



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

Mail Stop 3720

January 22, 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. 2 to Form S-1
Filed January 19, 2010
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..., page 37

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

1. We note your response to comment one from our letter dated January 8, 2010. Please incorporate your response to discuss the reasons for any variance between your common stock valuation and the expected initial public offering price.

Executive Compensation, page 90

Compensation Discussion and Analysis, page 90

Competitive Market Review, page 91

2. We note your response to comment four from our letter dated January 8, 2010. Please disclose more specifically the criteria used to select the companies underlying the compensation surveys that you used.
3. In the first sentence of the last full paragraph on page 92, you state that Semler Brossly Consulting Group, LLC verified an executive compensation review “prepared by an independent consultant.” Please revise to provide more information regarding this independent consultant, such as:
 - identify the consultant;
 - state who hired the consultant;
 - describe the nature and scope of the assignment; and
 - describe the material elements of the instructions or directions given to the consultant with respect to the performance of its duties under the engagement.

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 Dean Suehiro, Senior Accountant, at (202) 551-3384 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 Spirgel
Assistant Director

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