



## Tessera Technologies Inc. (NASDAQ: TSRA)

### Company Background:

Tessera Technologies Inc. (NASDAQ: TSRA) is a technology innovation firm that develops and licenses its semiconductor and imaging intellectual property (IP) patents and knowledge to hardware manufacturers worldwide. TSRA generates IP licensing revenue from two primary markets:

1. Semiconductor packaging solutions: (e.g., creating mechanical and electrical connections between semiconductor chips and printed circuit boards on hardware devices) via its Tessera (legacy) and Invensas (next-generation) subsidiaries

2. Image processing solutions: (e.g., providing face beautification, "red eye" removal, panorama, and image stabilization features for smartphone cameras) via its FotoNation subsidiary.

### Key Investment Merits:

**1. Dominant market position:** TSRA has over 20 years of leadership in technology innovation and IP development which have been validated by its industry penetration. TSRA's inventions are found in all of today's smartphones and a broad range of electronic devices (from small wearable devices to large data centers). Over 100 billion (B) semiconductor chips have shipped with TSRA's packaging IP, and over 100 million (M) tablets, 625M smartphones and 1.2B digital still cameras have shipped with TSRA's FotoNation IP.

**2. High entry barriers:** TSRA benefits from a "wide competitive moat" due to:

1. Its strong IP that includes over 3,500 patents worldwide and should gain from a record number of patent applications in recent years

2. Its innovative workforce as TSRA has ~200 employees (roughly balanced between semiconductor packaging and image processing specialties) in 8 offices worldwide, of which ~110 are engineers and scientists and ~80 have advanced degrees.

**3. Significant market potential:** TSRA is expecting solid growth in the large multi-billion dollar semiconductor and image processing markets. For example, research firm Gartner

estimates TSRA's semiconductor focus segments of Dynamic Random Access Memory (DRAM) and Flash Memory will reach sales of \$83.3B in 2018, while imaging sensors will reach sales of \$9.8B in 2018. TSRA's top DRAM customers (Hynix, Micron, and Samsung) held over 90% DRAM market share in 2013, and Gartner forecasts DRAM shipment volumes to experience a 6% compound annual growth rate (CAGR) through 2018. Longer-term, TSRA sees customer unit volumes growing exponentially as computing shifts to mobile devices and wearables (e.g., the proliferation of "the Internet of Things"). TSRA also sees growing penetration in automotive and security electronics markets.

**4. Substantial revenue visibility:** TSRA has built a strong recurring revenue base via multi-year contracts with its key customers for IP licensing, technology transfers, and related software sales. Management recently raised its guidance for recurring revenues from \$120M to \$140M for 2014, and from \$150M to \$195M for 2015 (thus far). TSRA also generate sizable episodic (non-recurring) revenues (from one-time engineering fees, initial license fees, back payments resulting from audits, damages awards from courts or other tribunals, and lump sum settlement payments), although these are far less predictable and likely to decrease with reduced litigation expense over time.

**5. Strong growth opportunities:** TSRA expects its recurring revenues to ramp from a trough of \$103M in 2013 to ~\$195M in 2015, primarily driven by its legacy semiconductor IP. TSRA expects its recurring next-generation semiconductor IP licensing sales to ramp from a negligible amount in 2014 to ~\$30M in 2018 with a total addressable market greater than \$400M, and its recurring revenue from FotoNation to grow ~10x from ~\$10M in 2015 to ~\$100M over the next several years.

**6. Robust margin profile:** TSRA's revenues have near 100% gross margin as its IP licensing model requires no production costs. At its recent investor day in September 2014, TSRA raised its already high margin targets once it reaches \$180-200M in annual sales. TSRA now targets expense margins of 17-19% for research and development (vs. 16-17% previously), 19% for sales, general, and administrative (vs. 18-19%

previously) and only 4-14% for litigation (vs. 13-14% previously). This suggests a 48-60% operating margin or up to 1000bps of potential margin improvement which could translate into up to ~\$0.25 per share or ~20% greater earnings power.

**7. Shareholder-friendly management:** TSRA's new management is actively engaging with investors and returning substantial capital to shareholders via dividends and buybacks. TSRA currently pays a regular quarterly dividend of \$0.10 per share, which implies an annual dividend yield of about 1.5%.

TSRA also provides a special annual dividend equal to 20-30% of episodic gains (the net income gains resulting from episodic revenues) and deposits 20-30% of the episodic gains in a sinking fund to provide for the future growth of the quarterly dividend, although management may switch it to buybacks going forward.

In November 2013, TSRA's Board increased its share repurchase plan from \$100M to \$150M of which \$60.8M was still available as of September 30th, 2014, and it increased it again by \$100M in October 2014. TSRA's increased share repurchase activity over the past year exceeds all cumulative share repurchases in the firm's history, and we expect TSRA to continue executing aggressively on its buyback plan.

**8. Attractive valuation:** TSRA is attractively priced given its healthy growth prospects, a high-margin recurring revenue model which drives high returns on capital (20%+), and a strong balance sheet. TSRA's cash balance of ~\$7.33/share as of September 30th, 2014 is equal to ~25% of its equity market capitalization, and the firm has no debt.

We estimate TSRA has earnings power at ~\$1.25 in 2015 and ~\$1.50 in 2016 from recurring (non-episodic) revenue alone. This suggests that excluding the net cash on its balance sheet, TSRA's stock currently trades at only ~16x 2014 earnings and ~14x 2015 earnings. We believe TSRA deserves at least a 20x earnings multiple on its recurring earnings base, suggesting 25%-40% share price upside excluding the potential earnings upside from episodic revenue.

## Key Investment Catalysts:

**1. Turn-around progress:** Historically, many analysts and investors who followed TSRA perceived the firm as a litigious semiconductor-focused IP firm with a history of costly and lengthy patent enforcement lawsuits that delivered mixed financial results.

TSRA is now benefitting from a new management, strategy, and culture after well-regarded activist investor Starboard (9.1% owner) forced changes in its Board of Directors and executive team in mid-2013. TSRA's relations with its customers has shifted from adversarial to cooperative with an emphasis on technical collaboration rather than litigation. In the past 18 months, TSRA has settled litigation with over 10 major hardware firms (including Freescale, Hynix, Micron, Qualcomm, Samsung, and Sony) for a total sum well above \$300M. This was in sharp contrast to the ~\$200M collected over 8 years under prior management with over \$240M of related litigation expenses.

TSRA has also discontinued its own manufacturing operations to focus entirely on IP development and licensing, and expanded its innovation efforts in new areas such as next-generation semiconductor packaging (Invensas) and digital mobile imaging (FotoNation). As a result, 2014 should be TSRA's first revenue growth year since 2009 for continuing operations, and the firm has returned to profitability with a long-term target of 48-60% operating income margins.

Finally, TSRA is re-engaging with investors (it hosted its first analyst day in years on September 2nd, 2014) and returning substantial value to shareholders via dividends and share buybacks. These changes should lead to a positive inflection in analyst and investor perspectives of the firm.

## 2. Additional recurring licensing opportunities:

TSRA has significant recurring licensing opportunities ahead across its Invensas and FotoNation patent portfolios. For example, TSRA is exploring further collaborations with high-volume partners like Qualcomm and Samsung for both portfolios. TSRA also signed a \$50M non-exclusive licensing agreement in April 2014 with China-based O-Film which has not yet closed. Management believes there is substantial upside potential from this licensing deal, as well as from deals with other Chinese and Taiwanese hardware makers.

## 3. Additional legal and other episodic opportunities:

TSRA's two remaining major litigations are with UTAC (court hearing scheduled for Jan. 2015) and Amkor. Recently a California state court confirmed an arbitration award against Amkor and entered judgment of \$128.3M (~\$1.50/share after-tax) plus post-judgment interest of ~\$31K per day in favor of TSRA. These moves help lower litigation expense, expand profit margins, and remove remaining legal overhang. TSRA

also plans to pursue episodic revenue opportunities on an opportunistic basis.

#### 4. Potential mergers and acquisitions (M&A):

Although TSRA's management expects the firm's growth to be primarily organic, the firm has been acquisitive in the past and management remains committed to exploring M&A opportunities across firms, people, technologies, products, and IP. Management has indicated that these must be accretive targets with closely related businesses. I expect to see modest capital used for purchasing patents to augment TSRA's IP.

**5. Increased investor awareness:** TSRA is not widely followed by Wall Street, nor is it well-known to investors given its small size (~\$1.2B equity market capitalization as of 9/30/14). For example, TSRA is followed by only ~630 members of Seeking Alpha (the largest crowd-sourced investing platform with ~4 million registered users) and is covered by only 2 sell-side research analysts. Should TSRA continue to execute well and grow along its current trajectory, we would expect more investors to become familiar with and interested in the stock.

### Key Investment Risks:

**1. Customer concentration:** Hynix, Samsung and Micron control over 90% of the DRAM market and account for a significant portion of TSRA sales (we estimate each is a >10% customer). TSRA's IP revenues are dependent on its ability to renew contracts and collect royalties from these large customers. However, this risk seems unlikely in the foreseeable future given TSRA's strong relations with Hynix and Samsung, and its recent signing in July 2014 of a large multi-year licensing agreement with Micron after a two-year hiatus.

**2. Technology displacement:** TSRA's IP royalties could be sharply reduced if alternative semiconductor packaging

technologies displace its own in certain applications, especially with DRAM. However, this risk seems unlikely as Hynix and Samsung have already licensed TSRA's IP for the next 7 years, and TSRA's recent signing in a multi-year licensing agreement with Micron included the Invensas patent portfolio for advanced packaging and cooperation on future production technologies.

**3. Patent obsolescence:** TSRA's portfolio of issued patents has expiration dates that range from 2014 to 2032. Without new patents either developed internally or purchased, TSRA faces the risk to being unable to monetize its IP as key patents expire. However, this risk seems unlikely as TSRA has filed for a record number of new patents in recent years that extend the life of its IP, and management frequently reviewing ancillary patent portfolios for acquisition.

**4. Litigation risk:** TSRA relies on litigation to collect licensing royalties in many instances. As such, IP revenues are dependent on the company legal team's ability to succeed on the courts. In addition, greater than expected litigation expenses can be an overhang on the stock. However, as previously discussed, TSRA's relations with its customers in recent years have shifted from adversarial to cooperative with an emphasis on technical collaboration rather than litigation and only two major litigations remain outstanding.

**5. Uptake of emerging packaging technologies:** TSRA depends on timely uptake of new semiconductor packaging and image processing technologies to offset any potential decline in its more mature patents. If industry demand does not develop as quickly as expected, TSRA may not be able to maintain its sales levels. However, recent management commentary (e.g., during its recent analyst day and earnings call) was bullish on emerging technology penetration over the next several years as discussed above.



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