



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

Mail Stop 3720

January 8, 2010

Mr. Carl Russo
President and Chief Executive Officer
Calix Networks, Inc.
1035 N. McDowell Blvd.
Petaluma, CA 94954

**Re: Calix Networks, Inc.
Amendment No. 1 to Form S-1
Filed December 31, 2009
File No. 333-163252**

Dear Mr. Russo:

We have reviewed your amended filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 37

Significant Factors, Assumptions and Methodologies Used in Determining Fair Value, page 42

1. We note your response to comment nine from our letter dated December 17, 2009. We may have further comments after we review your discussion of the reasons for any variance between your common stock valuation and the expected initial public offering price.

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Results of Operations, page 48

Liquidity and Capital Resources, page 55

2. We note your response to comment 13 in our letter dated December 17, 2009 pertaining to the company's liquidity disclosure. In this regard, you supplementally advised us that based on the company's current operating plan, not taking into account the expected proceeds from the initial public offering, you believe that your existing cash, cash equivalents, marketable securities and existing amounts under the revolving line will be sufficient to meet your anticipated cash needs for at least the next twelve months. Please further revise your liquidity disclosure in the prospectus to include this statement.

Director Compensation Table, page 88

3. In your next amendment, please update your director and executive compensation disclosure to disclose the information required by Item 402 of Regulation S-K for the recently completed fiscal year, December 31, 2009.

Executive Compensation, page 90

Compensation Discussion and Analysis, page 90

Competitive Market Review, page 92

4. We note your response to comment 17 in our letter dated December 17, 2009. Please further revise to identify the companies that comprise the Cash Compensation Peer Group.

Audited Financial Statements

Revenue Recognition, page F-9

5. We note your response to comment 22 from our letter dated December 17, 2009. Please revise your disclosure to incorporate your response related to the customer arrangements with extended payment terms which are generally considered not to be fixed or determinable. Include in your disclosure why these arrangements are generally considered not to be fixed or determinable. As previously requested, quantify the amounts that have been deferred for each type of arrangement. We note your disclosure on page 38.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

You may contact Sharon Virga, Staff Accountant, at (202) 551-3385 or Kyle Moffatt, Accountant Branch Chief, at (202) 551-3836 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Knight, Staff Attorney, at (202) 551-3370, Kathleen Krebs, Special Counsel, at (202) 551-3350, or me at (202) 551-3810 with any other questions.

Sincerely,

Larry Spigel
Assistant Director

cc: by facsimile to (650) 463-2600
Patrick A. Pohlen, Esq.
(Latham & Watkins LLP)