



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4561

May 10, 2016

Rouven Bergmann
Chief Financial Officer
Medidata Solutions, Inc.
350 Hudson Street, 9th Floor
New York, NY 10014

Re: Medidata Solutions, Inc.
Form 10-K for the year ended December 31, 2015
Filed February 29, 2016
File No. 001-34387

Dear Mr. Bergmann:

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 these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response to these comments, we may have additional comments.

Business

Backlog, page 5

1. We note you disclose subscription backlog related to your cloud-based offerings that will be recognized in the current year. Considering your subscription terms generally range from one to five years, tell us your consideration of disclosing the total amount of backlog, together with the portion thereof not reasonably expected to be filled within the current fiscal year. We refer you to Item 101(c)(1)(viii) of Regulation S-K.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Results of Operations, page 22

2. We note your reference to subscription bookings growth in your earnings call for the fourth quarter of fiscal 2015. Please tell us how you calculate this measure. To the

extent that the growth in total backlog is not reflective of your bookings growth, tell us what consideration you gave to including a discussion of bookings in your MD&A. Refer to Item 303(a) of Regulations S-K and Section III.B of SEC Release No. 33-8350.

Income Taxes, page 24

3. We note that your effective tax rate was impacted by federal and state research and development credits in fiscal 2015 and R&D credits and domestic production activities in fiscal 2014. Please tell us your consideration of providing additional disclosure that further explains those items that most significantly impacted your effective tax rate and whether they are expected to have an impact on your effective tax rate in the future. Please refer to Item 303(a)(3) of Regulation S-K and Section III.B of SEC Release No. 33-6835.

Consolidated Financial Statements

Notes to Consolidated Financial Statements

Note 1. Summary of Significant Accounting Policies

Software development costs, page F-10

4. We note your policy disclosure regarding internally developed software costs and that no internally developed software costs were capitalized during the periods presented. Please describe for us the development process related to your internal-use software, highlighting recently developed offerings and added functionality, and explain why there was no development costs capitalized during the periods presented. Also, describe for us how you apply the guidance in ASC 350-40-25 and what consideration was given to disclosing your policies for internal-use software development costs particularly since your software is provided in a software-as-a-service platform.

Stock-Based Compensation, page F-10

5. You disclose that you use the simplified method pursuant to SAB Topic 14 for estimating the expected exercise data to estimate the expected life of options. Considering your IPO was in 2009, please explain to us why you do not have sufficient exercise data as of December 31, 2015. Tell us your expectations as to when you believe you will have such data sufficient to estimate the expected life of options.

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

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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.

You may contact Joyce Sweeney, Staff Accountant, at (202) 551-3449 if you have questions regarding comments on the financial statements and related matters. If you have any other questions, please contact Edwin Kim, Staff Attorney, at (202) 551-3297 or Jan Woo, Legal Branch Chief, at (202) 551-3453. If you require further assistance, do not hesitate to contact me at (202) 551-3499.

Sincerely,

/s/ Kathleen Collins

Kathleen Collins
Accounting Branch Chief
Office of Information Technologies
and Services