



DIVISION OF  
CORPORATION FINANCE

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

September 5, 2012

VIA E-mail

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

**Re: Ambarella Corporation  
Registration Statement on Form S-1  
Amendment No. 2 filed August 22, 2012  
File No. 333-174838**

Dear Mr. Wang:

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.

Graphics

1. We note your revisions in response to prior comment 2 and that the pictures "were not necessarily taken" with products you enable. If the pictures you included were not taken with products that include your solutions and those pictures are unrelated to your company and activities, it remains unclear why such pictures are included in this filing.

Industry Background, page 2

2. We note your response to prior comment 2; however, it continues to appear that your summary describes in large part only the positive aspects of your offering and business. We note, for example, the continued lengthy description of your solutions, products and strategies and the one-sentence bullet points regarding the risks you face. Please revise substantially.

3. We note the revised data included on page 2 in response to prior comment 2 and revisions on page 38. Please update your response to prior comment 14 in your letter to us dated July 11, 2012 to reflect the new data and new report you mention. Please also provide us a copy of this report, clearly marked to support the data you added to your document.
4. Your revisions in response to prior comment 3 imply that your products currently enable some types of smartphones and tablets. If that is not correct, please revise to eliminate any implication to the contrary.

#### Financial Statements

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

#### Exhibit 8.1

6. We note the opinion filed in response to prior comment 21 states that the discussion set forth under the heading Taxation “constitutes an accurate summary of the matters described therein.” Please ask counsel to provide a revised opinion that states the disclosure referenced in that section is the opinion of counsel, not merely an accurate summary. Please refer to Section III.B.2 of Staff Legal Bulletin No. 19, available on our web site at <http://sec.gov/interp/legal/cfslb19.htm>

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 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.

Feng-Ming Wang  
Ambarella Corporation  
September 5, 2012  
Page 3

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 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

cc: (via e-mail) Aaron J. Alter, Esq.