



DIVISION OF
CORPORATION FINANCE

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

July 7, 2011

Via E-mail

Michael Morehead
General Counsel
Ambarella Corporation
2975 San Ysidro Way
Santa Clara, CA 95051

**Re: Ambarella, Inc.
Registration Statement on Form S-1
Filed June 10, 2011
File No. 333-174838**

Dear Mr. Morehead:

We have reviewed your registration statement 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 by amending your registration statement and providing the requested information. 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 registration statement and the information you provide in response to these comments, we may have additional comments.

Ambarella, Inc., page 1

1. Please provide us independent, objective support for your statements of leadership here and throughout your document, including your beliefs that you are a “leading provider” of semiconductor processing solutions and of video processing solutions for hybrid cameras and of your “leadership position” and “leading technology.” Please also provide us support for your belief that your technology allows you to enter new markets efficiently and cost effectively.
2. Please tell us the objective criteria used to determine which entities to identify in your prospectus, such as in the fourth paragraph of this section, and tell us whether any other entities satisfy these criteria. If you elect to highlight customers in your summary, please provide equally prominent disclosure of the substance of the first risk factor on pages 8 and 14.

Our Competitive Strengths, page 3

3. We note your disclosure on page 4 that your close relationships with leading ODMs and OEMs provide you with insight into product roadmaps and trends. Please provide equally prominent disclosure of the limitations discussed on the top of page 9, such as your limited visibility on customer demand or whether your customers' products will be commercially successful.

Comparison of the Fiscal Years . . . , page 46

4. We note the variances in income (loss) from operations and net income (loss) during the periods presented. Under separate captions, please expand your discussion and analysis to explain clearly to investors the reasons for the variances in your income (loss) from operations and net income (loss) for the periods presented. Also disclose any known material trends affecting your operating and net income for the periods presented. Refer to Item 303(b) of Regulation S-K.

Provision (Benefit) for Income Taxes, page 47

5. We see the significance of the benefit from lower foreign tax rates on the provision for income taxes. Please consider providing disclosures to explain in greater detail the impact on your effective income tax rates and obligations of having proportionally higher earnings in countries where you have lower statutory tax rates. You should consider explaining the relationship between the foreign and domestic effective tax rates in greater detail. It appears as though separately discussing the foreign effective income tax rates is important information necessary to understanding your results of operations. We refer you to Item 303(a)(3)(i) of Regulation S-K and Section III.B of SEC Release 33-8350.

Liquidity and Capital Resources, page 50

6. If significant to an understanding of your liquidity, please clarify the amount of cash and cash equivalents held outside of the U.S. Also, describe or refer to the description in Note 11 of the potential consequences if such amounts were repatriated. We refer you to Item 303(a)(1) of Regulation S-K and Section IV of SEC Release 33-8350.

Critical Accounting Policies and Significant Management Estimates, page 53

Stock-Based Compensation, page 54

7. Please tell us when discussions were initiated with your underwriter(s) about possible offering price ranges and provide us a history of those discussions. We will delay final assessment of stock-based compensation pending inclusion of the estimated IPO price in the filing.

8. Please reconcile for us management's most recent fair value per share determination of \$1.96 to the current estimated IPO price per share. Explain and quantify factors responsible for any significant differences between the two amounts.
9. In this regard, we note that the estimated per share fair value increased only \$.04 per share from \$1.92 to \$1.96 between February 2010 and March 2011. Please provide us a discussion of the factors and key assumptions leading management to conclude that per share fair value was essentially flat during that period.
10. We note that you apply "various" income and market approaches in valuing your ordinary shares. Please expand to describe the actual models applied during 2010 and to-date in 2011, including the rationale for any changes in the models applied. Please also clarify how you weighted the results when applying more than one approach.
11. As a related matter with respect to the income and market approaches described on page 56, please tell us, with a view toward expanded disclosure, the actual key assumptions that were the drivers of the per share valuations used for stock compensation purposes during 2010 and to-date in 2011. Also, describe any significant changes in those assumptions during the period. Please also respond with respect to the probability expected return model described on page 57.

Company Overview, page 59

12. So that investors may better understand your infrastructure market, please disclose what types of infrastructure products your solutions are designed into. In this regard, we note that you refer to the Cisco study regarding the growth in video traffic on the Internet. With a view towards enhanced disclosure, please tell us how and why the Cisco forecasts, which we would understand in the context of the growth in demand for Cisco's products such as switches and routers, relate to the increase in demand for the products that incorporate your solutions. Please also be more specific about where in the network your solutions reside.

Trends Impacting the Video Content Creation and Distribution Markets, page 60

13. Please provide us with copies of the International Data Corporation data cited in the third bullet point. Clearly mark the relevant sections that support the data you have included.
14. Regarding the market data cited in this prospectus, please tell us:
 - how you confirmed that the data reflects the most recent available information;
 - whether the data is publicly available;
 - whether you paid for the compilation of any data;

- whether any data was prepared for your use in the registration statement; and
- whether the sources of the data consented to your use of their names and data in the registration statement.

If you were affiliated with the preparation of any data, please ensure that your disclosure clearly indicates the nature of all such affiliations.

Products, page 66

15. Please revise where appropriate to explain the life cycle stage of your principal products. We note from your disclosure, such as on page 69, that your products typically have life cycles of six to 18 months for the camera market, representing approximately 75% of your revenue in 2011, and two to five years for the infrastructure market, representing approximately 25% of your revenue in 2011. Please also clarify if the former generations of your products are still generating a material amount of revenue.

Summary of Director Compensation, page 80

16. We note your disclosure in the first paragraph that you expect to implement an annual cash and equity compensation program for your non-employee directors. Please revise to clarify the material terms of your director compensation agreement following the completion of the offering, when known. Refer to Regulation S-K Item 403(k)(3).

Sales Representative Agreement . . . , page 102

17. Please revise to clarify any amounts outstanding during the periods presented. We note your disclosure of accounts receivable from WT Microelectronics Co., Ltd. on page F-25.

Description of Share Capital, page 106

18. Please revise to describe briefly any provision of your amended and restated memorandum and articles of association that would have an effect of delaying, deferring, or preventing a change in control. See Regulation S-K Item 202(a)(5). For example, we note your disclosure on pages 29-30.

Financial Statements, page F-1

19. Please update the financial statements when required by Rule 3-12 of Regulation S-X.

Note 1. Organization and Summary of Significant Accounting Policies, page F-7

Revenue Recognition, page F-8

20. You indicate that revenue from sales to OEMs and ODMs is “generally” recognized at shipment. Unless insignificant, please also describe the circumstances when revenue from sales to these types of entities is recognized at some other point in time.
21. With respect to logistics providers, please disclose the amounts of deferred revenues and deferred costs of sales included in the balance sheet line items for deferred revenue.

Note 11. Income Taxes, page F-21

22. We note the caption in the income tax reconciliation for the Non-U.S. foreign tax differential. Please tell us what the foreign rate differential represents in each of the years presented. As part of your response, explain how the foreign rate differential was determined in each fiscal year and identify the significant components of this item. Also, clarify for us whether there are any significant benefits from tax holidays or abatements.

Exhibit Index

23. Please file, or tell us why you did not file, the following as exhibits:
 - your lease agreements for your facilities in Taiwan and China, mentioned on page 73;
 - the voting agreement, mentioned on page 77;
 - your offer letters with Victor Lee, Didier LeGall, and Christopher Day, mentioned on page 92; and
 - your license agreement with Cadence Design Systems, Inc., mentioned on page 102.
24. We note that you intend to submit a request for confidential treatment for portions of Exhibit 10.8. We will provide any comments on your request in a separate letter. Please note that comments on your request must be resolved before we may accelerate the effectiveness of this registration statement.
25. To the extent there is a delay in requesting effectiveness of your registration statement, or there is any change, other than typographical, made to the financial statements, or there have been intervening events since the prior filing that are material to the company, please provide a currently dated and signed consent from your independent accountants with your next amendment.

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 Act of 1933 and

Michael Morehead
Ambarella, Inc.
July 7, 2011
Page 6

all applicable Securities 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Praveen Kartholy at (202) 551-3778 or Gary Todd, Accounting Reviewer, at (202) 551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Aslynn Hogue at (202) 551-3841 or Tim Buchmiller, Reviewing Attorney, at (202) 551-3635 with any other questions.

Sincerely,

/s/ Tim Buchmiller for

Amanda Ravitz
Assistant Director

cc (via E-mail): Aaron J. Alter, Esq. — Wilson Sonsini Goodrich & Rosati, P.C.