

Auto-tech co Foresight set for Nasdaq debut



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Developed for border control, Foresight's 3D systems and cameras for cars operate in complete darkness and all weather conditions.

The global auto market looks set for some dramatic changes in the coming years. One of these, perhaps the most important, will take place following the accelerated development of driver assistance systems, especially systems for preventing road accidents, which are expected to culminate in a fully autonomous vehicle in the not-too-distant future.

Quite a few companies around the world, the vast majority of them startups, are trying to grab a share of this giant market. Some of them are in Israel, with the most prominent being **Mobileye** (NYSE: **MBLY**), sold to Intel several months ago for the huge sum of \$15 billion.

One far smaller company in terms of business and market cap is **Foresight Autonomous Holdings Ltd.** (TASE: **FRST**), founded two years ago on the basis of technology developed by Magna BSP, a TASE-listed company active since 2001, for defending borders and sensitive facilities. Foresight still has no revenue, but a 300% spurt in its market cap this year and an investment by several leading local auto industry concerns have boosted its market cap to NIS 680 million.

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13 03:16	13 10:39	13 12:04	1425.87	13 12:01	13 12:01	13 12:01
▼ -0.52% 6175.46	▼ -0.1% 2429.39	▲ +1.22% 370.07	▲ +0.37%	▲ +0.08% 1.1214	▲ +0.02% 3.9663	▲ +0.07% 3.5354

Foresight's offices are in Ness Ziona. The company has 30 employees, including 10 in Dimona and the rest in Ness Ziona. The company is managed by CEO and controlling shareholder Haim Siboni, who holds 38% stake. A trip in its demonstration vehicle gives the impression that Foresight has very good potential for gaining a share of the developing market for advanced driver assistance systems. At the same time, the burden of proof is still on Foresight's management, which must get over the hurdle of signing its first substantial contract with a major auto manufacturer.

Siboni says, "Magna began its development in January 2001. Only after only after a decade was its technology installed on Israel's borders, and that was only after the IDF, its customer, tested the system under thousands of scenarios and attempted penetrations under all types of weather conditions. Today, the system is deployed on all the borders, in the most sensitive places in Israel, and also at quite a few overseas sites. We completed against **Rafael Advanced Defense Systems Ltd.**, Elta Systems, and other companies, and the IDF eventually selected our system.

"When we competed against giants like Rafael and **Elbit Systems Ltd.** (Nasdaq: **ESLT**; TASE: **ESLT**), they came to me with questions and doubts about how we could succeed against companies that were so much larger than us. We proved then that our system was the best. Today, I'm in a similar situation with Foresight, and I believe that here, too, before too long, they will realize that our system is the best."

"Globes": What is special about Foresight's system?

Siboni: "Many systems fail in the transition from a friendly environment, such as an office, for example, to a more aggressive environment outside. Our system was developed for work in the toughest and most aggressive environment, and only after it was used for an autonomous IDF vehicle did we take it into a civilian environment.

"At a certain stage, the IDF budget was cut, and then we went in the direction of developing the system's brain with aid from the Chief Scientist, after we realized that there was a need and a shortage in the global auto market for 3D (stereo) systems with two or more cameras, like ours, in contrast to other systems, which are mono, meaning that they operate with one camera."

Approval for Nasdaq listing

Three months ago, Foresight completed a NIS 43 million financing round, and now has nearly NIS 60 million in cash. Together with options that are deep in the money, which are expected to general NIS 200 million more for the company in the next two years, following the recent jump in the share price (which has tripled since the financing round), Foresight

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has enough money for the coming years, during which it is expected to begin selling its system to one or more auto manufacturers.

In mid-May, Foresight submitted documents for being listed for trading on Nasdaq, and last week reported that it had received approval. Trading in the company's share is slated to begin next week under the FRSX ticker symbol through American Depository Shares (ADS), with each certificate representing five shares. The company's shares will be listed without a financing round.

"The company's shares were snapped up in the recent financing rounds, and had we wanted to, we could have raised much more money," Siboni says, "but because of tax regulations and because we don't need more money right now, we did not make the financing round bigger."

Nevertheless, you do not have any revenue yet.

"True. We're only at the beginning, and we still have to sign contracts with major auto manufacturers. I believe that this will happen very soon. As we reported, we had a successful trial in China, to say the least."

Why should a manufacturer of a leading vehicle buy the company's system?

"We work using the method of the human brain. You define the parameters for the system, and then you warn as soon as identification is made. The competitors' mono systems are built on a library of objects defined in advance. The system analyzes what it identifies from the library, and only warns then. That, of course, takes longer, and does not do a good job of monitoring random and sudden objects, such as a bag, for example, or a balloon suddenly moving over the road. 3D operation makes it possible to define many parameters into the algorithms, in contrast to the mono system.

"The algorithm is very flexible. We aim the highest, and want to be the leaders in the field, as we were in the military sphere, and I have no doubt that we're there. If we aren't the leaders, we won't manage to get in and sign contracts with leading auto manufacturers. Why should they look at us if we don't present a leading system?"

What else is your system able to do?

"The system is capable of identifying small objects (40 centimeters by 40 centimeters), and in particular, it is able to distinguish between an important factor and one that can be ignored, something that other systems are unable to do. Operations under all weather conditions and in complete darkness are a very difficult problem for other systems, which they have difficulty in coping with. When we developed the system for the border, it proved

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Auto importers buy shares and inject capital

Foresight joined the Tel Aviv Stock Exchange (TASE) in January 2016, after completing a merger into Asia Development, a stock exchange shell. Investors in its first financing round included Yitzhak Manor's Lubinski group, the importer of Peugeot and Citroen; Itzhak Swary, chairman of Allied, which own Champion Motors, importers of Audi, Seat, Volkswagen, and Skoda; and Guy Meyohas, holder of the Porsche franchise for Israel. Financier Itschak Shrem, Professor Benad Goldwasser, and a UK investment fund also invested in Foresight.

The company recently held additional financing rounds. The company raised a great deal of money, and demand was strong. No less important, however, was the identity of the investors putting money into Foresight, Most of these were strategic investors, including the Dayan family, one of the owners of auto trading company Trade Mobile and other auto industry businesses; Eini-family controlled Hamizrach Holding, a controlling shareholder in auto importer Universal Motors Israel (UMI); and Tzipora and Ariel Carasso from the Carasso family, which imports Nissan and Renault cars to Israel. They were joined by Dr. Yoav Ben Dror, Omer Galin and Eddie Shapiro, founders of successful algo-trading company Final; Retalix founder Brian Cooper, a founder of software company Retalix; Ayalim Mutual Funds; Tachlit Indices; the Hatzavim hedge fund; and Adv. Shmuel Zysman.

As a result of the money raised, and the money that will be raised from the exercising of options, Foresight's management can concentrate on continuing development of the system and signing contracts with one or more auto manufacturers in China, and perhaps also in other countries. "In the end, the system will be capable of detecting objects at any angle, not just in front. The most important thing in an autonomous vehicle is the brain of the system, and with all due modesty, our brain is the best currently existing in the market," Siboni says.

The analysts covering the auto sector believe that in four years, autonomous cars will begin traveling on the roads, and will be able to make a journey to a defined destination completely independently. Siboni believes that this time estimate is over-optimistic. "If you're talking about a trip within a city, you need another infrastructure layer to communicate with the vehicle, in case of a flat tire or malfunction, for example, that will move the car to the side of the road. There will be many stages here, and it will take longer than four years. The sensors have to be at a very high level, and only after a number of prolonged pilots will it reach the civilian market for trips within the city."

"The capital market doesn't understand what we have"

A trip in the company's demonstration vehicle and seeing how the system operates in real

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warnings about a variety of obstacles that occur on the road many times, especially in Israel's roads, which are replete with nervous drivers zigzagging between lanes and quite a few small relatively small obstacles, such as faulty infrastructure. At the same time, it is not yet a system that goes into action independently, for example braking when necessary. The company has to make it over the hurdle of signing a first contract with an auto manufacturer, which will define its needs and install the system in its vehicles.

This is probably going to happen soon, after the company conducted a successful test in China with Chinese automaker JAC Motors in the first two weeks of May. The company is now waiting for an answer from the Chinese about moving to the next phase. "Things move much quicker with the Chinese than with the West, but I don't know what they will decide, or when," Siboni says.

In the demonstration trip, it can indeed be seen immediately that Foresight's system is successful in identifying many objects, such as a child, baby carriage, and bicycle rider, that other systems have trouble identifying, according to Foresight's managers.

"Up until now, we have carried out more than 60 demonstrations of the system's activity in Israel, and quite a few investors in the auto industry, those that understand the matter, came to the demonstration, and wrote a check out as soon as it was over, after having been enthusiastic about the performance. The gap between our system and the competitors is enormous, in the ability to function a night and in all weather conditions, for example. The capital market in Israel doesn't really understand what we have. They call us, 'Little Mobileye'," Siboni chuckles.

The actual demonstration of Foresight's system is really impressive, but the company joined the race a little late, because Mobileye and the other companies active in the sector have already signed long-term contracts with most of the world's leading auto manufacturers. Foresight is therefore trying to achieve an initial foothold in the world's largest auto market – the Chinese market.

Are there more developments in Foresight's pipeline?

"Yes. We're developing a app through which the cellular device installed in the vehicle will "talk" with the other devices in the vicinity, such as those belonging to children, for example, behind a wall or a car, who are about to run out into the street, and the system in the car has not yet seen them. The system will issue a warning in advance, in other words, anticipate the accident likely to happen and prevent it. Another app is a system able to warn in advance about obstacles in the road, such as a bothersome car stranded on the side."

"We want to be the Waze and the Mobileye of the railways"

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In addition to its auto business, Foresight has a substantial (32%) share in Rail Vision, which deals in preventing accidents and autonomous driving systems for railways. Rail Vision's most recent financing round was two months ago, in which it raised \$5 million at a company value of \$20 million, before money. The company took advantage of the strong demand to increase the amount raised. Rail Vision, whose offices are in Ra'anana, currently has 25 employees, which is projected to grow to 40-45 employees by the end of the year.

Foresight invested \$1.4 million in Rail Vision in 2016 at a company value of \$2.4 million, before money. Investors in Rail Vision's most recent financing round included the Shrem Zilberman group, which led the round; the Lubinski group; Itzhak Swary; the Final founders; and a Swiss investment bank. The money raised is designated for completing development of the company's prototype, which is scheduled to be installed on locomotives in 2018.

"There are huge damages every year estimated in the billions of dollars resulting from accidents involving trains," says Foresight co-CEO and COO Ariel Dor, who is responsible for the connection and activity with Rail Vision. "The average locomotive requires 800-1,000 meters to stop, and Rail Vision's system is able to see for a distance of two kilometers, and also beyond the bends and curves in the track. Railways pay \$400 million a year in Germany alone for various delays and damages. More than 99% of the world's railway infrastructure is unmonitored. The solution is to station a system on the locomotive with sensors and a number of lenses that is able to operate in all weather conditions and in absolute darkness, with software capable of analyzing the input. That is what Rail Vision's system provides."

"This the first, and the only, company in the world to install such a system on the roof of a locomotive. There were attempts by giant companies, such as Siemens, to provide solutions, but they failed. The system is able to provide a large amount of information about the state of the locomotives, the state of the infrastructure, and maintenance of the tracks, whether there are worn parts that have to be replaced, and so forth. We want to be the Waze, the Mobileye, and the Google of the railways," says Dor.

Does the company have registered patents?

"There are six patents in the advanced registration process before approval. It is necessary to realize that the railway industry is going the way of the auto industry, but 10 years behind. Rail Vision is today the only company putting cameras on locomotives in Europe and Israel. It is collecting information, and we have already done a number of tests in Israel, Italy, and Germany. In Germany, for example, the railways company has 340,000 employees and \$40 billion a year in revenue, with a \$3 billion profit. This is an enormous market. We sit there with the senior management, because it very interested in the system, and has no alternatives. 2-4 employees there are injured a day in the operating areas, and they asked us to provide them with safety information that would help reduce the injuries and

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accidents. We proved that the system can provide this. They were astonished by the system's capabilities."

When will you start making revenue?

Dor: "We hope to start conducting funded pilots in early 2018. The company is receive queries daily. We have a meeting in the coming days with senior Japanese railway executives. There is a great deal of international interest in the company."

Will there be more financing rounds?

"There will probably be another financing round in the first half of 2018 at a much higher company value. Today, Rail Vision has enough money for a least a year ahead."

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