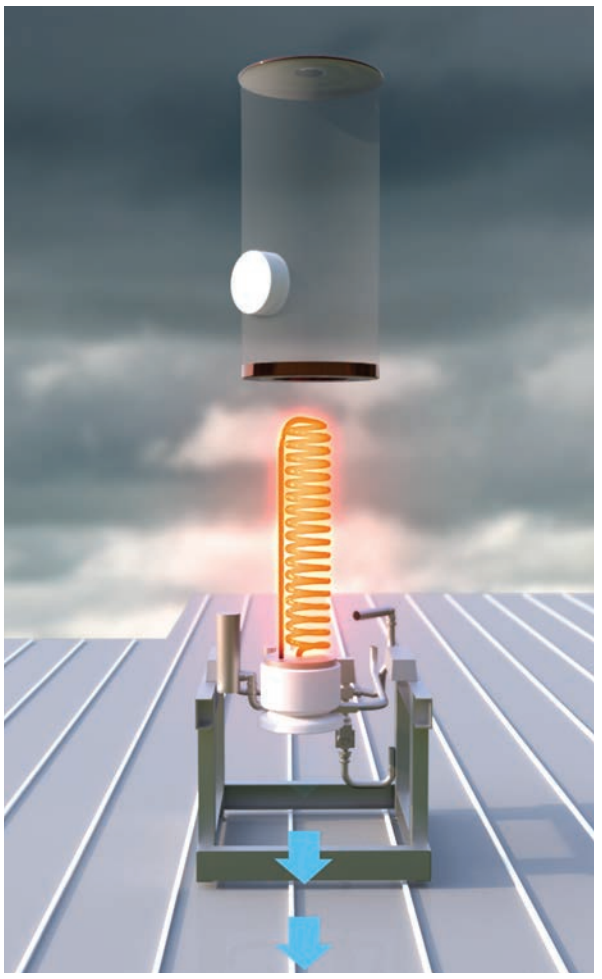
Gamers around the world use Buff, and while the company's primary focus has been on the United States and Europe, the company is making a push into the Asian market in countries such as Japan, South Korea and China. De Beer says that there are



Existing boiler flanges are inefficient, causing significant energy consumption



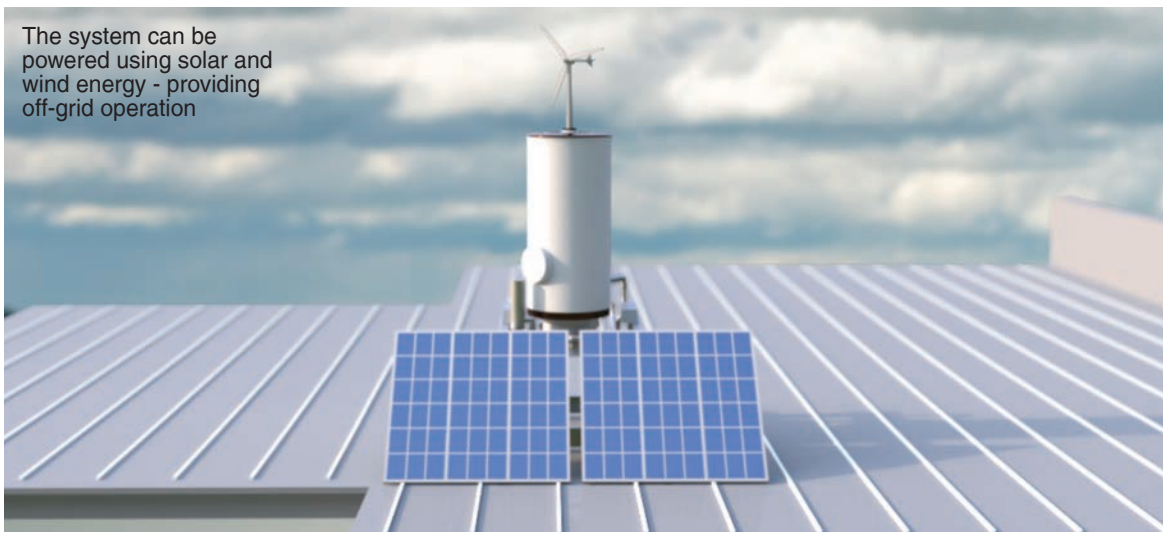
Thermo is developing an innovative standard for efficient and economical heating of existing water heaters



This dramatically reduces the energy required to heat a water heater from 11.5 to 2.5 amps per hour.

The project is led by Professor Doron Auerbach

PR



The system can be powered using solar and wind energy - providing off-grid operation

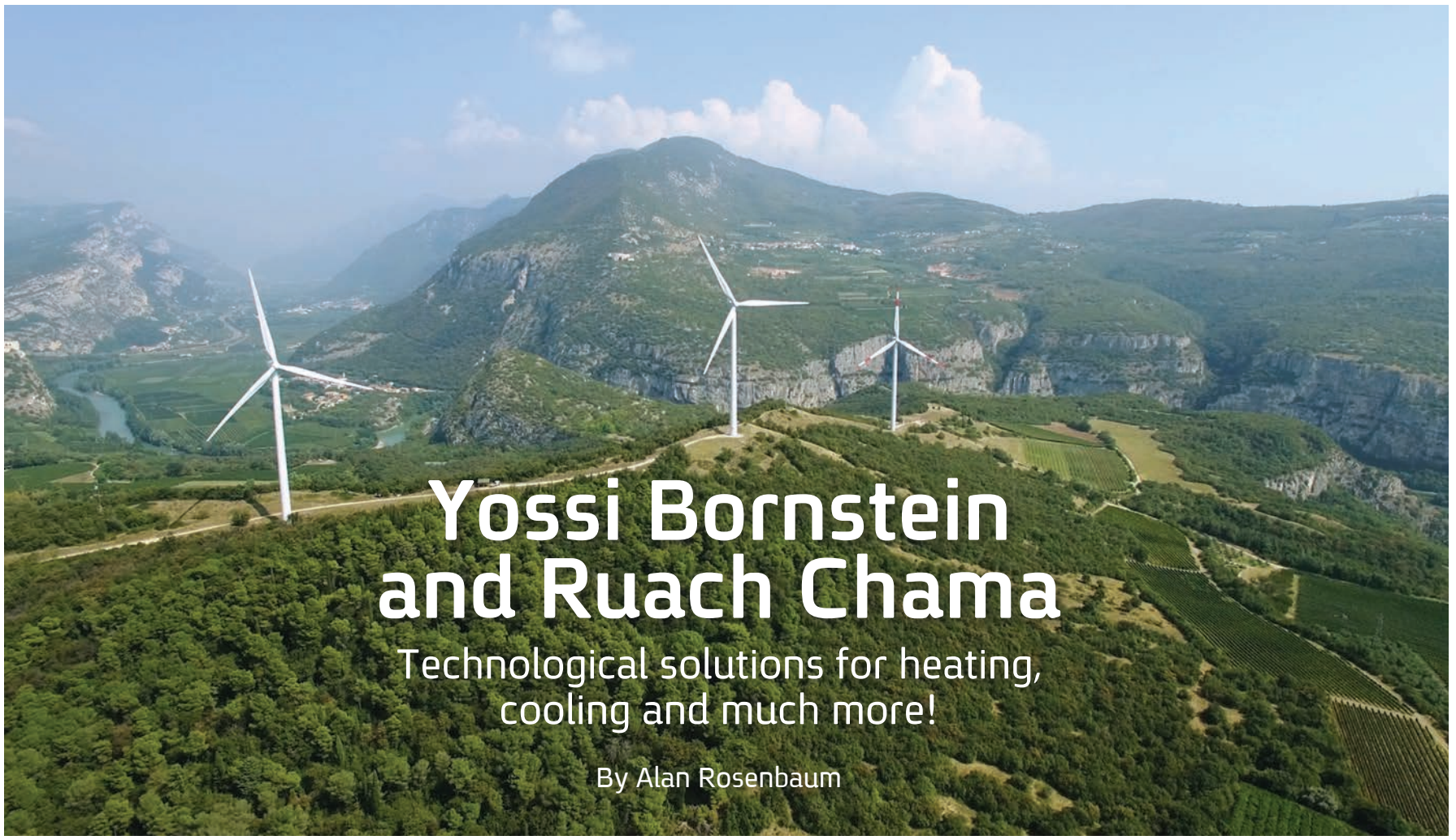
millions of shekels.

Bornstein says he has a solution. “From now on,” he says, “businesses will not receive a rebate for gas expenses based on how much gas they purchased, but rather on how much gas they actually use.” How can this be calculated? Bornstein says the answer lies in the OBD, or on-board diagnostics, a computer system built into every car that monitors vehicle systems such as the engine, fuel pumps, the exhaust and much more. The company integrates existing technologies, through which they can extract the data of the actual amount of fuel used from the on-board diagnostic systems. Bornstein is working with I.S.R. Technologies in Israel and expects to have the system running in just a few months. He says that this solution will also be used in other countries that allow business fuel deductions in order to prevent cheating.

Bornstein’s third project is a defense-oriented invention that he calls ‘Esh Shamayim,’ or ‘Fire from Heaven.’ “Speed is important on the battlefield,” says Bornstein, who predicts that future conflicts will be fought with thousands of drones attacking multiple locations in seconds. Drone technology is advancing by leaps and bounds, both in terms of performance and lower costs. Low-cost drones are easy to operate and can be difficult to intercept, making them a serious threat in battle and terrorist and criminal incidents. Standard missile defense systems, such as Israel’s Iron Dome, will be incapable of intercepting a vast army of drones attacking in a matter of seconds. The Esh Shamayim is a tank-like device that will be able to intercept drones using a “smart” multi-purpose cannon with a firing rate of 6,000 bullets per minute, which can provide an immediate response to an army of drones. The Esh Shamayim will be simple to operate and will require just one operator with minimal training, and it will consist of largely off-the-shelf parts, making it inexpensive to manufacture and maintain. Bornstein again touts his advantage in employing creative solutions rather than ‘inventing the wheel.’ The company is developing unique algorithms, he says, that will enable all of the standard systems in the device to communicate with each other and work efficiently. These advantages position Esh Shamayim as an ideal solution for the price-sensitive semi-security market.

The fourth and final project disclosed by Bornstein is called ‘Best Air,’ a new type of home air conditioning unit that does not require an external unit outside the home. This project, like Ruach Chama, was in development until the unfortunate incident that incapacitated him, and he has revitalized the project in recent months. In traditional air conditioners used today, the outside unit the part of an air conditioning system that contains the compressor, propeller fan, circuit board and heat exchange coil. It’s situated outside and pumps refrigerant to and from its companion indoor unit. We don’t know how Yossi has solved this problem, but we’re sure he’s got a clever solution!

Yossi Bornstein’s clever and fertile mind continues to unravel puzzles and develop solutions to complex engineering and computer problems.



Yossi Bornstein and Ruach Chama

Technological solutions for heating, cooling and much more!

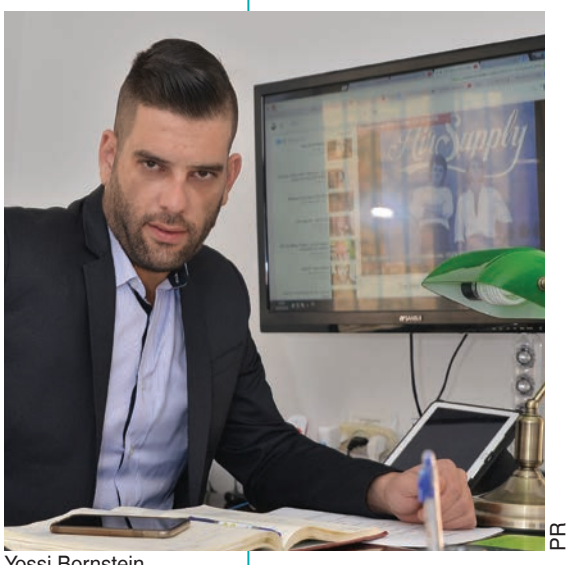
By Alan Rosenbaum

"I like to solve complicated puzzles," says Yossi Bornstein. "Things that people think are unsolvable." Eight years after an unfortunate incident left him with post-traumatic stress and a disability, Bornstein has returned with a multitude of ideas and plans that he hopes will propel him into the first rank of hi-tech entrepreneurs.

Bornstein has four different projects that he is developing from the offices of Hirschman Holdings Maintenance Company in Jerusalem, together with a team of talented engineers. The first is called Ruach Chama ('A warm wind'), and it is a solution that is intended to save energy using an upgraded heat pump in four standard household devices that use hot water– washing machines, dryers, dishwashers, and boilers.

Using a boiler during the winter months costs approximately NIS 1.70 per hour of operation, says Bornstein. He has developed a new type of flange for boilers that uses far less electricity and lowers the cost to just 25 agorot per hour. "When people use less electricity, it has an effect on a worldwide level," he says.

Bornstein's new technology is based on upgrading existing heat pump technology. The heat pump absorbs heat from the environment using an evaporation process that compresses the gas formed and emits the required heat. This dramatically reduces the energy needed to heat a water heater from 11.5 to 2.5 amps per hour. The system can be powered using solar and wind energy, providing off-grade operation. Unlike competing technologies that require the replacement of the entire boiler and are far more expensive, Bornstein says that his solution requires just a simple replacement of the flange, which will cost just $200. The Ruach Chama heating solution can be connected to radiators or even under-floor heating systems.



Yossi Bornstein PR

Professor Doron Auerbach PR

Ruach Chama is conducting all of its product development in Israel, and Professor Doron Auerbach, a world-renowned researcher and expert in the fields of electrochemistry and energy systems, is an integral part of Bornstein's team. "We have the best minds and professors here in Israel," says Bornstein. "I want the Jewish people to be a light to the nations."

"As a customer, you won't feel the difference," Bornstein points out, because it is inside the appliance. "You will only notice the difference in the lower electric bill." Bornstein says that his goal is to ensure a lower usage of electricity, correspondingly lower electric bills, and ultimately a reduction in the worldwide emission of greenhouse gases. The company is planning on expanding the heating pump solution to industry in phase II of the project. "I didn't invent the wheel," he says. "I took something that hadn't been changed for 100 years, and I made some technological innovations to it."

Yossi Bornstein's second business is intended to solve gasoline fraud conducted by people who establish fictitious companies, that he says is costing the Israeli government upwards of NIS 500 million per year. Bornstein explains: "Gas in Israel costs roughly NIS 7 per liter. If one has a business, the car belongs to the business, and the Israeli government allows the owner to deduct NIS 1.50 per liter as a business expense." Bornstein began working on this project in 2014.

In Israel, certain unscrupulous people create a company and buy cars or other vehicles but don't actually use them. They then call the gas company, inform them they own a business, and buy a large quantity of gas that is delivered to them, to be used for their fleet of cars, that they don't use. They then deduct NIS 1.50 from their per-liter cost as a business expense, call a neighboring gas station, and sell the gas to the station at a discount. In this manner, the tax authorities are being bilked out of hundreds of

Fjord Investments

Bringing the digital revolution to the world of investments in Israel (and it's US-friendly!)

By Alan Rosenbaum

"We are the first firm to bring robo-advising to Israel," declares Kinneret Farzon, CEO of Fjord Investments. In order to understand the significance of this statement, one must first understand the meaning of the term and the background of the person who is leading this revolutionary financial service in Israel.

Robo-advising is a digital platform that provides algorithm-driven financial planning services with little or no human supervision. An online 'advisor' asks questions about the prospective investor's financial situation and then, using the answers provided, offers financial advice and invests the customer's money. Robo-advising is easy to use and has lower fees than more traditional investment services.

Robo-advising has become quite popular in the United States, Europe and Asia and has become a $7 trillion market. By 2025, it is estimated that the robo-advising market will grow to $20 trillion.

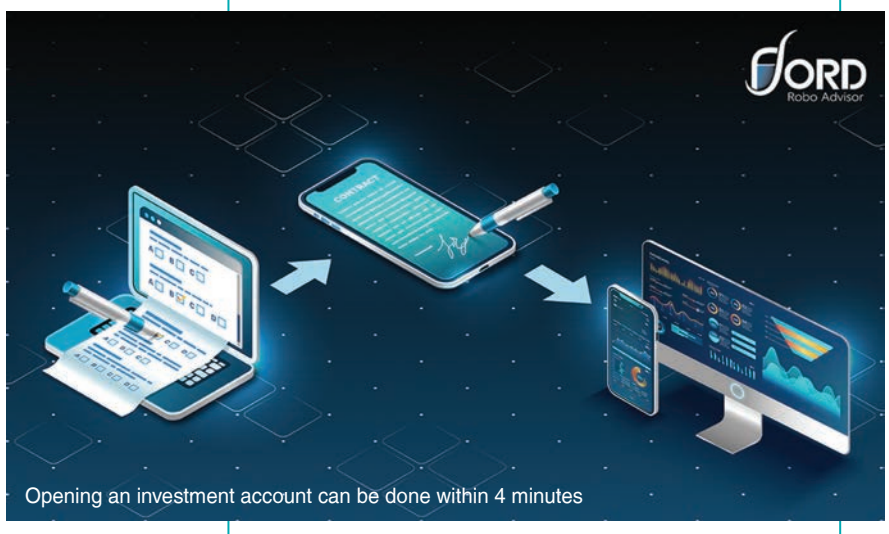
Kinneret Farzon is a licensed investment portfolio manager through the Israeli Securities Authority, with more than thirteen years of experience in the capital markets, including working at major investment firms such as Meitav Dash Investments and Psagot Investment House. She has worked in the establishment and operation of many financial ventures. Farzon has been joined at Fjord by such distinguished financial personalities as Ronen Torem, former CEO of Tower Capital Markets; Uziel Danino, a member and director of Rosario Capital, an underwriting company; and Ronen Ginaton, a former vice president and management leader at top companies in the industry.

Farzon explains that robo-advising is not only simple and easy but makes the investment world accessible to the average small investor, who doesn't have access to banks and large investment houses. "Big investment houses don't pay attention to small investors," she explains. Robo-advising enables small investors to receive the same level of services, digitally, in a quick and simple way that enables them to build their own financial portfolio.

While most of the world has adopted robo-advising, Israel's fintech market has not yet caught on, and Fjord is the first company to offer this service in Israel. Farzon explains that Fjord's robo-advisor service provides its advice to clients based on the responses to questions provided by the client regarding the level of financial risk they want to expose themselves to, specific information about their financial resources, and an analysis of big data, to provide recommendations. At the conclusion of the sign-up process, Fjord personnel speak to clients by phone to confirm their agreement. Farzon adds that human advisors at Fjord are available for phone consultation should clients have specific questions. She emphasizes that the money is always in the hands of the client, who may choose to withdraw it at any time.

PR

Kinneret Farzon



Opening an investment account can be done within 4 minutes

Fjord Investments is the first digital investment house in Israel

Fjord's robo-advising investment is designed for people who don't have the time or inclination to deal with their investments in a long, drawn-out process and who are comfortable with using digital investment services. In today's corona-fueled digital age, where virtual online services have supplanted in-person engagement, robo-advising is efficient and cost-effective.

Another ground-breaking feature of Fjord for many of our readers, Farzon explains, is that Fjord's investment services are an especially useful investment tool for American citizens living in Israel. US tax rules discourage investments in many popular Israeli investments, such as mutual funds, exchange traded funds (ETF) Kupot Gemel Lehashkaa because they are considered passive foreign investments (PFIC). Fjord Investments, on the other hand, she notes, invests in US exchange traded funds, which are allowed by the IRS. "This is a great investment solution for Americans here," she says, "and to this end we have associated ourselves with two prominent financial advisers for US-citizens, Rifka Lebowitz, who runs the 'Living Financially Smarter in Israel' Facebook group with over 35,000 members, and Gadi Last of IAL."

Farzon explains that Fjord has grown over the past two years during the pandemic. "Since we are a digital company, people were able to invest with us while they were closed up in their homes." She expects investments to continue and mentions that young people, in particular, who are comfortable with online engagement, prefer to invest online without speaking to advisors. Investment accounts can be opened for as little as NIS 10,000, she adds.

What are Fjord's plans for the future? "Our goal," says Kinneret Farzon, "is to get to as many communities as possible. We will continue towards our goal to reach those in Israel and around the world who are not regarded by the banks and investment houses. Some investment houses in Israel will not provide financial advice to anyone with less than NIS 250k to invest, and some banks have a minimum amount of NIS 400k," she says. Fjord Investments is based in Ramat Gan, and its team of programmers, advisors and financial professionals are well-equipped to propel the world of robo-investing in Israel.

PR

The factory in the Arava desert

Solabia-Algatech Nutrition
The micro-algae powerhouse

Bringing microalgae innovations to the world

By Alan Rosenbaum

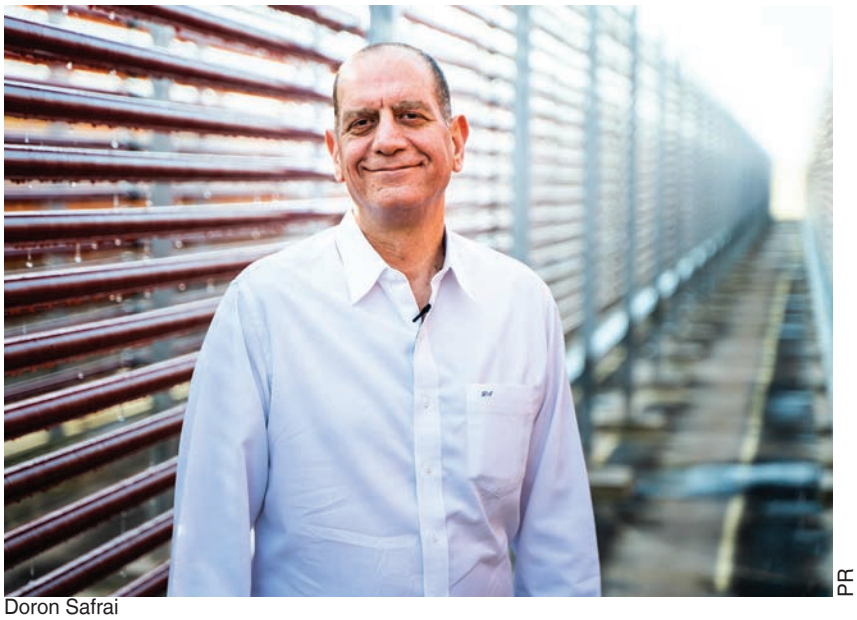
The desert can be full of surprises. Solabia-Algatech Nutrition, located in Israel's Arava desert valley, is the world's most innovative producer of commercial microalgae, single-cell life forms that are the source of an amazing variety of health-enhancing nutrients. At its 100,000 square meter (1M SQ feet) micro-algae production facility – the world's largest – located between the Dead Sea and the Red Sea, the company manufactures micro-algae products that are integral ingredients in dietary supplements used worldwide by hundreds of millions of people.

"The story of Solabia- Algatech Nutrition is a special story," says company CEO Doron Safrai. "In 1998, the founders decided to establish a company that would promote wellness, in of all places, Israel's Arava desert." Algatech was established at Kibbutz Ketura in southern Israel, just 50 kilometers north of Eilat, as a pilot plant to commercialize cultivation techniques developed at Ben Gurion University, a leading microalgae research institute – a relationship the company maintains to this day. Algatech was acquired in 2019 by the Solabia Group, a French cosmetic,biotech and pharmaceutical firm.

Most members of the Solabia- Algatech team live in the southern Arava desert, near the company plant, and hail from more than 15 different countries worldwide. Safrai says that the majority of the company's employees are academics with advanced degrees. Most microalgae plants produce one or two varieties at most, explains Safrai. Solabia - Algatech produces five different microalgae products that are used as health and dietary supplements, cosmetics, and for aquaculture. They are 100% natural and vegan, he adds, and the company's production methods do not pollute or damage the environment. Solabia-Algatech uses the sun energy for the microalgae growth and underground water supply that lies one kilometer beneath the Arava sands.

What makes microalgae unique? "Microalgae is an important part of the food chain and has been a part of the human daily diet for thousands of years," says Safrai. "They contain amino acids, antioxidants, lipids, and are a unique source that contributes to wellness." Many people consider microalgae to be the new superfood. Safrai points out that many people today are searching for solutions to prevent illness and disease before they strike, and microalgae is that type of solution.

Microalgae are particularly valued today, he notes, because in these post-pandemic times, people are looking for natural, life-prolonging solutions that strengthen the body's immune system. In addition, young people today who value sustainability appreciate Solabia-Algatech Nutrition products because they are fully sustainable and environmentally friendly.



PR

Doron Safrai

Solabia - Algatech Nutrition produces its microalgae products in Israel, and its products are incorporated into most of the leading brands used in health and dietary supplements as the active ingredient in these products. As such, Solabia - Algatech products are present in more than 40 countries worldwide. They are produced in several different delivery forms, including powder, softgel, capsules and gummies, organic versions and meet all health requirements and regulations in the US and around the world.

Solabia - Algatech CEO Safrai details the five different microalgae products made by the company:

Astaxanthin, one of the most powerful antioxidants known in nature. Its unique structure enables the protection of the cells from harmful reactive oxygen molecules that damage cells and organs. With over 600 studies conducted Astaxanthin was shown to be beneficial for a variety of applications, including: Healthy inflammatory response, physical endurance and recovery, skin health, cardiovascular health, cognitive health and eye health.

Fucoxanthin, an orange-brown carotenoid, produced by cultivated microalgae .Fucoxanthin in the form of a dietary supplement is an effective ingredient targeting liver health, glucose and triglycerides management.

Beta Glucan, an active ingredient scientifically proven to support the immune system and its response. Can be used in dietary supplements and cosmetics.

Nannochloropsis, an excellent source of protein and unique lipid composition including omega 3 and fatty acids, specifically EPA. Nannochloropsis is widely used in many aquaculture hatcheries and can also be utilized for the production of oil for cosmetics and for use as a dietary supplement.

Porphyridium, this microalgae contain pigments, poly-unsaturated fatty acids (PUFAs), phycobiliproteins and up to 40% polysaccharides. Porphyridium have shown great potential in cosmetic, nutraceutical, pharmaceutical and industrial applications.

As of 2021, Solabia-Algatech Nutrition is marketing several products produced by Solabia plants in France and Brazil, including unique and effective prebiotic and mineral salts with active physiological carrier, providing better efficacy.

What is Solabia- Algatech Nutrition planning for the future? "Our strategy is simple," says Safrai. "We will continue to develop new products which will contribute to health and wellbeing, with an emphasis on sustainability, natural and vegan products. Our company's organic growth will also continue through the acquisition of new technologies." The desert can, indeed, be full of surprises, and Solabia-Algatech Nutrition is one of the Arava desert's most fascinating wonders.

picture of THOR drone by Flying Production.

Asio Technologies

Innovative digital products for ground forces and air navigation

By Alan Rosenbaum

"We are contributing to Israel's security and the safety of our soldiers," says David Harel, CEO of Asio Technologies, a leader in tactical, augmented reality, targeting, orientation and situation awareness solutions, pioneering autonomous and immune optical navigation systems.

"Asio Technologies was founded by ground fighters and field commanders from special units with a technical bent, aiming to leverage their operational experience," says Harel. These army veterans, he explains, provide cutting-edge systems for the defense market in Israel and around the world.

The company's systems incorporate electro-optics, hardware and software, providing a complete package for its clients, which include the IDF, foreign armed forces, defense integrators and contractors, and drone manufacturers, among others.

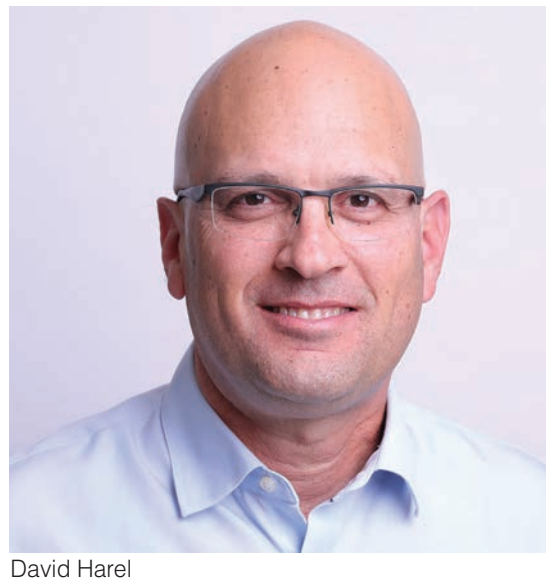
Today, Asio Technologies focuses its activities in two primary areas — systems for soldiers on the battlefield, including tactical battle management systems (BMS), orientation, navigation and observation systems and NavGuard, a mission-critical, GNSS-free optical navigation system for UAS (Unmanned Aerial System) navigation.

Some of the company's leading battlefield products are the Pointer, a target acquisition system that utilizes proprietary GIS (geographic information system) technology; the Lynx family, a hand-held thermal imager designed for individual soldiers, incorporating augmented reality capabilities; the Orion, a lightweight solution for tactical BMS, mission planning, augmented orientation and enhanced awareness, and the Polaris, a high-accuracy GNSS navigation systems for a wide variety of platforms based on GNSS determination and MEMS (micro-electromechanical system) inclination sensors.

Asio Technologies' NavGuard is a groundbreaking system used with unmanned aerial systems (UAS), enabling accurate GNSS-free navigation for UAS platforms, where size, power and weight are critical. Most navigating today is based on satellite systems that provide positioning, navigation and timing services on a global or regional basis. The NavGuard System is used in locations where the GNSS signal is disguised, jammed or unavailable.

CEO Harel explains that the system is based on machine vision which incorporates optical reference technology, processing video feeds from onboard cameras and converting the information into precise coordinates. He adds that both sides in the current Russia-Ukraine conflict have made extensive use of drones and UAS, both for attacking and for gathering information. "We have seen the tremendous effort put in by both sides to confuse and spoof the other side's navigation capabilities" By virtue of its ability to navigate without the use of satellite-based systems, the NavGuard System makes jamming of UAS's GNSS systems irrelevant.

The NavGuard System works in both day and night conditions. It is housed in a completely self-contained housing, incorporating both computing



PR

David Harel

module, database and cameras in a single, compact product. This architecture makes the system resistant to external interference. The NavGuard system provides the same coordinate information that a standard GNSS system offers but without the need to rely on outside data sources or communication.

Harel explains that the uses of systems like NavGuard extend beyond the military to the civilian area and is well-suited in such areas as homeland security and the use of civilian drones for deliveries. "Aviation authorities, such as the Civil Aviation Authority in Israel, require redundancy for critical systems, such as navigation. NavGuard provides this backup," says Harel.

The system is particularly appropriate for drone delivery services, says Harel, because it is small, lightweight and has low power consumption. Therefore, the weight won't affect cargo-hauling capacity for delivery-oriented applications, and the power consumption won't substantially tax flight time or maximum power output. Drones used for shipping in urban areas, he says, are required to have accurate and redundant navigational capabilities, and the NavGuard system provides exactly that. Harel adds that the military market for the NavGuard system is currently the most dominant, but the civil market is rapidly catching up due to the increased growth of drone applications.

Drone manufacturers are purchasing the NavGuard System to integrate into their platforms, and Harel says that in the coming years, it will become an integral part of any UAS around the globe which requires safe autonomous BVLOS (Beyond Visual Line of Site) capabilities.

Asio Technologies develops and designs the hardware and software that is integrated into its devices. The products are assembled in Israel at the company's site in Rosh Ha'ayin. Harel says that while there are competitors in the market, no one else offers the combination of products and platforms that Asio offers, citing the NavGuard System as an example of being ahead of the curve. "Four years ago, we saw the need for this product, and today we have a mature product and satisfied customers."

Harel says that the pandemic, which caused millions to remain in their homes, added momentum to the acceptance and usage of drones as delivery devices. Correspondingly, he adds, the increased use of drones has created more regulations for safer navigation. In the coming years, Harel adds, Asio Systems will continue its refinement and development of its systems – particularly the NavGuard – to ensure that it is utilized on as many platforms as possible. "We are going in the right direction," he says. With the NavGuard System as part of its portfolio, there is little doubt that Asio Technologies will continue on the correct course.

Menta Global

Getting startups from zero to one

By Alan Rosenbaum

Doron Dvir

Sam Itzhakov

"We help startups get from zero to one," says Doron Dvir, founder and CEO of Menta Global, a boutique digital agency specializing in startups. Dvir explains that providing startups with the initial marketing boost to get off the ground is crucial. 'Getting them to the first stage is an important step in order for them to get their next round of financing. Many don't get to stage one because they lack startup marketing experience, and they fail in dealing with the unique challenges that startups have," he says.

"We ourselves came from startups and understand startup growth challenges. I have worked with more than one hundred startups, and many have turned out to be great successes. Menta Global brings a great deal of experience to the table."

Dvir, the former head of user acquisition at Lemonade (LMND), the Israeli insuretech startup, built Lemonade's paid acquisition team and succeeded in scaling their activity from their first dollar to millions per month. When he worked in Lili, a mobile banking company for freelancers, as the company's vice-president of Growth, he led them in raising a round A of $85 million within one year. At Elementor, the fast-growing Israeli website builder, serving as an external growth lead, he scaled their paid activities sixfold within 10 months.

Menta Global team

Photo: Ben Izthaki

Sometimes, a startup may have a very good product that customers do not realize they need. In that case, says Dvir, "You have to educate the customer. That is the challenge for many startups." At Lili, for example, the main challenge was marketing a product – mobile banking for freelancers – that no one was searching for.

Today, marketers need to use a variety of digital capabilities to promote startups effectively, explains Dvir. While in a corporate marketing team, the campaign managers are akin to technicians, in startups, the digital campaign manager must have a high level of understanding, which comes from personally leading a startup. One must have the knowledge of how to measure multi-touch activity, how to set KPI (key performance indicator) that is designated for growth, and how to attribute each touch correctly in the user journey in order to manage the budget wisely and grow effectively.

"Most of the Israeli startups are launching in the US market. "We can provide a great deal of value regarding how to approach the American consumer," says Dvir. "A common mistake that Israeli startups make," he continues, "is that they do test marketing in the Israeli market, and then they replicate that test in the United States. It doesn't work that way. The American consumer has different expectations and positions about product and services, his behavior is different, and his buying cycle is different."

In addition to the US market, Menta Global assists global brands enter the German market and localize their activity based on their knowledge of the behavior of German consumers. One of the key Menta staffers is based in Munich, Germany, and worked with Lemonade in launching their first EU activity in the German market. "This provides the company with a great deal of expertise in approaching the German market, which is different than those in other countries," adds Dvir. Many brands are passionate about the German market but fail to succeed there because of a lack of understanding of local consumer behavior, he says. "You can't just translate your ads and website from English to German and expect the campaigns to work as well as in the US. The German consumer has unique characteristics that one must understand, and companies must properly address their needs and expectations accurately to succeed there."

Dvir notes that most entrepreneurs come from the technology, or the business development sides. "The majority of them do not have a marketing background, and some of them try to be marketers. Problems can arise when a tech person or product manager, who knows the product, tries to do the marketing," he says. Dvir adds that investors are anxious to see positive results quickly and do not have the patience to wait years for a return on their investments. "It's best to bring in experienced marketing experts who can do the job quickly and shorten the learning curve, because there is little margin for error," he says.

Where does Menta Global see itself in the next year or two? Of greater importance, says Dvir, is the position of its clients. "I want our clients to succeed, reach another investment round, or experience an exit. Their success is our success."

ThinkUp:

An Israeli start-up is changing the way we innovate

ThinkUp "harnesses the power of technology and the innovation ecosystem to create a platform that fuels innovation," according to its website.

By Jerusalem Post Staff

ThinkUp

Ohad Shaked

Ohad Shaked is a serial entrepreneur and investor. But whenever he wanted to start a company, he found that it would take him months of frustration to make progress.

"We kept spending time on research - Google, free market research reports - coming up with ideas and then looking for relevant people to talk to," he explained to the Jerusalem Post. "Setting up meetings took weeks, and then getting back relevant, helpful feedback wasn't always easy. We pivoted many times until we landed on a good idea."

But two years ago, Shaked had an epiphany: "Why isn't there a digital platform to help me throughout this process?"

So, he started his own.

He founded ThinkUp with Ron Navon, chief design and director of marketing; Hila Leizerovich, CXO; and Moti Ben Yehuda, CTO.

ThinkUp "harnesses the power of technology and the innovation ecosystem to create a platform that fuels innovation and empowers entrepreneurs," its website states.

In other words, "we identified the fact that even though every start-up has its unique story and path, they all share the same journey," Shaked said. "There are well-known methodologies and best practices and lots of books, videos and lectures on these topics. So, if there are a lot of things that are common to everyone, we thought why not make the process digital, friendlier, more structured and easier and faster to access. That's what we do."

ThinkUp started only two years ago and Shaked said there is no question of demand. Tens of thousands of start-ups in Israel and abroad are looking for this guidance and network.

Specifically, ThinkUp's platform divides the start-up journey into a series of building blocks and uses well-known methodologies and their own experience with entrepreneurship to help guide each entrepreneur.

Users are provided with a series of specific tasks and trigger questions that help them understand and analyze their market and how to get there.

Users are also provided with relevant and reliable data and reports that they would otherwise have to look up on their own.

"It is the platform itself and also a network of entrepreneurs, mentors and experts, and our own start-up success managers," Shaked clarified. "In other words, software, networking and support are all collaborating around the entrepreneurs to make them successful."

ThinkUp

ThinkUp team And Co-founders

Shaked offered the examples of a cement startup that wanted to get into 3D printing. ThinkUp connected the company to domain experts, helped them conduct customer surveys and research and shared a road map to keep them focused on validating their idea for a final solution.

In another case, a gaming startup in its "Ideate" stage, joined our platform a year ago to accelerate its journey, and raised a seed round of $1M.

In the company's vision, the majority of start-ups in the world will start their journey with ThinkUp by 2030. It seems a stretch for a company with only 50 clients, but Shaked and his team are confident.

"We aim to be a household name," said Hagai Goldovsky, ThinkUp's head of content. "When someone needs to search for something - anything - they say, 'I'll Google it.' Google has become a part of our vocabulary. We want to get to the point where every entrepreneur who has an idea turns to ThinkUp.

"We want people from any spot on the globe to know that if they have an idea, an access to WIFI, and a laptop - They can "ThinkUp" and start a venture," he said.

"Within the next few months, ThinkUp will be making a bold move by showcasing its users to the world," said Navon. "While most tech companies take out a floor in a high-rise building and its clients are anonymous, ThinkUp understands that its entrepreneurs and users are both heroes and its face to the world."

ThinkUp will be opening a new office space in the heart of Tel Aviv, with a window that faces the busy street and looks into the company's podcast studio, where the team plans to create original content with entrepreneurs and other ecosystem stakeholders every day. The window will be a platform for showcasing the entrepreneurs, experts and investors who gained value from ThinkUp.

Although the office space is based in Tel Aviv, Shaked said the majority of its user base is international.

"We want to create an infrastructure for the entire world," he said. "And Israel is a good place to start.

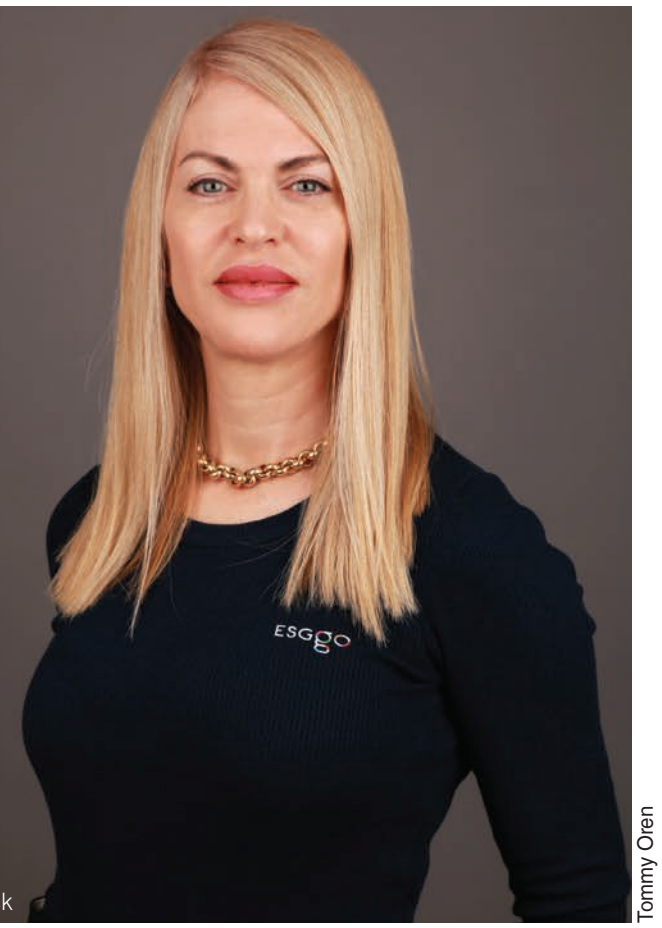
"I think it is symbolic that a company like ours, which is trying to change and accelerate the entire global innovation ecosystem, would come out of the Start-up Nation,"he continued. "It is a big mission and a big vision and a big responsibility, and we believe we can bring the knowledge of the Israeli ecosystem to the world."

Making an impact on the world:

ESG best practices

ESGgo's innovative solution helps companies collect, analyze, and optimize data on their Environmental, Social and Governance status

By Lidar Gravé-Lazi



Orly Glick

Tommy Oren

"Customers and investors today are increasingly minded to how companies operate with regards to Environmental, Social, and Governance (ESG) best practices", Orly Glick, CEO at ESGgo recently told The Jerusalem Post.

ESGgo is an American Israeli company providing a one-stop-shop data software that supports companies with tools to help collect, analyze, and optimize their ESG status.

"The discussion around how companies should be doing better for the environment and for society started many years ago but what is driving it today is the culture of the consumer," Glick said. "Generations Y, Z and Alpha care about the environment and they care about diversity, and they are going to choose which companies to buy from, to work for and to do business with."

In fact, Glick said that a recent report released by McKinsey and Company found that about two thirds of consumers will stop buying a brand that doesn't treat the environment or society well. Additionally, the Consumer Index research by Earnst and Young found that 68% of global consumers expect companies to solve sustainability issues.

"It is this generation of the consumer and employees that dictates what enterprises are going to do," she said. "If companies want to attract the right talent, and they comprise about 65% of the workforce, they have to think about ESG."

Moreover, Glick added that today the emphasis on ESG is increasingly growing as institutional investors and asset managers are also demanding that the companies they hold commit to ESG.

"Many of the enterprises we work with approach us initially because of regulation or because their board and their investors are asking them to start reporting and integrating ESG into their business practices" she said. "But there is a lot of confusion around ESG reporting and around regulation."

Last year the European Union adopted the Corporate Sustainability Reporting Directive (CSRD), requiring companies to disclose information on the way they operate and manage social and environmental challenges. The United States Security and Exchange Commission (SEC) has also recently proposed a similar measure.

"The reporting is challenging for companies. There are hundreds of data points under each of the letters (ESG), and there are several reporting standards to measure by, so this is a very complicated and difficult process," Glick said.

ESG requires collecting the data from many various sources across the organization and from different departments such as HR, IR, IT, Legal

The ESG Operating System

PR

etc. Organizations are now facing a challenge to understand the complexity of how to collect the data and from where.

"Take the 'E' for example, there are hundreds of questions and data points surrounding this letter even beyond carbon accounting and that is the problem - how do I choose what data is important for my company? There is no one standard. A software company will not produce the same carbon footprint as energy or production companies," she said.

As such, she explained, ESGgo provides a software that helps companies determine what data to collect for each letter, how to collect that data, benchmark against competition and then optimize the company's ESG score using AI.

Glick added that there is currently a discussion and even criticism around the ESG score and the inconsistent translation of the ESG data by rating/scoring firms and mentioned that this is a fair debate.

"These should be two separate discussions. The one is related to the data challenge and how it is analyzed for the purpose of ranking by rating firms, but the other is the mere necessity in real implementation of ESG practices in order to combine doing good with generating business impact," she said. "At ESGgo, we help with both."

"We are a data company, we handle complex data problems", she said. According to Glick, today every industry is now affected by ESG, from software companies to CPG to retail.

Not only is the company one of the first in its field, but Glick and her team are determined to instill ESG best practices as their core vision.

"I am proud to say that our team comprises 50% women including in technology – both in our data team and in our engineering team," she said. We are very interested in diversity and wellbeing including flexible hours and being able to work from home. This is something that is very close to my heart as a mom of 3 kids juggling business and parenthood."

The company's team, founded by experienced business professionals and technology experts from Facebook, Google and McKinsey as well as teams from the top Israeli army technology units all share the passion for data and the goal of making a positive impact on the world.

"One of the reasons I left as a partner at one of the largest funds in Israel is because there are not enough women CEOs out there and this is a part of the ESG problem," she said. "I want to take upon myself to show to young women that you can be CEOs and take your destiny into your own hands, and to be different, and it is a part of a movement."

Israeli company farms fish in the heart of the desert

The world's eyes are on Aquatech Fisheries, a company that has managed to raise thousands of tons of fish in the Negev without harming the environment.

By Maayan Hoffman

Because deserts are extremely dry, it is hard for humans, animals or plants to live in them. So how is an Israeli fishery running an ecological fish farm in the Negev?

Aquatech Fisheries is living proof that fish can learn to swim in the sand, so to speak. According to the company's CEO Mordi Laloush, "If we can raise fish in the heart of the desert, everywhere else should be easy."

The eyes of other companies are starting to look toward Aquatech Fisheries, and Laloush said Aquatech is interested in transporting its success to other places – in Israel and around the world.

What started as a "Zionist idea," said Laloush, could change the way fish are raised everywhere.

Aquatech Fisheries, founded in 2012, runs the country's largest-scale ecological in-land fishery, raising Barramundi fish using what is known as Recirculating Aquaculture Systems (RAS) technology. The system allows for growing healthy fish at a low cost even in areas removed from major water sources. It's ecologically friendly and chemical and antibiotic free, Laloush explained, and the fish (and therefore the humans who eat them) are healthier too.

"This is a technology that was originally developed to treat water. We learned how to raise fish using it," Laloush explained, emphasizing that one of the things that makes it unique is that it addresses a growing problem: fish are disappearing from the sea.

The ability to increase fish production from the sea has been maximized, Laloush told The Jerusalem Post. Moreover, many sea-, pond- and ocean-based fish have unhealthy and sometimes toxic elements. At the same time, the majority of fish farms are harming the environment, dumping copious quantities of polluted water into the earth, lakes and oceans.

In Israel, there are added challenges, Laloush said: There are not even enough shores where fish can be raised, nor water nor land, which are precious and very scarce resources.

In comes RAS

"RAS is a technology where water is recycled and reused after mechanical and biological filtration and removal of suspended matter and metabolites," according to a definition provided by the National Fisheries Development Board in India, where the technology is also beginning to be used. "This method is used for high-density culture of various species of fish, utilizing minimum land area and water."

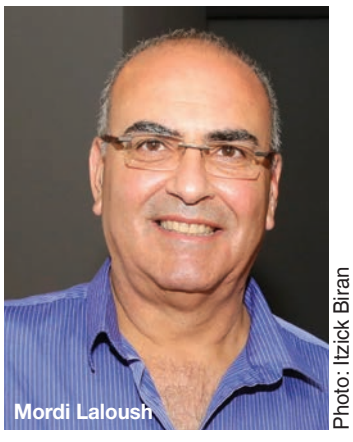
Laloush said that traditionally fish farmers build open pools or ponds, which requires them to discharge and replace big amounts of water and to infuse the fish with antibiotics to ensure their health in such an environment. The pool's water is dumped onto the environment during water changes, infusing the earth with chemicals.

The RAS system consumes almost no water. Most of the water is treated and recycled, however. The small quantities of discharged water rather than simply being dumped, it is routed to a nearby olive grove to irrigate its fruit trees.

"Our use of water on the ecological aquaculture farm is ten times less than the use of water in conventional ponds," Laloush stressed.

Aquatech Fisheries ecological fish farm

Photo: PR



Mordi Laloush

Photo: Itzick Biran

"Land is also a valuable resource in Israel and here, too, we have a huge advantage," Laloush said. "Our area is 10 times smaller than conventional ponds while the amount of fish we produce is the same."

Aquatech was a global pioneer in using RAS technology. It is also at the forefront of using the system to farm Barramundi, a fish that has recently become popular in Israel.

Another benefit of the RAS technology is that you can raise the fish near the marketplace and deliver them fresh, instead of flying them in from the other side of the world.

However, getting started was not without challenges. First, he said, the company had to choose the right fish to ensure maximum effectiveness of the system. Then, it had to adapt the technology for its uses. But the hardest part was finding the right staff. He said fish farmers in a RAS company have to know biology, water chemistry and technological systems.

However, Laloush believes that Aquatech Fisheries will succeed.

"There are similar farms, but none of them reach the level of almost zero use of water while raising thousands of tons of fish," he said. "This trend is taking shape in the world, but we are almost the only ones who have so far managed to crack it."

He said Aquatech's success has aroused widespread interest; now other companies see that it is possible to raise fish anywhere. The company is ready to find relevant partners and set up more ecological fish farms around the world.

"We have reached a point in time where we have the knowledge and are willing to pass it on," he told the Post. "We are seeking partnerships and leading the process of choosing the right design and technology, construction and system integration, training staff and supporting the growth."

He said that already several companies have turned to Aquatech Fisheries in the last year, from countries as close as the Gulf region and as far as the Far East and Russia.

"What happened in the farming industry in the last 30 or 40 years is now happening in aquaculture," Laloush said. Fish farmers are going to be forced to transition from conventional farming to industrial ecological farming. For a country like Israel, this transition is already essential.

"We are a country without land and water," Laloush said. "This solution is key to ensuring Israel's food security."

www.aquatech-fisheries.com

Smart access technology platforms

In the near future, a physical key will be a thing of the past and every doorway will be equipped with a smart lock, operated remotely via cloud-based communication.

Naftali Sadan

Photo: Sam Itzhakov

The idea behind Smart Door Systems (SDS) began as most great ideas do - with a need. Zeev Fonea, co-founder and VP Engineering of SDS, found that his father, at an advanced age, had difficulty opening his door with a key. So he set out to develop a solution - a small engine that would open the door automatically by pressing a button.

Now, over a decade later, the technology for smart doors both at SDS and throughout the world has significantly improved, and thousands of doors in Israel are now locked by some form of digital means.

Co-Founder and CEO of SDS Naftali Sadan, a mathematician by training and a salesman by profession, recognized the widespread need for smart doors for private customers and government organizations, even before the era of cloud technology.

"I joined the development of a product that was designed to solve a particular problem for an older person and developed the idea for door control in a smarter way. We realized we could make the door automatic and digital, by remote control via computers," Sadan recently told The Jerusalem Post.

SDS has developed a unique and innovative solution that enables locking through cloud-based communication providing customers flexibility and scalability to expand their access control infrastructure to any type of application.

"Most companies today offer smart door solutions based on Bluetooth mechanisms, which allow control within a range of two to three meters and only in one direction, door commands," he said. "But this leaves a whole world of remote-control solutions out of the field."

As such, the company understood that the major innovation is in the door's ability to communicate both ways - not just through opening or locking commands, but that the door will provide information about when it opens, real-time locking status, malfunctions and other information.

"This is a significant advantage for our customers in terms of organizational, business and economic point of view. Our diverse market includes private and commercial customers, each enjoying a different aspect of the technology," he said.

SDS also has the ability to handle full locking of all types of doors and locks and is designed to be retrofitted on existing doors. The system is essentially installed over the cylinder, allowing it to open and close, as well as give permission to open during certain hours all from remote control anywhere in the world.

As such, SDS was one of the pioneers in Israel and in the world in developing such a locking device integrated with entrance control - turning any door and lock into a smart door. Commercial and logistical centers, hotels, as well as office buildings and private homes are the main markets for this unique technology.

SAS8200 cloud based Smart Acess Solution

One prime example is the booming AIRBNB market, in which people sublet their apartments to customers around the world.

"Integrating this solution for the door in combination with cloud services creates a kind of hotel without reception. The host can confirm entry, knowing when the guest has arrived or departed, without the need to make physical or even phone contact. In fact, the host has full control over the activity of the door," he said.

SDS's System enables each door to be online 24/7, by developing and delivering the most advanced technology the industry has known providing property owners and managers worldwide with new ways to secure guests, manage staff, and protect assets.

More recently, the company has entered the world of traditional hospitality and hotels, offering smart organizational solutions.

"When the door is the center of knowledge, guest service is improved through an app and smart means of identification," he said. "The quality of management & guest experience improves thanks to real-time control of each door with a variety of new service options."

Sadan said this offers huge savings in manpower and receptionists, all while maintaining the ability to control and monitor maintenance personnel, such as room cleaners for example, as well as rapid identification of unusual events such as the illegal use of rooms.

Another key market, Sadan said, is commercial buildings and in particular companies engaged in the rental of workspaces.

"To date, in order to allow smart entry and surveillance in commercial buildings, companies were required to set up dedicated communication racks, electrical outlets and perform many additional infrastructures worth millions of shekels. All this in order to put a coded lock that would allow keyless entry into the building," he explained.

Instead, Sadan said, "IoT technology-based access control" like those of SDS, "make it possible to implement a product that is 8cm in size, with almost no infrastructure and wiring, and provides a uniform solution with a shorter implementation time of tens of percent and is significantly cheaper in terms of maintenance than today."

According to Sadan the needs arising from these three key markets paint a picture of the future of smart doors in our personal lives. As such, he said he believes the near future will see an expansion of such technology that will see smart doors as the new standard in every home.

"Once a contractor had to stress that he was offering a steel door, because the standard was wooden doors. Today it is obvious, and in the next four to five years this is what will happen in the world of smart doors," he said. "People understand the basic need for remote control, certainly in the age of smart homes and automation of almost every aspect of our lives."

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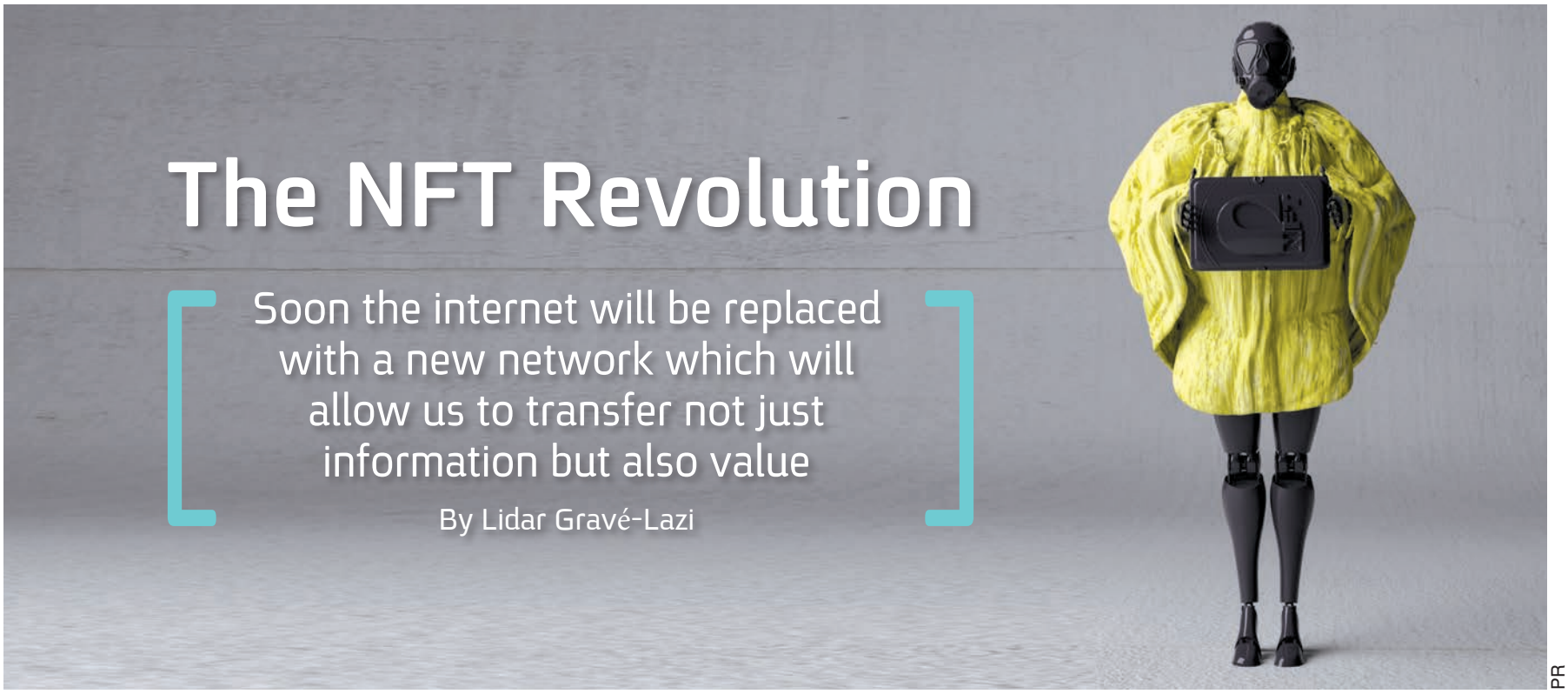
The NFT Revolution

Soon the internet will be replaced with a new network which will allow us to transfer not just information but also value

By Lidar Gravé-Lazi



PR

In the coming decade or two most of the world's valuable assets will be traded through blockchain technology and NFTs, attorney Maayan Bachar, founder and owner of Chat des Rues, recently told The Jerusalem Post.

NFTs, or non-fungible tokens, are a technological means based on blockchain technology that allow digital representation of physical or digital assets.

This relatively new technology provides the ability to trace the ownership of a property and verify its authenticity, allowing for greater transparency. In turn, the property can be traded relatively easily and can be attached to a smart contract giving the holder various rights.

"I believe that in the economic world of tomorrow, which is already emerging before our eyes today, the internet we are familiar with will be replaced with a new network which will allow us to transfer not just information but also 'value'," Bachar said.

This past year, Bachar, a real estate and investment attorney, opened a first-of-its-kind CNFT Incubator in Israel - an initiative which develops collections of unique NFTs in the field of fashion and digital art as well as innovative products that are expected to enable new uses for blockchain technology and the use of smart contracts.

"For several years I have been involved in the field of crypto and digital currencies and in the development of uses of blockchain technology for the real estate industry," she said. "Through NFT I found a way to combine my great love of art and fashion with the pursuit of investing and finance."

During the height of the coronavirus pandemic, Bachar began working on her first NFT collection in the field of fashion and art.

NFTs burst into the public scene in 2021 and since then have drawn the interest of fashion brands, celebrities, gaming companies, and major retailers, which all invested in this emerging field. Reports indicate that the NFT market is worth some $35 billion in 2022 and is expected to grow to roughly $147 billion by 2026.

This massive global interest led Bachar to develop her brand, CHAT DES RUES, Street Cats in French, the first digital luxury house for fashion and art.

The brand's collections include limited edition luxury series of physically handcrafted art, jewelry and fashion items attached to digital assets (NFTs).

"Our brand aims to blur the boundaries between imagination and reality, between the existing and the fantasy," she said. "Our art items are inspired by pop culture and street art and are manufactured from quality materials in very complex work processes using advanced technologies."

A unique CNFT Incubator, which includes a studio for digital art together with development and technology personnel aims to provide a professional and technological envelope for all projects in the NFT field, including the development of new and innovative uses.

"This industry unfortunately does not include enough women and I hope to pave the way for more women to engage in the crypto field in general and in the NFT field in particular," she said.

Eytan Tal

Maayan Bachar

The brand also has digital membership cards (NFTs), which provide their holders access to the brand's content and events as well as the purchase of unique art and fashion. The gallery's members' club also hosts business meetings, conferences, and gala evenings for entrepreneurs, creators, investors and collectors, providing its members with an exclusive global social network.

This also includes the establishment of the "Round Tables" forum, which promotes regulation in the fields of crypto and NFTs in Israel and includes representatives from the private and public sectors.

"Today regulation in Israel lags far behind its technological development, especially compared to other countries in the world which have begun to regulate the crypto field and specifically the NFT field," she said. "Unfortunately, today many Israeli entrepreneurs and artists are moving their activities to other countries whose regulation allows for more convenient activities."

Despite this, Bachar said that the relevant authorities in Israel, including the Finance Ministry, Securities Authority, the Anti-Money Laundering Authority, the Tax Authority and the Bank of Israel, are all currently working to promote regulation in Israel.

"Today there are very few people in Israel who are experts in the field, and those that are usually move their activities abroad. I hope that the regulation will indeed cause the Israeli technological minds to stay here in the country and to position Israel as a power in this area as well," she said.

As such, looking forward Bachar is very optimistic for the future of digital currencies and NFTs.

"I estimate that the regulation will bring greater stability to the industry and enable the development of new uses for NFT and blockchain technology," she said. "The market today is in the process of an evolution of a new economy, which is developing before our eyes, so the unpredictability is very high. But it seems to me that the future of this industry is very promising."

She added: "In fact, I believe that NFT is a revolution in the sense that it is likely to significantly change the way we do business, acquire valuables and even change the way we spend and hold social gatherings."

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