FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of April 2012 No. 02

TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 23105
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F x Form 40-F o

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes o No x

On April 18, 2012, the registrant announces Strong Presence in South America, Partners with Fast Company Brazil to Support Several Initiatives and Increased Business.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

TOWER SEMICONDUCTOR LTD.

Date: April 18, 2012 By: /s/ Nati Somekh

Name: Nati Somekh Title: Corporate Secretary

TowerJazz Announces Strong Presence in South America, Partners with Fast Company Brazil to Support Several Initiatives and Increased Business

Technological advances and rising economies in BRIC countries to fuel long-term growth of semiconductor demand resulting in annual growth rate of 7.4% until 2015

MIGDAL HAEMEK, Israel and SAO PAULO, Brazil, April 18, 2012 – TowerJazz, the global specialty foundry leader, today announced its new representative for South America, Fast Company Brazil, a business agency created to support companies' success in the Brazilian market. Through this partnership, TowerJazz will expand its presence in a fast growing semiconductor industry region. South America, and Brazil in particular, is a major focus for TowerJazz, driven by initiatives taken by the Brazilian government, involving the fast growing local fabless companies and design houses together with the established OEMs in the country. The expertise and close proximity of Fast Company Brazil will provide TowerJazz with additional access to South American countries and their emerging semiconductor markets.

The team at Fast Company Brazil has extensive semiconductor experience and is led by CEO and Founder, Jose Antonio Scodiero, who previously occupied the position of VP of Sales and Marketing for AMD in Latin America. The Company sees increased business as the Brazilian government has identified the semiconductor industry as a high priority. For instance, in one of their programs called CI BRASIL (Integrated Circuit Brasil), the government has sponsored 20 local design houses and trained more than 500 people in microelectronics. TowerJazz aims to utilize the considerable momentum occurring in the country.

According to PwC, growth in the global semiconductor market will be powered by the increasing importance of the BRIC (Brazil, Russia, India and China) economies' demand for semiconductor products. In a 2012 report, "Faster, greener, smarter – reaching beyond the horizon in the world of semiconductors," PwC mentions that both technological advances and the rising economies in those emerging markets will fuel the long-term growth of semiconductor demand, resulting in an annual average growth rate of 7.4% until 2015.

"As the global specialty foundry leader, we believe TowerJazz's portfolio in power management, RF and high performance analog will enable Brazilian semiconductor companies to make strides in becoming significant players in the global market. Partnering with Fast Company Brazil will enable us to establish presence in the region and demonstrate our superior customer support to Brazilian companies," said Dani Ashkenazi, Vice President of Sales at TowerJazz.

"The semiconductor market in South America is currently being formed and companies see value in personalized service to support their initiatives. Our local business development experience combined with TowerJazz's specialty process technologies, proven design enablement tools and excellent customer service will enable us to grow semiconductor business in this significant region," said José Scodiero, CEO and Founder of Fast Company Brazil.

About Fast Company Brazil

Fast Company Brazil is a business agency created at the beginning of 2009 to support companies' success in the Brazilian market. Fast Company Brazil assists companies in evaluating their operations feasibility in Brazil and companies planning to invest resources in Brazil needing a solid 'Go To Market Plan' reducing time to market. In addition, the Agency supports companies already in the country needing to increase results and take operations to the next level as well as startups and companies launching new products. Fast Company Brazil also develops Business Plans, Business Feasibility Studies Market Reports (findings and opportunities) and develops relationships with new partners and customers. The Agency leverages its cooperation with Brazilian key authorities, executives and specialists as well as engages in government programs for innovation and technology. For more information, visit: www.fastcompanybrazil.com.br.

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor, Inc. and its fully owned Japanese subsidiary TowerJazz Japan, Ltd., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits with geometries ranging from 1.0 to 0.13-micron, offering a broad range of customizable process technologies including: SiGe, BiCMOS, Mixed-Signal and RFCMOS, CMOS Image Sensor, Power Management (BCD), and Non-Volatile Memory (NVM) as well as CMOS and MEMS capabilities. TowerJazz also offers a world-class design enablement platform that complements its sophisticated technology and enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Technology Optimization Process Services to IDMs as well as fabless companies that need to expand capacity, or progress from an R&D line to a production line. To provide multi-fab sourcing, TowerJazz maintains two manufacturing facilities in Israel, one in the U.S., and one in Japan with additional capacity available in China through manufacturing partnerships. For more information, please visit www.towerjazz.com.

Safe Harbor Regarding Forward-Looking Statements

This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements. A complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect TowerJazz's business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4 and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority and Jazz's most recent filings on Forms 10-K and 10-Q, as were filed with the SEC, respectively. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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