



DIVISION OF
CORPORATION FINANCE
Mail Stop 3030

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

April 16, 2009

John J. Ehren
Senior Vice President and Chief Financial Officer
Key Technology, Inc.
150 Avery Street
Walla Walla, Washington 99362

Re: Key Technology, Inc.
Form 10-K for the fiscal year ended September 30, 2008
Filed December 12, 2008
File No. 000-21820

Dear Mr. Ehren:

We have reviewed your letter dated March 31, 2009 and have the following comments. Where indicated, we think you should revise your document in future filings in response to these comments. If you disagree, we will consider your explanation as to why our comment is 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 on 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 30, 2008

Financial Statements and Supplementary Data, page 34

Notes to Consolidated Financial Statements, page 43

6. Investment in Joint Venture, page 50

1. We note your response to prior comment 3 in which you use income averaging as outlined in Rule 1-02.w of Regulation S-X. However, please note that while income averaging may be used where income of the registrant and its subsidiaries consolidated for the most recent fiscal year is at least ten percent lower than the average of the income for the last five fiscal years, it is not appropriate to use income averaging where a registrant has incurred a loss for the most recent fiscal year. Accordingly, please tell us how this fact impacts your conclusions that audited financial statements of InspX were not required pursuant to Rule 3-09 of Regulation S-X. Please provide us with an updated income significance test (that is not based on income averaging) for the year ended September 30, 2006 for your InspX joint venture equity investee.

Item 11. Executive Compensation, page 11

Compensation Discussion and Analysis, page 16

2. We note your response to comment 7 of our letter dated February 25, 2009. The disclosure on pages 18 and 19 primarily addresses the policies governing the allocation of incentive compensation but does not provide the type of analytical discussion that is essential to understanding how and why the Compensation Committee derived the differing form and levels of compensation paid to your named executive officers. We would expect to see an enhanced discussion of the qualitative and quantitative factors evaluated for each executive and how the Compensation Committee's assessment of these factors resulted in actual compensation paid.

Annual Base Cash Compensation, page 17

3. We note your response to comment 8 of our letter dated February 25, 2009. We continue to believe that you can enhance the discussion of your benchmarking methodologies to address the manner in which the Compensation Committee "...tak[es] into account [comparable executives'] business experience, their experience from serving on other [boards], publicly available information from news sources, and broad-based third-party surveys containing information about companies of similar size...." Please consider the guidance contained in

Interpretation 118.05 of the Regulation S-K section of our publicly-available Compliance and Disclosure Interpretations when formulating your response.

Annual Performance-Based Cash Compensation, page 17

4. We note your response to comment 9 of our letter dated February 25, 2009. Without more information, we are not able to conclude that you have made a reasonable showing that disclosure of the corporate goals tied to payouts under the annual performance-based cash compensation program would cause substantial competitive harm. Please provide a more detailed discussion that analyzes the nexus between disclosure of the financial and operational objectives and the specific manner in which competitors could use the information to obtain the competitive advantages cited.

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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 cover letter with your response that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please submit your cover letter on EDGAR. Please understand that we may have additional comments after reviewing your responses to our comments.

Please contact Jay Webb at (202) 551-3603 or me at (202) 551-3554 if you have any questions regarding comments on the financial statements. Please contact Celia Soehner at (202) 551-3463 or Jay Ingram, Special Counsel, at (202) 551-3397 if you have questions on any other comments.

Sincerely,

Angela Crane
Accounting Branch Chief