



DIVISION OF
CORPORATION FINANCE

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

August 2, 2012

VIA Secure E-mail

Feng-Ming Wang
Chief Executive Officer
c/o Ambarella Corporation
2975 San Ysidro Way
Santa Clara, CA 95051

**Re: Ambarella Corporation
Confidential Draft Registration Statement on Form S-1
Submitted July 11, 2012
CIK No. 0001280263**

Dear Mr. Wang:

We have reviewed your confidential draft 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 providing the requested information and either submitting an amended confidential draft registration statement or filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended confidential draft registration statement or filed registration statement, we may have additional comments.

1. Please supplementally provide us with any written materials that you or anyone authorized to do so on your behalf provides in reliance on Section 5(d) of the Securities Act to potential investors that are qualified institutional buyers or institutional accredited investors. Similarly, please supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

Graphics

2. We note graphics added to your document. With a view toward clarified disclosure, please tell us whether the end products you depict actually include the products you make. Please also revise to clarify the nature of the products you make; we note you do not produce cameras, camcorders or cable boxes. Also, please tell us, with a view toward

clarified disclosure, why you believe it is appropriate to show the photographs you do, given that the activities and people depicted appear unrelated to your company and your products. It is also unclear whether the photographs were taken by devices that incorporate your product.

Ambarella, Inc, page 1

3. It appears your business, end markets and some of your significant customers have changed significantly since your initial public filing last year, due at least in part to the “shifting consumer preferences” noted in your disclosure. Please revise to describe the material changes to your business and end markets since your initial filing. Please also make any necessary revisions to your disclosure beginning on page 70. See Regulation S-K 101(a)(1).

Industry Background, page 2

4. Regarding your disclosure in this section:
 - The summary should be a balanced presentation of the most significant aspects of your offering - not merely a recitation of only the positive aspects of the investment that only later addresses the risks to which you “may” be subject and then only at a high level and leaves balancing details for later in your document. As examples only, your disclosure here includes separately captioned, explained paragraphs detailing industry trends, how your solutions address those trends and your strengths and strategies while only including a one-sentence summary of risks you face. We also note that the summary of the risks does not appear to include several of the matters that you say have impacted and may in the future impact your performance and industry, including the proliferation of smartphones and changing consumer preferences; and
 - As a related matter, please ensure the favorable data you cite in the summary is balanced with equally prominent disclosure regarding any material unfavorable industry data of which you are aware. As one example only, you mention data projecting significant growth in the mirrorless camera market; however, you do not include data from the same report citing digital camera unit sale declines in 2011, volatility in that market and a projected overall decline in the digital camera market through 2016.

Please revise substantially.

5. We note the types of video capture devices mentioned in the first paragraph. Please revise to clarify in which of those devices your products are currently included. For example, are your products currently included in smartphones?

Third parties' assertions of infringement . . . , page 21

6. Please clarify the nature of the claims referenced in the disclosure you added to this and the following risk factor. For example, the disclosure added here indicates that your end customers have been sued due to the products they make. However, the sentence following the added disclosure says that you could be subject to significant liability or invalidation of intellectual property in lawsuits resulting from "such allegations." Given this, it is unclear whether the alleged infringement relates to your intellectual property or that of your customers. Also, to the extent your customers have sought or are seeking indemnification from you for claims made against them, please revise the disclosure on the top of page 22 accordingly.

Ability to Capitalize . . . , page 49

7. You disclose here indicates that you are "adding wireless communication functionality" into your solutions for the camera market. Your other disclosures, such as on pages 1 and 3, indicate that your solutions already enable wireless connectivity. Please reconcile.

Comparison of three months ended April 30, 2011 and April 30, 2012, page 52

8. Please revise to clarify the reasons underlying each of the material changes to the line items you mention. For example, you state that revenues increased due to higher infrastructure market sales and higher selling prices, but it is unclear why infrastructure market sales were higher or why the selling price of the product you note increased as compared to the prior year. Likewise, it is unclear what types of "current and new customers" adopted your products, what factors drove that adoption, and why revenues related to A2 and A5 SoCs decline. It is also unclear what impact the closure of Eastman Kodak's camera division or smartphone proliferation had on your revenues this period.

Fiscal Year 2012 Director Compensation, page 94

9. Please tell us why Dr. Hu is not listed in this table, given the date of his appointment, as mentioned on page 90, and number of shares he may acquire upon exercise of options he holds, as disclosed on pages 109-10. Also, given those options and date of appointment, please clarify how you determined that no directors received compensation during fiscal year 2012.

Summary Compensation Table, page 96

10. Footnote 3 refers only to cash bonuses for 2012 performance, but that note appears in the table for 2011 and 2012. Please clarify.

Outstanding Equity Awards at Fiscal 2012 Year-End, page 99

11. Please revise to clarify how you determined what numbers to include in each column of the table given that note 1 indicates all options may be exercised prior to vesting. Please also revise to clarify the significance of the “service-based vesting condition” if the options can be exercised prior to vesting. Also revise to clarify the nature of the early exercise feature as it relates to the options held by the executives included in this table as well as the directors listed on page 94. Further, please clarify how your disclosure on page 109 accounts for the ability of your affiliates to exercise their options early.

Certain Relationships . . . , page 107

12. Please update your disclosure here and on page 109 to be as of the most recent practicable date. Also, your disclosure here mentions multiple offer letters, but only one is described on page 107. Please revise or advise, as appropriate.
13. Please disclose the information required by Regulation S-K Item 404 regarding any affiliate who participated in the issuance of Series D preferred shares in January 2012. Please also file as exhibits the purchase agreement related to that issuance and the “Share Repurchase Agreement” referenced in the last full paragraph on this page.

Principal Shareholders, page 109

14. Please identify the natural persons who have or share voting and/or dispositive power with respect to the shares held by Wintech Microelectronics.

U.S. Federal Income Taxation, page 120

15. We note your disclosure addresses only “certain” material tax considerations. Please revise to include all material tax considerations. Please also revise the second full paragraph on page 122 to clarify how meeting only “certain” of the holding period requirements permits the tax treatment you mention.
16. Please clearly identify each material tax consequence counsel is opining upon. Given the disclaimer in the last full paragraph on page 122, it appears much of the disclosure in this section simply recites existing law without applying such law to the facts. Please refer to Section III.C.1 and 2 of Staff Legal Bulletin No. 19, available on our website at <http://sec.gov/interps/legal/cfslb19.htm>. Please also update the disclosure on page 122 regarding PFIC status “for the 2011 taxable year.”

Item 15. Recent Sales of Unregistered Securities, page II-1

17. From your disclosure on page II-2, it appears that only “certain” of the securities mentioned in paragraphs (1)-(3) were issued in reliance on the exemptions you cite.

Please revise to clarify on what exemption you relied in issuing the remainder of those securities.

18. Please reconcile your disclosures in paragraph (1) and on page F-5 regarding the number of shares acquired upon exercise of options.

Power of Attorney, page II-5

19. The first sentence states that “each person whose signature appears below” appoints Messrs. Wang and Laplante as his attorney-in-fact and agent. Given that Chenming Hu’s signature is the only one that appears after that paragraph, please clarify on what authority Mr. Laplante relied to sign on behalf of the directors listed on page II-4.

Exhibits

20. Please reconcile the last two sentences of your response to prior comment 23 with the second paragraph of the first risk factor on page 20.
21. We note Exhibit 8.1 and the reference to counsel and its opinion on page 120. Please file the consent of counsel.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in text searchable PDF files using the secure e-mail system we describe on our website at <http://www.sec.gov/divisions/corpfin/cfannouncements/cfsecureemailinstructions.pdf>.

Please use your Central Index Key, or CIK number, in your correspondence to us about your submission.

When you publicly file your amended registration statement and amendments on EDGAR in accordance with Section 106(a) of the JOBS Act, please:

- Attach each submission, including exhibits, to your amended registration statement as a separate Exhibit 99 document and clearly identify each confidential submission attached as an Exhibit 99 document (e.g., “Confidential Draft # 1”). Do not attach submissions marked to show changes from earlier submissions.
- Submit each item of correspondence you sent to us in connection with your confidential draft submissions, including your responses to our comments, as a separate “CORRESP” submission on EDGAR.

As you prepare correspondence to us in connection with your confidential draft registration statement, please keep in mind that we will expect you to submit that same correspondence on EDGAR so that we may publicly post filing review correspondence in

Feng-Ming Wang
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accordance with our December 1, 2011 policy (SEC Staff to Release Filing Review Correspondence Earlier). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Praveen Kartholy at 202-551-3778 or Gary Todd at 202-551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Mumford at 202-551-3637 or Geoff Kruczek at 202-551-3641 with any other questions.

Sincerely,

/s/ Geoffrey Kruczek for

Amanda Ravitz
Assistant Director