



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

DIVISION OF
CORPORATION FINANCE

May 19, 2011

Mr. Amir Bassan-Eskenazi
President and Chief Executive Officer
BigBand Networks, Inc.
475 Broadway Street
Redwood City, CA 94063

**Re: BigBand Networks, Inc.
Form 10-K
Filed March 9, 2011
and Documents Incorporated by Reference
File No. 1-33355**

Dear Mr. Bassan-Eskenazi:

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 filed March 1, 2011

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 29
General

1. Please revise your disclosure in future filings to expand management's assessment of how future performance could be materially impacted by the trends affecting your business. For example, such disclosure should address the impact the rate of domestic and international SDV deployment may have on both your product and service revenues. Your expanded analysis should also explain why management believes IPTV will have a "more meaningful contribution" in fiscal 2011 (as noted on page 35) and address the impact your increased inventory balance as of December 31, 2010 may have on your pricing and gross margin.

Critical Accounting Policies and Estimates, page 31

Revenue Recognition, page 31

2. Tell us the nature of the costs that are netted against deferred revenues, your accounting policy for such costs, and your basis for presenting the revenues and costs on a net basis.

Note 8. Stockholders' Equity, page 67

Equity Incentive Plans, page 67

3. We note that you elected to use the pooled method to account for the options exchanged in the Exchange Program you commenced on October 21, 2010. Describe this method for us in more detail, including your accounting treatment for the newly issued RSUs and clarify your basis in the accounting literature.

Definitive Proxy Statement filed April 26, 2011

Equity-Based Pay, page 26

4. As requested in comment eight of our letter dated November 6, 2008, in future filings please explain how and why actual equity awards granted to each named executive officer were determined. We note the various factors the compensation committee considered, but your disclosure does not analyze how the committee's consideration of these factors resulted in the amounts awarded to each executive. Please provide us with proposed disclosure using information from your 2010 proxy statement. See Item 402(b)(2)(vii) of Regulation S-K.

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 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

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- 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 Melissa Hauber, Staff Accountant at (202) 551-3368 or Robert Littlepage, Accountant Branch Chief at (202) 551-3361 if you have questions regarding comments on the financial statements and related matters. Please contact Jessica Plowgian, Attorney-Advisor at (202) 551-3367 or Paul Fischer, Attorney-Advisor at (202) 551-3415 with any other questions.

Sincerely,

/s Paul Fischer, for

Larry Spigel
Assistant Director