

Israel - Australia Newsletter

July 2018

Dear Friends,

What is not news to this audience is that the the Israel tech and innovation industry is booming. However, besides the obvious and well known sectors like Cyber and the Fintech, IT and AI, the energy and water, the medical and the Agtech... other industries are also jumping on the digital era high speed wagon.

The impact of this change is reflected in the adage 'everything which can go digital will get digital - it is just a matter of time and the right entrepreneurs to take them there'.

So fashion, advertising, construction and cosmetics, all are fields that may have been perceived to little to do with advanced technologies are joining this trend. These sectors are re-inventing themselves to better connect with the client and to move their sectors to different new heights, and those who wouldn't keep up are likely to be left behind.

In this addition of our monthly newsletter we tried to focus on some new sectors that don't frequently get our coverage or attention, and share some of the developments and trends coming out from Israel.

We particularly wanted to refer to a new phenomena known as the 4th Industrial revolution 'Industry 4.0' also referred to as Smart Manufacturing where Israeli technology companies and entrepreneurs are paving the way to a more efficient, robotic intensive, smart, fast and most certainly advanced productions and manufacturing.

As always, we hope you'll enjoy reading our monthly publication and wishing you a great month ahead.

Sincerely,

Shai Zarivatch and The Team

The Israel Trade Commission
Sydney, Australia

In this edition:
[Israel Investing in quantum technologies | How Israel Became an Advanced Manufacturing Powerhouse | Israel Glows with World-Leading Aesthetic Technologies | A Spotlight on Israeli Advertising Tech | Israel Struts Its Stuff in Fashion Technology | Upcoming Events | Interesting news from Israel | Exciting new business opportunities](#)

Israel investing in quantum technologies

Over the past few years, the hype around quantum technologies has increased, both in **Australia** and around the world. Israel is no exception, with the Prime Minister Benjamin Netanyahu having announced in a major investment into quantum technologies for Israel a few weeks ago.

What is quantum technologies and quantum computing?

Quantum technologies refer to the applied use of quantum physics. These quantum particles describe the natural phenomena of subatomic particles, which behave in incredibly strange ways which even baffled Einstein. One fundamental way this is observed is called the state of "superposition", where the particle can exist simultaneously in multiple states. Note that there are already many existing technologies, used by the mainstream market that is based on quantum mechanics.

As **Dr. Michal Vakrat Wolkin**, explains "things like lasers (for industrial, medical, security, and fiber optic communication), semiconductor devices (your phone, solar cells, light emitting diodes, and memory chips), imaging technologies (think CT scans), sensors (pressure and humidity, biomedical and drug discovery, environmental etc), batteries and fuel cells (electric vehicle battery, H2 and other types of fuel cells)" already are important examples of what we use today based on quantum mechanics.

The next wave of quantum technologies generating excitement is quantum computing. Traditional computing uses classical bits, represented by a state of either 1 and 0. Quantum computing is represented by qubits, which can be in a state of both 1 and 0 at the same time.

Where are we at with business implications?

During an AICC business briefing on the potential for Quantum computing on Australian businesses, panelists likened where we are today with quantum computing with how traditional computing was in the 1950s and 1960s. The physical processing equipment is still being developed... with a quantum computer, when built, likely to fill the size of full rooms initially. Much like how the full scale of use in general computing technologies today would be impossible for someone from the 50s or 60s to predict, it is similarly impossible to predict scale of killer applications technology.

Nearer term applications, however, include optimisation problems that current supercomputers may struggle with. The implications for AI look promising, whilst those in cyber security look both troubling and promising. This is because current ways of encrypting data (factoring large prime numbers) is something that traditional computers have difficulty with, but not quantum computers. So conversely, using quantum to protect sensitive communications and data is also looking like a promising application.

When the Israeli government awarded the Hebrew University a tender to build a national communication system this time last year, this line of thinking was likely what prompted the investment. That investment was **7.5 million NIS**. According to "Globes", the government plans to initially allocate a sum of NIS 300 million for the development of quantum computing in Israel, in the near future. Three of Israel leading academic institutions have established their own quantum computing centers from private donations.

Israel, much like the rest of the world, is only at the beginning stages of the journey of seeing how far this technology will take us.

[\[Back to top\]](#)

How Israel Became an Advanced Manufacturing Powerhouse



To many minds, the thought of manufacturing conjures up images of a world in which heavy industry dominated national economies, before the latest technological revolution disrupted everything. Since the Industrial Revolution, however, manufacturing and technology have gone hand in hand. This holds particularly true in advanced manufacturing - the leveraging of cutting-edge technologies, tools, and practices to build high-tech and even low-tech products - making companies more efficient and boosting productivity.

Israel's economic and manufacturing base is too small to compete with the likes of China and India when it comes to mass production. Yet in recent years, Israel has been an engine of advanced manufacturing's global growth, propelled by the Start-Up Nation's excellence in high-tech and R&D. The country has distinguished itself across high-tech sectors, including big data and cloud, sensor systems and powerful advanced processors; widespread additive manufacturing technologies; industrial robots, with rapidly developing abilities and decreasing costs; and information technology (IT), enabling new models of collaboration.

Israel's world-renowned prowess in R&D is **closely linked** to its success across advanced manufacturing sectors. From its robust defense industry to the R&D centers established by companies like HP, Applied Materials, Intel, and Teva Pharmaceutical (NYSE: TEVA), Israel's vibrant research and innovation ecosystem has powered advanced manufacturing in the high-tech space. Israel's world-leading Internet Industry of Things (IIoT) sector **serves as a prime example**, enabling the next generation of industrial innovation. But it's not only high-tech that benefits: Israel has pioneered the integration of sophisticated technology for manufacturing in low-tech industries, including through an Israel Innovation Authority program that subsidizes low-tech enterprises, from ceramics to textiles to plastics, implementing innovative processes.

How is Israel pushing advanced manufacturing forward for traditional, low-tech manufacturers? Consider the cases of these companies:

- Acquired by Avery Dennison in 2017, **Hanita Coatings** has developed advanced products for the label, print, appliance, and glass security industries for more than 30 years using relatively low-tech machinery. In recent years, the company integrated advanced technology and patented to clearcoat, having developed solutions including solar control window films for reducing the energy outlay on cooling, as well as enhancements and protections for thermal insulation and energy efficient appliances.
- Founded in 1991, **Cabran Investment Casting Solutions** is based on Kibbutz Cabri in the Western Galilee. Using sophisticated tech-driven processes designed to achieve maximal efficiency and quality, Cabran manufactures castings for leading Israeli and international aerospace companies, including pumps and wing tips for Honeywell International.
- Publicly traded on the Tel Aviv Stock Exchange, **Raval** (TASE: RVL) develops advanced, low-cost flow control solutions for the global automotive industry. Its core activity is the advanced production of coating systems, with integrated solutions for gasoline, diesel, and biofuel systems. The systems are designed to maximize performance while minimizing costs and carbon emissions.

With an eye toward incentivizing innovation and startup creation throughout the country, the Ministry of Economy and Industry recently **announced** an initiative providing government-funded grants of up to 20-30 percent and a 7.5 percent tax credit for both new and established companies who set up advanced manufacturing facilities in fields like renewable energy, nanotechnology, biotechnology, and IoT. The incentive program targets development in Israel's geographic and economic periphery.

Whether it's emerging industries like IIoT, the manufacture of construction materials or designing and producing the newest semiconductors, Israel has consistently shown a commitment to remaining on the leading edge of advanced manufacturing solutions, powering the Israeli economy to new heights - with benefits for the entire world.

[\[Back to top\]](#)

Israel Glows with World-Leading Aesthetic Technologies



From the lush rolling hills of northern Israel, to the azure beaches along the Mediterranean, to the sights and sounds of Jerusalem's Old City, to the vast expanse of the Negev, beauty abounds in Israel.

The country also brings beauty to millions of consumers worldwide, thanks to its vibrant aesthetics technology sector. Leveraging Israel's robust R&D strengths and entrepreneurial spirit, the sector has developed world-leading solutions for combating aging, treating common skin conditions like acne, trimming belly fat, and more.

For a look at some of the most innovative work in Israeli aesthetics technology, don't miss the Yokneam hi-tech park, located in the lower Galilee. Hailed once in **Time Magazine** as containing "perhaps the world's largest concentration of aesthetic technology companies," the park is home to an **estimated 150 companies** performing **\$1.5 billion**, and is the source of \$5-6 billion in annual technology exports.

Among the aesthetics technology companies to set up shop in the Startup Village are the following:

- **Ion Med** operates in the burgeoning plasma medicine space, utilizing cold atmospheric plasma for a variety of clinical applications. The company's Bioweld1 device is well-suited for wound and surgical incision closure, skin graft fixation, and acne treatment.
- **Lumensis** is an industry pioneer in minimally-invasive clinical solutions, offering a range of innovative, energy-based technologies, including laser, intense pulsed light (IPL), and radio frequency (RF). Lumensis technology is used to resurface skin, treat burns and scars, eradicate the appearance of leg veins, treat lesions, and remove tattoos.
- **Syneron Candela's** energy-based technologies have a diverse array of applications, including body contouring, cellulite removal, acne treatment, lesion treatment, hair removal, wrinkle reduction, and women's intimate health.

Another leading company in the sector is **Med-Op Aesthetic Technologies**, which has developed two platforms for clinical application: STAR LIFT, a multi-treatment platform for collagen renewal, skin tightening, and better lymphatic drainage; and TWINLIGHT, which combines radio frequency and reflecting LED technology to renew tissue and muscle cells and build up collagen.

Such companies are well-positioned to capitalize on the rapid growth of the global aesthetics industry. Powered by mounting demand in emerging markets like China and India and sustained growth in industrialized countries, the global medical aesthetic market is **projected** to grow at a 12 percent Compound Annual Growth Rate (CAGR) from 2017 to 2023, reaching \$19.4 billion.

For Israel, a thriving innovation ecosystem has proven to be the country's proverbial fountain of youth - bringing vitality and ingenuity to the country's economy and delivering technologies that improve lives for millions worldwide.

[\[Back to top\]](#)

A spotlight on Israeli advertising tech



Advertising has come a long way since the days of Don Draper - not least thanks to the industry's technological infusion being combined with the world's best creative minds. Recent years have given rise to a proliferation of new tools for targeting audiences, safeguarding brands' reputations, purchasing digital advertising, and monetizing new formats like online video and podcasts.

With an **estimated 600** active AdTech and marketing tech startups, Israel is a driving force behind many of the biggest innovators in the sector. A few of these companies were showcased in June at Cannes Lions 2018, the premier global gathering for professionals in the advertising and communications industries. Eight Israeli companies participated in the country's hub, which was organized in cooperation with the Israel Export Institute. Participating companies included the following:

- **Konnekt** provides brands with customer-driven insights to enable a better understanding of consumer preferences, their assessment of competitors, and their sentiment toward the brand. Clients invite their customers to participate in the Konnekt Consumer Group, and customer data is compiled onto an AI-driven platform that generates actionable insights for helping brands nurture customer relationships and reach target audiences.
- **Wochi** provides businesses a video creation platform for producing and distributing across social and digital platforms. With pre-negotiated and rights-cleared assets from the AP, Reuters, Getty, and other sources, Wochi provides brands with a suite of tools for quickly creating quality content. The company has notched several top awards, including Digiday's Best Video Technology Innovation and the Gutenberg Prize for disruptive technology in journalism.
- **Nanoscent** provides brands with a unique new way of engaging consumers: through the power of smell. Utilizing scent recognition technology, the company is developing a solution enabling customers to use their phones to detect the scent profile of products. The company has formed partnerships with Samsung and other Fortune 500 companies.

Amid continued Israeli innovation in AdTech and marketing tech, recent years have witnessed growing **M&A activity**, and the needs of the marketplace are slated to power further advances in the sector. From high-profile controversies that have prompted companies to reevaluate their **brand safety strategies** to the emergence of formats like AR and VR, advertisers and marketers in targeted markets including the US, the UK, and China. **Within Israel**, **Fash&Tech** hosts a Bootcamp startup contest and **meetups** where attendees can network with retailers, investors, fashion industry leaders, and tech entrepreneurs.

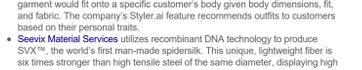
Here's a look at just a few of the startups operating in Israel's growing fashion tech sector:

- If you want to shop for running shoes online but crave the in-store experience of trying them on for comfort and fit, **FitFluffy** has you covered. Users scan their feet on their own devices, and the company then develops a "virtual fit," matching customers with their ideal shoes from leading retailers.
- **Zeekl** brings the dressing room to the e-commerce experience. The company's patent-pending technology allows users to "try on" clothing in 3-D, utilizing AI and sophisticated image processing technologies to show how each garment would fit onto a specific customer's body given body dimensions, fit, and fabric. The company's Styler.ai feature recommends outfits to customers based on their personal traits.
- **Sevix Material Services** utilizes recombinant DNA technology to produce **SVX™**, the world's first man-made spidersilk. This unique, lightweight fiber is six times stronger than high tensile steel of the same diameter, displaying high elasticity and durability. Applications include enhanced composites for body armor and for sports shoes with dramatically enhanced shock resistance and durability.
- Combining health tech and fashion tech, **Medic Shoes** produces shoes that operate on battery-powered, remote-controlled, variable-strength foot massage systems to generate maximal blood circulation in the feet - a boon to consumers with a history of poor peripheral circulation.
- **LikeGlove** has developed a "smart garment" enabling users to measure their shapes. Users put on LikeAGlove's smart shorts, which measure their shapes and link via Bluetooth. The company's app allows users to track their fitness progress over time and also matches users' measurements against jeans, with a catalog featuring selections from top brands like Levi's, Old Navy, Gap, American Eagle, Ann Taylor, and more.

The diversity of the fashion tech scene in Israel attests to the wide range of capabilities and innovative technologies being developed in the country. Harnessing its immense technological prowess and the creativity of its human capital, Israel promises to continue making a splash on the fashion tech runway for years to come.

[\[Back to top\]](#)

Israel Struts Its Stuff in Fashion Technology



The phrase "Israeli fashion" may conjure up images of boutique shops on Tel Aviv's trendy Sheinkin Street, the unique designs featured at popular outdoor markets, or the work of industry leaders like Galia Lahav, whose stunning couture dresses are a **Byeonce favorite**. Given that this is the Startup Nation, Israel's contributions to the fashion world also extend to technology, where Israeli ingenuity is reshaping how we buy, sell, and wear the latest designs.

Whether it's 3D e-commerce experiences, wearable technologies, or 3D printed clothing, Israel is pioneering numerous innovations in fashion tech, with an emphasis on leveraging technology to improve the consumer experience.

A key driver of Israel's fashion tech success: The ecosystem's commitment to supporting innovators and entrepreneurs in the field. The Fash&Tech incubator is a **case in point**. Founded in 2013, it has supported upwards of **150 startups** from seed stage to growth funding, facilitating connections between Israeli fashion tech entrepreneurs and players in targeted markets including the US, the UK, and China. **Within Israel**, **Fash&Tech** hosts a Bootcamp startup contest and **meetups** where attendees can network with retailers, investors, fashion industry leaders, and tech entrepreneurs.

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[\[Back to top\]](#)

Upcoming Events

IBC2018

13-18 September 2018 - Amsterdam
The IBC Expo explores innovation and developments in creating, managing and delivering broadcasting media and entertainment. With over 70,000 in attendance, the newest and best technology in broadcasting, mobile TV, IPTV, digital signage and R&D will be on display.

Israel HLS & Cyber 2018

12-15 November 2018 - Tel Aviv
The 5th International HLS & CYBER Conference is a biennial event that combines a comprehensive exhibition of the most recent technological advancements and the latest developments with insights from some of the leading international experts in the field.

MEDICA 2018

12-15 November 2018 - Düsseldorf
The global leading trade fair for medicine, bringing together medical equipment, technology, information services, consumables, and diagnostics technology. With over 5100 exhibitors from around the world.