



DIVISION OF
CORPORATION FINANCE
Mail Stop 3030

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

February 25, 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
Form 10-Q for the quarterly period ended December 31, 2008
Filed February 9, 2009
File No. 000-21820

Dear Mr. Ehren:

We have reviewed your filing 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

Form 10-K Facing Page

1. Please tell us why you have not denoted the class of securities registered in the Form 8-A filed on January 16, 2008 under "Securities registered pursuant to

Section 12(b) of the Act.”

Item 1. Business

Sales and Marketing, page 8

2. Your disclosure on page 9 indicates that you had relationships with one or more customers that individually accounted for more than 10% of your total net sales. Tell us whether you are substantially dependent on any customer relationships and whether any relationships accounted for 10% or more of your 2008 revenues. See Item 101(c)(vii) of Regulation S-K. If so, please include any attendant risk factors and advise if you considered including in your Form 10-K a description of your contractual arrangements with these customers and filing your agreements with them as exhibits. See Item 601(b)(10)(ii)(B) of Regulation S-K.

Financial Statements and Supplementary Data, page 34

Notes to Consolidated Financial Statements, page 43

6. Investment in Joint Venture, page 50

3. We note that in July 2004 you entered into a joint venture with Peco LLC to form InspX LLC for the product development, manufacturing and sales of x-ray inspection systems and the investment in the joint venture was being accounted for under the equity method of accounting. We also see for the period ended September 30, 2006, your equity in earnings of the joint venture was a loss of approximately \$389,000. Tell us how you concluded that audited financial statements of InspX were not required pursuant to Rule 3-09 of Regulation S-X. Please provide us with the investment and income significance tests outlined at Rule 1-02(w) of Regulation S-X at and for the year ended September 30, 2006 for your InspX joint venture equity investee.

Item 11. Executive Compensation, page 11

Compensation Discussion and Analysis

4. Please provide clear disclosure that addresses how each compensation component and your decisions regarding these elements fit into your overall compensation objectives and their impact regarding other elements. See Item 402(b)(1)(vi) of Regulation S-K. Clarify whether you review each element of compensation independently or whether you consider each element collectively with the other elements of your compensation program when establishing the various forms and levels of compensation. In doing so, please provide sufficient quantitative or qualitative disclosure as appropriate of the analyses underlying the Committee's decision to make specific compensation awards and how decisions regarding one

type of award motivate the Committee to award or consider other forms of compensation. Explain and place in context how you considered each element of compensation and why determinations with respect to one element may or may not have influenced the Committee's decisions with respect to other allocated or contemplated awards.

5. Please ensure that your compensation discussion and analysis precedes your Summary Compensation Table. Refer to the first paragraph under the heading "Format" in the Staff Observations in the Review of Executive Compensation Disclosure, available on our website at <http://www.sec.gov/divisions/corpfin/guidance/execcompdisclosure.htm>.

Cash and Non-Cash Compensation Paid to Certain Executive Officers, page 11

6. Please disclose the compensation committee's reasons for the "performance-based" and "service-based" restricted stock awards granted to Mr. Camp, as disclosed on page 13. We note that these awards were made "[p]ursuant to commitments made at the time of [Mr. Camp's] hire." Consider the need to file any compensatory agreement made with Mr. Camp under Item 601(b)(10)(iii) of Regulation S-K. In addition, it is not clear why you reported this amount in column (g) of your Grants of Plan-Based Awards table. Given that this award appears to be service-based without an incentive component, the appropriate place to report this award may be in the "All other Stock Awards" column. Please advise.

Compensation Discussion and Analysis, page 16

7. You state that the compensation committee considers "the experience level and contributions of the individual executive officer, the role and responsibilities of the executive officer, and other factors" when making compensation decisions. Please provide additional disclosure to discuss and analyze how individual performance contributes to actual compensation for named executive officers. For example, disclose the elements of individual performance, both quantitative and qualitative, and specific contributions by named executive officers that the compensation committee considers in its evaluation. If applicable, please also discuss how these elements are weighted and factored into specific compensation decisions. See Regulation S-K Item 402(b)(2)(vii).

Annual Base Cash Compensation, page 17

8. We note that one factor the compensation committee considers in executive compensation decisions is "perceived changes in market rates of pay for comparable executives." It appears that you utilize some form of benchmarking for purposes of making executive compensation decisions. Please clarify the

extent to which compensation decisions are derived from a comparison to peer companies or otherwise describe your methodologies for utilizing comparative information when implementing your compensation policies or making specific compensation awards. If you have benchmarked different elements of your compensation against different benchmarking groups, please identify the companies that comprise each group., discuss where actual payments and awards fall within this targeted range, and to the extent that actual compensation was outside of this range, provide appropriate corresponding disclosure. Refer to Item 402(b)(2)(xiv) of Regulation S-K.

Annual Performance-Based Cash Compensation, page 17

9. We note that you have not disclosed the “certain financial performance goals” to be achieved in order for your named executive officers to earn their respective annual cash incentive payments. Please provide such disclosure in your future filings, as applicable. To the extent that you believe disclosure of such information, on a historical basis, would result in competitive harm such that the information could be excluded under Instruction 4 to Regulation S-K Item 402(b), please provide us with a detailed explanation supporting your conclusion. If it is appropriate to omit specific targets or performance objectives, you are required to provide appropriate disclosure pursuant to Instruction 4 to Item 402(b). Refer also to Question 118.04 of the Regulation S-K Compliance and Disclosure Interpretations available on our website at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>. In discussing how difficult or likely it will be to achieve the target levels or other factors, you should provide as much detail as necessary without disclosing information that poses a reasonable risk of competitive harm.

Stock Incentive Compensation, page 19

5. We believe that investors will benefit from an expanded analysis of how you arrived at and why you paid each particular level of compensation for 2007. For example, we note minimal discussion and analysis of how the Committee determined specific stock option awards as disclosed on page 19. We would expect to see a more focused discussion that provides substantive analysis and insight into how the Committee made actual payout determinations for the fiscal year for which compensation is being reported. Refer to paragraphs (b)(1)(iii) and (v) of Item 402 of Regulation S-K. Please understand that discussion of the various items of corporate and individual performance that were considered by the Compensation Committee must be accompanied by a complete qualitative and quantitative discussion of how the Committee determined to award each specific form and level of compensation in 2007. You should provide complete discussions of the specific factors considered by the Committee in ultimately approving this and other forms of compensation, including the reasons why the

Committee believes that the amounts paid to each named executive officer are appropriate in light of the various items it considered in making specific compensation decisions.

Exhibits 31.1 and 31.2

10. We note that your Section 302 certifications cite to your “Annual Report.” Section 302 certifications must be included in your filing exactly as set forth in Regulation S-K Item 601(b)(31). In future filings, please do not replace the word “report” in these paragraphs with “annual report” or “quarterly report,” as applicable, even where the references correspond to the correct periodic report.

Form 10-Q for the Quarterly Period ended December 31, 2008

Exhibit 31

11. We note that your annual report contains management’s internal control report as required by Item 308 of Regulation S-K. As such, your certifications should include the introductory language in paragraph 4 of the certification that refers to the certifying officers' responsibility for establishing and maintaining internal control over financial reporting for the company. Please file an amendment to the Form 10-Q filed on February 9, 2009, which includes new, corrected certifications. You may provide an abbreviated amendment that consists of a cover page, explanatory note, signature page and paragraphs 1, 2, 4 and 5 of the certification.
12. Revise to clarify, if true, that your officers concluded that your disclosure controls and procedures are also effective to ensure that information required to be disclosed in the reports that you file or submit under the Exchange Act is accumulated and communicated to your management, including your chief executive officer and chief financial officer, to allow timely decisions regarding required disclosure. See Exchange Act Rule 13a-15(e).

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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.

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 all information required under the Securities Exchange Act of 1934 and that they have provided all information

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investors require for an informed investment decision. 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.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filings;
- 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

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