



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

March 11, 2009

VIA U.S. MAIL AND FAX (952) 937-4101

Susan E. Knight
Chief Financial Officer
MTS Systems Corporation
14000 Technology Drive
Eden Prairie, Minnesota 55344

**Re: MTS Systems Corporation
Form 10-K for the year ended September 27, 2008
Filed November 25, 2008
File No. 000-09459**

Dear Ms. Knight:

We have reviewed your filings and have the following comments. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your document. Where indicated, we think you should revise your document 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 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 year ended September 27, 2008

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 15

Critical Accounting Policies, page 26

1. We see that you have included revenue recognition as a critical accounting policy, however, your current disclosure does not provide investors with any insight as to the related judgments and estimates. When preparing future filings consider enhanced discussion and analysis of your critical accounting estimates and assumptions related to revenue recognition that presents your analysis of the uncertainties involved in applying the guidance in SAB 104. We refer you to SEC Release Number 33-8350.

Item 9A. Controls and Procedures, page 31

2. We note your disclosure that your "management, including [your] Chief Executive Officer and Chief Financial Officer, concluded that the Company's disclosure controls and procedures are effective in ensuring that information required to be disclosed by the Company in reports it files or submits under the 1934 Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC." Revise in future filings 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).
3. Please revise your disclosure in future filings to include a statement that your registered public accounting firm that audited the financial statements included in the annual report has issued an attestation report on the registrant's internal control over financial reporting, we refer you to Item 308(a)(4).

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 understand that we may have additional comments after reviewing your amendment and responses to our comments.

Susan E. Knight
MTS Systems Corporation
March 11, 2009
Page 3

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 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 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.

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.

You may contact Andri Boerman, Staff Accountant, at (202) 551-3645 or me at (202) 551-3640 if you have any questions regarding these comments. In this regard, do not hesitate to contact Angela Crane, Branch Chief, at (202) 551-3554.

Sincerely,

Julie Sherman
Reviewing Accountant