



DIVISION OF
CORPORATION FINANCE

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

April 18, 2012

Via E-mail

Syed Ali
President and Chief Executive Officer
Cavium, Inc.
2315 N. First Street
San Jose, CA 95131

**Re: Cavium, Inc.
Form 10-K for Fiscal Year Ended December 31, 2011
Filed February 27, 2012
File No. 001-33435**

Dear Mr. Ali:

We have reviewed your filing and have the following comments. 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 amending your filing, 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 or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Item 7. Management's Discussion and Analysis . . . , page 37

Fiscal 2011 Compared to Fiscal 2010, page 48

1. Please tell us, and revise future filings to clarify, the underlying causes for each of the material changes in the line items you discuss. For example, you attribute the increase in revenue in 2011 to "an increase in sales," "strong unit shipment growth," and an "increase in demand," but it is unclear what caused the increase in sales, demand or shipment growth. Likewise, you also attribute changes in gross margin for 2011 to "reduced average selling prices" and for 2010 to "favorable sales mix," and "sales of higher margin products"; however, it is unclear what impact price changes had and how product mix shifted compared to the prior period. In this regard, please tell us how the products you mention affect average selling prices and the effect each product line has on margins. Also tell us, with a view toward disclosure, where your document includes the three-year revenue history of those products and the effect of new product introductions on product mix during the periods presented. See Regulation S-K Item 101(c)(1)(i).

Cash Flows from Operating Activities, page 52

2. Please revise future filings to discuss clearly the reasons for underlying changes to the items you mention. For example, you cite the “increase in inventory” as the “result of higher inventory build-up,” but it is unclear what caused that build up. Did the build result from lower-than-expected sales and “an inventory build at the new Cisco hub location” during the fourth quarter, as noted in management’s fourth quarter earnings call?

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
- 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.

Please contact Joseph McCann at (202) 551-6262 or Geoff Kruczek, Senior Attorney, at (202) 551-3641 with any other questions.

Sincerely,

/s/ Geoff Kruczek for

Russell Mancuso
Branch Chief