



DIVISION OF
CORPORATION FINANCE

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

March 6, 2012

Via e-mail:

Mr. Paul F. Brauneis
Chief Financial Officer
Sycamore Networks, Inc.
220 Mill Road
Chelmsford, Massachusetts 01824

**Re: Sycamore Networks, Inc.
Form 10-K for the fiscal year ended July 31, 2011
Filed September 21, 2011
Form 8-K
Filed February 16, 2012
File No. 000-27273**

Dear Mr. Brauneis:

We have reviewed your filing and have the following comments. Please comply with the following comments in future filings. Confirm in writing that you will do so and explain to us how you intend to comply. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the fiscal year ended July 31, 2011

2. Summary of Significant Accounting Policies, page 51

Revenue Recognition, page 53

1. Your multiple elements arrangement disclosure appears to quote accounting literature, but does not provide specific qualitative and quantitative information about your revenue arrangements. Please refer to the guidance in ASC 605-25-50. Provide us with your proposed disclosures.
2. We note your discussion about a multiple element arrangement that included hardware and non-essential software deliverables. You state that under current guidance you,

“recognized \$0.7 million in revenue and deferred \$0.1 million related to this multiple element transaction. Under the prior revenue recognition guidance the Company would have deferred \$0.8 million of this multiple element transaction.” In this regard, since the non-essential software deliverables continue to be accounted for under the previous software recognition guidance, tell us why you believe the accounting is different for this multiple element arrangement.

9. Share-Based Compensation, page 63

Stock Option Activity, page 65

3. We note your disclosure that, “In accordance with the provisions of the Company’s stock plans, an equitable adjustment was made to all outstanding option awards to give effect to the December 22, 2010 cash distribution to the Company’s common stockholders. No stock compensation charge was recorded in connection with the adjustment. The above stock option table has been adjusted to reflect the equitable adjustment.” In this regard;
 - Tell us in detail what type of adjustment(s) was made to your outstanding option awards.
 - Tell us why the adjustment did not result in a stock compensation charge.
 - Tell us why the number of option shares outstanding at July 31, 2010 in your Form 10-K for the fiscal year ended July 31, 2010 does not roll forward to the option shares outstanding shown in this current Form 10-K for the fiscal year ended July 31, 2011.

Form 8-K filed February 16, 2012

4. We note that your press release in Exhibit 99.1 includes a tabular presentation labeled “Unaudited Non-GAAP Consolidated Statements of Operations.” We do not believe it is appropriate to present a full non-GAAP income statement in your filings with us, including your Form 8-K earnings releases. The presentation of a full non-GAAP income statement may attach undue prominence to the non-GAAP information. Please revise in future filings to delete the full non-GAAP income statement presentation. Please refer to Instruction 2 to Item 2.02 of Form 8-K which states that certain provisions of Item 10(e) of Regulation S-K apply to disclosures under Item 2.02. We also refer you to the guidance in Question 102.10 of the Compliance and Disclosure Interpretation on Non-GAAP Financial Measures dated July 8, 2011.

Please file all correspondence over EDGAR. We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a

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company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Inessa Kessman, Senior Staff Accountant, at (202) 551-3371 or Terry French, Accountant Branch Chief, at (202) 551-3828 if you have questions regarding comments on the financial statements and related matters. Please contact me at (202) 551-3810 with any other questions.

Sincerely,

/s/ Terry French for

Larry Spirgel
Assistant Director