

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM S-8

**REGISTRATION STATEMENT UNDER
THE SECURITIES ACT OF 1933**

OSI SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

330238801
(I.R.S. Employer Identification No.)

**12525 Chadron Avenue
Hawthorne, California 90250**
(Address of Principal Executive Offices) (Zip Code)

**American Science and Engineering, Inc. 2005 Equity and Incentive Plan
American Science and Engineering, Inc. 2014 Equity and Incentive Plan**
(Full title of the plans)

Deepak Chopra
President and Chief Executive Officer
12525 Chadron Avenue
Hawthorne, California 90250
(Name and address of agent for service)

(310) 978-0516
(Telephone number, including area code, of agent for service)

Copies to:

Cary K. Hyden
Latham & Watkins LLP
650 Town Center Drive, 20th Floor
Costa Mesa, California 92626
(714) 540-1235

Indicated by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer
Non-accelerated filer
(Do not check if a smaller reporting company)

Accelerated filer
Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Title of Plan	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share(2)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee
Common Stock, \$0.001 par value per share	American Science and Engineering, Inc. 2005 Equity and Incentive Plan	28,197	\$ 67.52	\$ 1,903,862	\$ 192
Common Stock, \$0.001 par value per share	American Science and Engineering, Inc. 2014 Equity and Incentive Plan	37,882	\$ 67.52	\$ 2,557,793	\$ 258
Total		66,079		\$ 4,461,655	\$ 450

- (1) Represents 66,079 shares of common stock, par value \$0.001 per share (the "Common Stock"), of OSI Systems, Inc. (the "Registrant") subject to awards under the following equity and incentive plans assumed by the Registrant at the effective time of the merger (the "Merger") of the Registrant's wholly-owned subsidiary, Apple Merger Sub, Inc. ("Merger Sub"), with and into American Science and Engineering, Inc. ("AS&E"): (i) 28,197 shares of the Registrant's Common Stock issuable pursuant to outstanding restricted stock unit awards granted prior to the Merger under the American Science and Engineering, Inc. 2005 Equity and Incentive Plan (the "2005 Plan"); and (ii) 37,882 shares of the Registrant's Common Stock issuable pursuant to outstanding restricted stock unit awards granted prior to the Merger under the American Science and Engineering, Inc. 2014 Equity and Incentive Plan (the "2014 Plan," and together with the 2005 Plan, the "AS&E Plans"). The number of shares of Common Stock subject to the outstanding restricted stock unit awards under the AS&E Plans as of the closing of the Merger has been calculated pursuant to the formula set forth in the Agreement and Plan of Merger, dated as of June 20, 2016, by and among the Registrant, Merger Sub and AS&E. Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the amount registered hereunder includes an indeterminate number of shares of Common Stock that may be issued in accordance with the provisions of the AS&E Plans in connection with any anti-dilution provisions or in the event of any change in the outstanding shares of Common Stock, including a stock dividend or stock split.
- (2) The proposed maximum offering price per share and the proposed maximum aggregate offering price are estimated solely for the purpose of calculating the amount of the registration fee, and calculated pursuant to Rules 457(c) and 457(h) of the Securities Act based on the average of the high and low prices of shares of the Registrant's Common Stock as reported on The NASDAQ Global Select Market on September 7, 2016 of \$67.52.

This Registration Statement on Form S-8 (this “Registration Statement”) relates to an aggregate of 66,079 shares of the Registrant’s Common Stock subject to restricted stock unit awards governed by the terms of (a) the 2005 Plan and (b) the 2014 Plan.

The shares registered on this Registration Statement represent awards previously granted and outstanding under the AS&E Plans. Each restricted stock unit award outstanding under the AS&E Plans at the effective time of the Merger was assumed by the Registrant and converted into an award referenced by Registrant’s Common Stock, based on the rate specified in the Agreement and Plan of Merger, dated June 20, 2016, by and among the Registrant, AS&E and Merger Sub relating to the Merger, and otherwise remain subject to the same terms and conditions applicable to the AS&E award prior to the Merger.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I of Form S-8 will be delivered in accordance with Rule 428(b)(1) of the Securities Act. Such documents are not required to be filed with the Securities and Exchange Commission (“Commission”) either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424. These documents, and the documents incorporated by reference in Item 3 of Part II of this Registration Statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference

The Registrant hereby incorporates herein by reference the following documents filed with the Commission:

- (a) The Registrant’s Annual Report on Form 10-K for the fiscal year ended June 30, 2016, filed with the Commission on August 19, 2016; and
- (b) The description of the Registrant’s Common Stock contained in its Registration Statement on Form 8-A/A, filed with the Commission on March 8, 2010, including any amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold are incorporated by reference in this Registration Statement and are a part hereof from the date of filing such documents.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document which is also or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

No information furnished by the Registrant under items 2.02 or 7.01 of Form 8-K shall be deemed incorporated herein by reference unless such Form 8-K expressly provides to the contrary.

Item 4. Description of Securities

Not Applicable.

Item 5. Interests of Named Experts and Counsel

Not Applicable.

Item 6. Indemnification of Directors and Officers

Section 102(b)(7) of the Delaware General Corporation Law (the “DGCL”) provides that a corporation may, in its original certificate of incorporation or an amendment thereto, eliminate or limit the personal liability of a director for violations of the director’s fiduciary duty, except (1) for any breach of the director’s duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) pursuant to Section 174 of the DGCL, which provides for liability of directors for unlawful payments of dividends or unlawful stock purchases or redemptions or (4) for any transaction from which a director derived an improper personal benefit.

Section 145 of the DGCL provides that a corporation may indemnify any person, including an officer or director, who is, or is threatened to be made, party to any threatened, pending or completed legal action, suit or proceeding, whether civil, criminal, administrative or investigative, other than an action by or in the right of such corporation, by reason of the fact that such person was an officer, director, employee or agent of such corporation or is or was serving at the request of such corporation as an officer, director, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such officer, director, employee or agent acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the corporation’s best interest and, for criminal proceedings, had no reasonable cause to believe that his conduct was unlawful. A Delaware corporation may indemnify any officer or director in an action by or in the right of the corporation under the same conditions, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him against the expenses that such officer or director actually and reasonably incurred.

The Registrant’s bylaws provide for indemnification of the officers and directors to the fullest extent permitted by applicable law.

The Registrant also maintains a general liability insurance policy which covers certain liabilities of its directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, whether or not the Registrant would have the power to indemnify such person against such liability under the DGCL or the provisions of its certificate of incorporation or bylaws.

The Registrant has entered into indemnification agreements with each of its directors and certain of its officers. These agreements provide that the Registrant will indemnify each of its directors and such officers to the fullest extent permitted by law and by the Registrant's certificate of incorporation and bylaws.

Item 7. Exemption from Registration Claimed

Not Applicable.

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Item 8. Exhibits

Exhibit Number	Description
4.1	Certificate of Incorporation of OSI Systems, Inc. (1)
4.2	Bylaws of OSI Systems, Inc. (2)
4.3	Form of Common Stock Certificate (3)
5.1	Opinion of Latham & Watkins LLP
23.1	Consent of Latham & Watkins LLP (contained in Exhibit 5.1)
23.2	Consent of Moss Adams LLP, Independent Registered Public Accounting Firm
24.1	Power of Attorney (included on the signature page to this Registration Statement)
99.1	American Science and Engineering, Inc. 2005 Equity and Incentive Plan (4)
99.2	Form of performance-based restricted stock unit agreement under the American Science and Engineering, Inc. 2005 Equity and Incentive Plan (5)
99.3	American Science and Engineering, Inc. 2014 Equity and Incentive Plan (6)
99.4	Form of Restricted Stock Unit Grant Agreement under the American Science and Engineering, Inc. 2014 Equity and Incentive Plan (7)
99.5	Form of American Science and Engineering, Inc. Time-Based Restricted Stock Unit Agreement (8)
99.6	Form of American Science and Engineering, Inc. Performance-Based Restricted Stock Unit Agreement (9)

- (1) Incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on March 8, 2010.
- (2) Incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the Commission on March 8, 2010.
- (3) Incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Commission on March 8, 2010.
- (4) Incorporated by reference to Exhibit 99.1 to AS&E's Registration Statement on Form S-8 (No. 333-162291) filed with the Commission on October 2, 2009.
- (5) Incorporated by reference to Exhibit 10.31 to AS&E's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013 filed with the Commission on November 12, 2013.
- (6) Incorporated by reference to Appendix A to AS&E's Definitive Proxy Statement on Schedule 14A filed with the Commission on July 29, 2014.
- (7) Incorporated by reference to Exhibit 10.2 to AS&E's Quarterly Report on Form 10-Q for the quarter ended September 30, 2014 filed with the Commission on November 10, 2014.
- (8) Incorporated by reference to Exhibit 10.1 to AS&E's Current Report on Form 8-K filed with the Commission on August 4, 2015.
- (9) Incorporated by reference to Exhibit 10.2 to AS&E's Current Report on Form 8-K filed with the Commission on August 4, 2015.

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Item 9. Undertakings.

(a) The Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price

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LATHAM & WATKINS LLP

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Barcelona	Moscow
Beijing	Munich
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Century City	Orange County
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Dubai	Riyadh
Düsseldorf	Rome
Frankfurt	San Diego
Hamburg	San Francisco
Hong Kong	Shanghai
Houston	Silicon Valley
London	Singapore
Los Angeles	Tokyo
Madrid	Washington, D.C.
Milan	

September 9, 2016

OSI Systems, Inc.
 12525 Chadron Avenue
 Hawthorne, California 90250

Re: Registration Statement on Form S-8;
66,079 shares of Common Stock, par value \$0.001 per share

Ladies and Gentlemen:

We have acted as special counsel to OSI Systems, Inc., a Delaware corporation (the "Company"), in connection with the registration by the Company of 66,079 shares of common stock, par value \$0.001 per share (the "Shares"), of the Company subject to restricted stock unit awards assumed by the Company pursuant to the terms of that certain Agreement and Plan of Merger dated as of June 20, 2016 by and among the Company, American Science and Engineering, Inc. ("AS&E") and Apple Merger Sub, Inc. (the "Merger Agreement"). Pursuant to the Merger Agreement, the Company assumed such outstanding restricted stock unit awards of AS&E under the American Science and Engineering, Inc. 2005 Equity and Incentive Plan and the American Science and Engineering, Inc. 2014 Equity and Incentive Plan (collectively, the "AS&E Plans"). The Shares are included in a registration statement on Form S-8 under the Securities Act of 1933, as amended (the "Act"), filed with the Securities and Exchange Commission (the "Commission") on September 9, 2016 (the "Registration Statement"). This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related prospectus, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware (the "DGCL") and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the holders and have been issued by the Company for legal consideration in excess of par value in the circumstances contemplated by the AS&E Plans, assuming in each case that the individual awards under the AS&E Plans vest in accordance with the requirements of law and the AS&E Plans (and the agreements and awards duly adopted thereunder and in accordance therewith), the issuance and sale of the Shares will have been duly authorized by all necessary corporate

September 9, 2016
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LATHAM & WATKINS LLP

action of the Company, and the Shares will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Latham & Watkins LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement (Form S-8) of OSI Systems, Inc. (the "Company") of our report dated August 19, 2016, related to the consolidated financial statements and financial statement schedule of the Company and the effectiveness of internal control over financial reporting of the Company, appearing in the Annual Report on Form 10-K for the year ended June 30, 2016, filed with the Securities and Exchange Commission.

/s/ Moss Adams LLP

Los Angeles, California
September 9, 2016
