

a pond. RAD is the company Zisapel founded in 1981 together with his brother Zohar. They both studied electrical engineering at the Technion-Israel Institute of Technology.

The RAD cloud or cluster comprises 128 companies (though not all survive to this day), many of them not far from RAD's home office in Ziv Towers on Raul Wallenberg Street, in the hi-tech area known as Atidim, in Ramat Hahayal, a northern Tel Aviv neighborhood. Together, they account for 15,000 well-paid hi-tech jobs and billions in export dollars.

Zisapel and his brother created the cloud, starting over 33 years ago, and are extremely proud of it. The Zisapel model solved a painful dilemma start-ups face as they grow – if you implement every idea your creative engineers have, your business loses focus and dies; but, if you tell them to shut up and do their job, your creative people leave and your business also dies.

The RAD Group is today a global Israel-based family of independent companies that make network and telecom software and hardware. It employs 3,500 workers and has annual revenues of about \$1.4 billion.

RAD's organizational structure is unique. There is no holding company. Each company in the RAD Group operates independently, but “under a common strategic umbrella.” This decentralized approach keeps each business flexible and alacritous, but leverages synergies inherent in small entrepreneurial businesses. It is how RAD is very big but manages to feel small.

Whenever a market opportunity is identified that needs technology, a marketing approach or corporate culture that does not exist in any of the other companies, a new business is created. This has happened 128 times to create the RAD viral cloud.

Three Israeli scholars have studied viral start-ups intensively, including RAD. They are Professors Israel Drori, Tel Aviv University, Shmuel Ellis, College of Management, and Zur Shapira, New York University. In their 2013 book “The Evolution of a New Industry: A Genealogical Approach” they document six “genealogies” – Telrad, ECI, Tadiran, Fibronics, Comverse, as well as RAD. Each of these companies spun off numerous other start-ups virally.

It emerges that viral start-ups are not new to Israel. According to these scholars, during the period 1991-1995, some 39 start-ups emerged from these six mother ships, including 14 from Tadiran, a communi-

cations firm founded in 1932, and 13 from Fibronics, an early pioneer in fiber-optics founded at the Technion. The book by Drori et al. shows the viral process is accelerating; 171 new start-ups emerged from the six founding firms from 1996 to 2000, and 222 during the years 2001-2005.

THE RAD MOTHER SHIP HAS HELPED CREATE 128 COMPANIES THAT ACCOUNT FOR 15,000 HI-TECH JOBS AND BILLIONS IN EXPORT DOLLARS

Drori, Ellis and Shapira use the term “genealogy” advisedly. The process is indeed genetic. A real virus takes over a cell at times by injecting its gene, or RNA, into the cell; the cell then replicates the virus. A start-up virus sends a “gene” (passion to create and invent) from an existing start-up into new ones, which in turn replicate. An example is the failed start-up of Dov Moran, Modu, which was closed and led to some 16 other start-ups, including those of Moran himself. (See “Failure University,” *The Jerusalem Report*, August 26, 2013.)

MY TECHNION colleague, Prof. Dan Shechtman, 2011 Nobel laureate in chemistry, understood the viral process early. For 27 years, he has organized and run an annual entrepreneurship course, offered to all Technion students, every fall semester. I am privileged to assist him. Shechtman's guiding principle is simply to invite entrepreneurs to tell their stories – not just successes, but hardships, mistakes, failures and crises. In this way, Technion students catch the virus, by seeing and hearing ordinary people who have achieved extraordinary feats by launching creative new businesses. We have had students who took our course return to tell other students how they launched and built their own start-ups.

I ask Yehuda Zisapel whether he purposely created his viral model from the outset, in 1981.

Did you have a vision at that time of creating a cloud of 128 start-ups, employing

15,000? And how did you balance the investment of time between helping RAD alumni who formed start-ups and running RAD itself?

“The idea evolved over time,” he tells *The Jerusalem Report*. “The first successful start-up was RAD. It was a lean organization that outsourced functions from Bynet (RAD's early predecessor, launched in 1977) and other third parties. Once RAD was successful, we decided to copy it and thereby duplicate the model. While duplicating, we improved the model. On average, we started a company every year.” Other companies were started by RAD alums.

I point out to Zisapel that there are other ‘viral’ clouds in Israel, but they are more informal – like www.exscite.com, the group of those who worked for Efi Arazi at Scitex. The Zisapel “cluster is far more tangible, grouped physically mostly around Wallenberg Street, in north Tel Aviv.” “At the Massachusetts Institute of Technology, there are some 80 biotech companies clustered around it. Research by MIT Prof. Tom Allen shows that the employees talk to one another a lot, and this informal network greatly helps.”

“Did the fact that the 128 companies in the RAD cloud were mostly located near one another contribute to their success?”

The answer is yes. “In our group of companies, we are located in the same block of buildings, sharing common courtyards and restaurants,” Zisapel says, “which promotes informal interaction. In addition, there are also formal venues for interactions, such as sharing exhibitions, sales meetings, customer meetings, technology discussions, OEM (original equipment manufacturers), and other cooperation, such as leads and networking, etc.”

After seeing the cloud of colored dots on Zisapel's wall, my curiosity was piqued. My Technion and [Neaman Institute](#) colleague, [Prof. Amnon Frenkel](#) of the Faculty of Architecture, along with our assistant, Dr. Emil Israel, studied the 128 RAD start-ups intensively. We interviewed many of the companies in the cloud. I ask Zisapel about one of our research findings.

“In our study of the RAD cloud,” I note, “we compared two opposing types of benefits that clouds or clusters of start-ups enjoy. New start-ups launch products with similar technologies and benefit from shared knowledge. But, new start-ups also launch products with different technologies and

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COURTESY RAD GROUP

Yehuda Zisapel: Creating the cloud

benefit from the diversity of the cloud, because whatever technology you need, you can usually find it, even informally, in other nearby start-ups.

“Both of these types of benefits exist in the RAD cloud. But which do you think is more important?” I ask. Our study tended to support the importance of diversity and the key role of the ambience of Greater Tel

Aviv, a vibrant dynamic city that attracts creative people of all kinds. Zisapel agrees. And he uses present tense, because even though he is 72 years old, the process he invented 33 years ago continues unabated.

“Our objective is to create new companies that either develop new technology or address different market needs,” Zisapel points out. “Addressing different

market needs is the more common objective. We create the new company in a new, fast-growing market, with practically unlimited potential growth space. We attempt to create companies in market positions, which will be complementary rather than competitive.”

A DECENTRALIZED APPROACH KEEPS BUSINESSES FLEXIBLE, BUT LEVERAGES SYNERGIES INHERENT IN SMALL ENTREPRENEURIAL FIRMS

“Is there anything the government did, or might have done, that helped you build the RAD cloud?”

“The government did not provide any different support than the standard offered to start-ups,” Zisapel replies.

Zisapel has been campaigning for years to expand the number of engineers graduating from Israeli universities. On another occasion, he told me that on average an electrical engineer generates annual value added value of one million dollars. But his efforts have met with little response.

“Growth of the hi-tech industry is generated by quality engineers and scientists,” Zisapel asserts. “Unfortunately, the government does not grow the infrastructure of high-level engineering. As a result, hi-tech will grow outside of Israel.”

The Zisapel approach encourages creative people to leave big and growing companies and start small ones, and helps them out with some advice, money, contacts and a network of support. This is not a message that corporate management likes to hear. Creative talent is scarce; surely it is wise to fight to keep it at home, they say, rather than let it escape and migrate.

Over 30 years ago, RAD and the Zisapel brothers broke the rules. They began spreading the Entrepreneurvirus. Israel, and perhaps the world, have gained much as a result. ■

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