



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

March 18, 2009

Via U.S. Mail and Facsimile 408-970-9998

Helene Simonet
Executive Vice President and Chief Financial Officer
Coherent, Inc.
5100 Patrick Henry Drive
Santa Clara, CA 95054

Re: Coherent, Inc.
Form 10-K for the Fiscal Year Ended September 27, 2008
Filed November 25, 2008
Form 10-Q for the Quarterly Period Ended December 27, 2008
File No. 001-33962

Dear Ms. Simonet:

We have limited our review of your filings to those issues we have addressed in our comments. Where indicated, we think you should revise your future filings in response to these comments. If you disagree, we will consider your explanation as to why our comments are 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.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. 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.

Form 10-K for the Fiscal Year Ended September 27, 2008

Financial Statements, page 77

Note 2. Significant Accounting Policies, page 83

Goodwill, page 87

1. Your disclosure that you perform your annual impairment tests at the beginning of the fourth quarter of each fiscal year using the balance sheet as of the end of the third fiscal quarter may be confusing. Please tell us and revise in future filings to clarify whether you perform your annual impairment tests of goodwill as of the end of the third quarter. Tell us whether you would record any impairment calculated as a result of these tests in the third quarter or the fourth quarter of the fiscal year. Refer to paragraph 26 of SFAS 142.

Form 10-Q for the Quarterly Period Ended December 27, 2008

Financial Statements, page 4

Note 6. Goodwill and Intangible Assets, page 10

2. We note that you determined the fair value of your reporting units using a weighting of the Income (discounted cash flow), Market and Transaction approach valuation methodologies. We further note that the disclosure in Note 2 of your September 27, 2008 Form 10-K only refers to the discounted cash flow method. Please tell us whether you revised the methods you use to determine the fair value of your reporting units and, if so, why.
3. We note that you have not completed the Step 2 analysis for the CLC reporting unit. Please tell us and in future filings, please disclose the reasons for not completing the impairment testing as required by paragraph 47(c) of SFAS 142.
4. We note that as of December 27, 2008, you had net property and equipment of \$102.5 million and intangible assets of \$25 million. Given that there was a trigger in the quarter that caused you to test goodwill for impairment, please discuss your analysis and conclusions regarding whether or not you were required to also test your property and equipment and intangible assets for recoverability pursuant to SFAS 144. Please refer to paragraph 8 of SFAS 144.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 22

Application of Critical Accounting Policies, page 23

5. In the interest of providing readers with a better insight into the judgments made by management when accounting for the impairment of goodwill, please tell us and in future filings consider disclosing the following:
- The reporting unit level at which you test goodwill for impairment and your basis for that determination.
 - Each of the valuation methodologies used to value goodwill - if multiple approaches are used, including sufficient information to enable a reader to understand how each of the methods used differ, the assumed benefits of a valuation prepared under each method, and why management selected these methods as being the most meaningful for the company in preparing the goodwill impairment analyses.
 - If you used multiple approaches, explain how you weight each of the methods used including the basis for that weighting.
 - A qualitative and quantitative description of the material assumptions used and a sensitivity analysis of those assumptions based upon reasonably likely changes.
 - If applicable, how the assumptions and methodologies used for valuing goodwill in the current year have changed since the prior year highlighting the impact of any changes.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provides any requested information. Detailed letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

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 all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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.

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In connection with responding to our comments, please provide, in writing, a 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Kate Tillan, Assistant Chief Accountant, at (202) 551-3604 or me at (202) 551-3671 if you have questions regarding comments on the financial statements and related matters.

Sincerely,

Martin James
Senior Assistant Chief Accountant