



JERUSALEM OF SILICON

The Holy City is on the verge of breaking into the world's top 20 start-up ecosystems

*Jerusalem of silicon,
and of brains, and of bytes
Behold I am a hi-tech start-up
'midst all your ancient sites*

THERE IS no chance those lyrics will ever rival the immortal words of Naomi Shemer's "Jerusalem of Gold," which 50 years ago became almost a national anthem after the Six Day War. But they are now reality.

Jerusalem has improbably become one of the world's hottest hi-tech start-up ecosystems amid bitter religious and political disputes; a 2016 UNESCO resolution ignoring Jewish ties to the Temple Mount; and a large ultra-Orthodox population whose children avoid studying math. Jerusalem of Silicon, once almost an oxymoron, is real.

A new report, Global Startup Ecosystem Report 2017, by Startup Genome, a start-up itself that helps communities build start-up ecosystems, provides useful data.

"We work with city leaders and members to capture and assess the efficacy of policies and practices, and help them learn from each other about what does and doesn't work," says Startup Genome.

It reports that Jerusalem was a "close runner-up" for the world's top 20 start-up ecosystems, ranking high in both talent and market reach. The report notes – no surprise here – that Tel Aviv has been a top-performing start-up ecosystem for several years, and now ranks 6th in the world, after Silicon Valley, New York, London, Beijing and Boston.

Startup Genome recounts that "Jerusalem

is a rising star on the global start-up scene, with approximately 500-700 active tech start-ups." Daniel K. Eisenbud, writing in The Jerusalem Post, notes that the number of hi-tech Jerusalem start-ups has tripled since 2012, a 32% annual growth rate.

Last year, TIME magazine and Entrepreneur magazine chose Jerusalem as one of the five emerging hi-tech hubs from around the world.

The article, by Zach Cutler, claimed that "Jerusalem has experienced a reawakening and offers an extraordinary blend of history and modernity not found elsewhere on the globe. The city has become a flourishing center for biomed, cleantech, Internet/mobile start-ups, accelerators, investors and supporting service providers. There is even a group called Made in Jerusalem, which connects and provides resources for the local start-up ecosystem.... The ancient city today is not just rich in history, but is full of promise and creativity for the future."

WHAT IS it that has made Jerusalem a rising global center for start-ups?

Jon Medved, CEO of OurCrowd, which he says is the world's largest equity crowdfunding platform for early stage start-ups, notes, "Jerusalem has three unique characteristics: Community, Creativity and Diversity. Its population consists of Arabs and Jews, secular and ultra-Orthodox, and a large amount of immigrants."

Medved claims 100 new start-ups a year form in Jerusalem. "There are more stu-

dents in Jerusalem," he claimed, "than in any other city in Israel."

Uri Adoni, a partner at venture capital firm Jerusalem Venture Partners, says, "The foundation of Jerusalem's tech ecosystem rests on great collaboration between entrepreneurs, investors, academic institutions and multinational corporations." Many Jerusalem entrepreneurs are Hebrew University graduates.

Startup Genome says, "Jerusalem start-ups have the seventh highest rate of immigrant founders in the world at 34%, interestingly more than double the percentage of Tel Aviv (16%). It also notes that Jerusalem





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start-ups “display a relatively low percentage of founders with a technical background, at 74%” (in contrast, 93% for Tel Aviv and 87% for Silicon Valley).

Ben Wiener, who manages Jumpspeed Ventures, observes that “because so many of our founders come from the overseas markets, it’s no wonder that Jerusalem start-ups go global early in their life cycles.”

Jerusalem of Silicon is not solely concentrated in the Jewish west Jerusalem section. Arab east Jerusalem, too, has start-ups.

According to JEST (Jerusalem Entrepreneurs for Society and Technology), which offers a home for East Jerusalem’s start-

up community, there is a surge of start-up activity in East Jerusalem, with residents choosing to form their companies there rather than in Ramallah.

The rise of Jerusalem of Silicon has been meteoric.

Helen Wexler is director of Jnext, which fosters entrepreneurship as part of the Jerusalem Development Authority. She says, “Jerusalem has been a religious and cultural capital for thousands of years; however, in the last five years the city has also emerged as a leading technology hub. Jerusalem hosts world-leading institutions in the sciences and design disciplines, and, together

with government support and a grass-roots movement, the city has become an entrepreneurship enclave.”

It is no coincidence that Jerusalem Mayor Nir Barkat is himself a successful entrepreneur. Barkat bootstrapped (i.e. self-funded) an anti-virus software company, BRM, in 1988, with his brother Eli. An exit made him a multi-millionaire and venture capital investor before he entered politics. He is a strong backer of Jerusalem of Silicon.

Jerusalem’s start-up ecosystem leaped to prominence in March when Mobileye, a 1999 start-up located in Jerusalem’s Har Hotzvim hi-tech park, was acquired by Intel for

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\$15 billion. (See “Let’s say hello,” April 17.)

Mobileye founder Amnon Shashua lit a torch at the Independence Day ceremonies. He is both chairman of Mobileye and a computer science professor at Hebrew University, as well as co-founder of Orcam, another Jerusalem start-up.

THE WEBSITE Jerusalem.startups-list.com features a remarkable array of start-ups, including Glide, whose back-and-forth video chat was recently integrated with Apple watch; Nirsham, which sells companies images of their drivers violating road rules; and Miltech, a new patent-pending wind-turbine technology.

Jerusalem of Silicon is actually enjoying its second, not first, renaissance. Speaking to TheMarker’s Inbal Orpaz, entrepreneur Eli Wurtman recounted some of the recent history.

From 1993 to 2000, hi-tech flourished in Jerusalem. Intel and Teva built major plants there. As early as 1985, Jerusalem was home to Intel’s Fab 8, at the time, only its 8th fabrication plant worldwide. Erel Margalit’s and Shlomo Kalish’s Jerusalem Venture Partners became a top VC firm.

Then, the dot.com bubble burst, the second intifada (2000-2005) broke out and, Wurtman said, “the nuclear winter arrived and young creative energy began drifting to Tel Aviv.” But, since 2012, Orpaz wrote, “more and more entrepreneurs are finding it possible to build a start-up in the Holy City – without having to compromise.

“Young people, mostly in their 30s, who grew up in the capital during the second intifada are now playing an important role in the city’s rebirth and growth,” Orpaz observed. “They are passionate about the idea [of launching a start-up] and see the development of local industry as a personal mission – one that will allow them to continue living in the city.”

In my travels, I’ve found that this source of start-ups – young college graduates who want to go on living where they studied – springs up in surprising places. I once brought a group of Israeli hi-tech managers to a far-north part of Finland, to a city called Oulu, near the Arctic Circle. As the

world’s largest far-north city outside of Russia, Oulu has a great science university that generates graduates who love the place and want to stay – so they launch local start-ups. This has shaped an improbably vibrant start-up ecosystem amid ice, snow and near 24-hour winter darkness.

According to Startup Genome’s report, metro Jerusalem accounts for \$26b. of Israel’s \$300b. gross domestic product, or about 9%. Early-stage funding per start-up is equal to the global average of \$254,000; this is a broad measure of funding access, not the average amount raised by each start-up. Women founders are 15% of the total, and a measure of Jerusalem’s “global connections” scores 50% higher than the global average.

ANOTHER KEY part of Jerusalem’s hi-tech ecosystem is Hadassah Medical Center in the Jerusalem neighborhood of Ein Kerem. For example, Oramed Pharmaceuticals, a publicly traded biotech company, works with Hadassah to develop oral delivery systems for medicines normally given by injection. Oramed CEO Nadav Kidron recently cut a \$50 million deal with a Chinese pharmaceuticals company.

Kidron said Hadassah was a key variable in the decision to be based in Jerusalem. “Jerusalem is far more than meets the eye,” he said.

There is a dark side to Jerusalem of Silicon, however – wealth amid poverty. “The poet Yehuda Amichai wrote, Jerusalem is a port city on the shore of eternity,” Eisenbud wrote last year in the Post, “yet many people express incredulity and disappointment upon learning that it also is the poorest city in the country.” According to the Central Bureau of Statistics, approximately half of the capital’s total population, including 82% percent of East Jerusalem residents, live below the poverty level.

Eisenbud quotes Dr. Naomi Hausman, assistant professor of economics at the Hebrew University, who believes that the wildly disparate work ethics and educational standards embraced by different populations have resulted in an economic crisis.

“The main determinant of a city’s success

is its population, and Jerusalem is special because it has two very large populations that have different characteristics,” Hausman told the Post. “One is the haredi population, and the other is the Arab population. Both of those groups are problematic in terms of production and income because they work at markedly lower rates.” The phenomenon of hi-tech wealth amid abysmal poverty is not solely a Jerusalem phenomenon, but prevails throughout Israel.

In 2001, construction began on the Jerusalem-Tel Aviv railway line. When completed, perhaps in 2018, this rail line will span 56 kilometers of electrified track. It has taken many years to complete, in part because of the need for extensive tunneling. It will whisk passengers from Tel Aviv to Jerusalem, or vice versa, at 160 km an hour, in just 28 minutes, and link Jerusalem to Ben-Gurion Airport in only 20 minutes.

That will essentially merge the Tel Aviv and Jerusalem start-up ecosystems and, I believe, inject vastly more energy (and money) into the Jerusalem start-up scene.

Speaking of money, I asked Startup Genome CEO J.F. Gauthier what it might take to boost Jerusalem into the Top 20.

“Building on Israel’s strengths in innovation and ‘going global,’ Jerusalem has managed to develop a thriving tech ecosystem in its own right,” he said. “If it can catalyze its recent successes into global resource attraction, we may see the emergence of a Top-20 ecosystem.” In short – attract much more money.

*Jerusalem of gold,
And of bronze and of light,
Behold I am a violin for all your songs*

Who would have guessed that for Jerusalem the “violin for all your songs” might be hundreds of start-ups – strings of divine creativity, born in a university and wrapped in tiny chips of silicon, playing a joyful symphony about change-the-world innovation in the city of King David? ■

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