UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the **Securities Exchange Act of 1934**

Date of report (Date of earliest event reported) August 2, 2005

Mercury Computer Systems, Inc. (Exact Name of Registrant as Specified in Charter)

Massachusetts (State or Other Jurisdiction of Incorporation)

000-23599 (Commission File Number)

04-2741391 (IRS Employer Identification No.)

199 Riverneck Road, Chelmsford, Massachusetts (Address of Principal Executive Offices)

01824 (Zip Code)

Registrant's telephone number, including area code (978) 256-1300

N/A (Former Name or Former Address, if Changed Since Last Report)

| | ck the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following |
|------|--|
| prov | isions (see General Instruction A.2. below): |
| | Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425) |
| | Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12) |
| | Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b)) |
| | Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)) |

Item 7.01 Regulation FD Disclosure.

The management of Mercury Computer Systems, Inc. ("Mercury") will present an overview of the Company's business on Tuesday, August 2, 2005 at the Adams Harkness 25th Annual Summer Seminar. Attached as Exhibit 99.1 to this Current Report on Form 8-K (the "Report") is a copy of the slide presentation to be made by Mercury at the conference.

This information is being furnished pursuant to Item 7.01 of this Report and shall not be deemed to be "filed" for the purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section and will not be incorporated by reference into any registration statement filed by Mercury under the Securities Act of 1933, as amended, unless specifically identified as being incorporated therein by reference. This Report will not be deemed an admission as to the materiality of any information in this Report that is being disclosed pursuant to Regulation FD.

Please refer to page 2 of Exhibit 99.1 for a discussion of certain forward-looking statements included therein and the risks and uncertainties related thereto.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

MERCURY COMPUTER SYSTEMS, INC.

Date: August 2, 2005

By: /s/ Joseph Hartnett

Name: Title: Joseph M. Hartnett Vice President, Controller and Chief Accounting Officer EXHIBIT INDEX

Exhibit No. Description

Exhibit 99.1 Presentation Materials dated August 2, 2005 *

* Filed herewith.

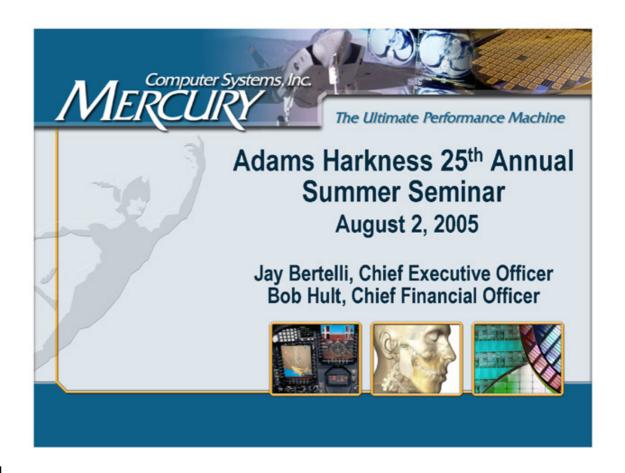


EXHIBIT 99.1



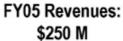


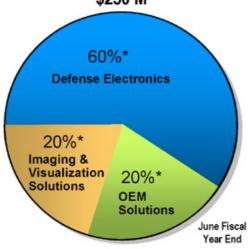
This presentation contains certain forward-looking statements, as that term is defined in the Private Securities Litigation Reform Act of 1995, including those relating to anticipated fiscal 2006 business performance and the result of acquisitions. You can identify these statements by our use of the words "may," "will," "should," "plans," "expects," "anticipates," "continue," "estimate," "project," "intend," and similar expressions. These forward-looking statements involve risks and uncertainties that out drause actual results to differ materially from those projected or anticipated. Such risks and uncertainties include, but are not limited to, general economic and business conditions, including unforeseen economic weakness in the Company's markets, effects of continued geo-political unrest and regional conflicts, competition, changes in technology and methods of marketing, delays in completing various engineering and manufacturing programs, changes in customer order patterns, changes in product mix, continued success in technological advances and delivering technological innovations, continued funding of defense programs, timing of such fanding, market acceptance of the Company's products, shortages in components, production delays due to performance quality issues with outsourced components, failure of the parties to satisfy the closing conditions related to the Echotek Corp. acquisition, inability to fully realize the expected benefits from acquisitions or delays in realizing such benefits, challenges in integrating acquired businesses and achieving anticipated symergies, difficulties in retaining key employees and customers, and various other factors beyond the Company's control. These risks and uncertainties also include such additional risk factors as are discussed in the Company's recent flings with the U.S. Securities and Exchange Commission, including its Quarterly Report on Form 10-Q for the quarter ended March 31, 2005. The Company cautions readers not to place undue reliance upon any such forward-lo

References by the Company to non-GAAP operating income and non-GAAP earnings per share refer to costs and expenses or earnings per share. The Company's management uses non-GAAP operating income and earnings per share. The Company's management uses non-GAAP operating income, and associated non-GAAP per income (which is the basis for non-GAAP earnings per share) to make operational and investment decisions, and the Company's pelieves that they are among several useful measures for an enhanced understanding of its operating results. Excluding the equity compensation cost from GAAP operating income will enable investors to perform a meaningful companison of the Company's operating results to prior periods. In these prior periods, the Company's GAAP financial results were not required to include expenses associated with stock option compensation, and now these expenses will be included within operating expenses in the GAAP presentation. The Company also believes that providing non-GAAP earnings per share affords investors a view of earnings that may be more easily compared to peer companies. The Company believes these non-GAAP measures will aid investors' overall understanding of its financial results by providing a higher degree of transparency for certain expenses, particularly those related to equity-based compensation costs, as well as providing a level of disclosure that will help investors understand how the Company plans and measures its own business. However, non-GAAP net income should be construed neither as an alternative to GAAP non-GAAP measures of the have a material impact on the Company's results of operations. Therefore, management does, and investors should, use non-GAAP measures in conjunction with the Company's reported GAAP results.

Company Overview







- Founded in 1981
- Leading provider of innovative, engineered computing solutions for computeintensive applications
- Office locations in U.S., UK, France, Germany and Japan; R&D centers in U.S., France, and Germany
- 830 employees worldwide;
 350 engineers
- Investment in knowledge of customer applications

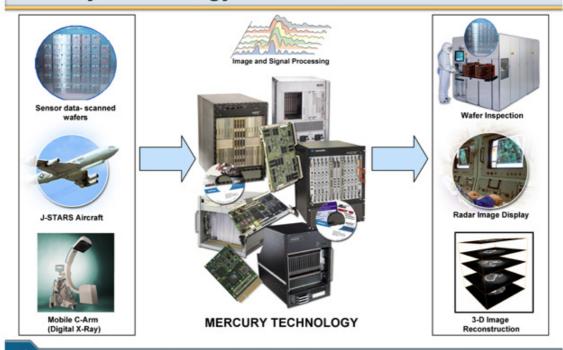
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Adams Harkness 25th Annual Summer Seminar 8/2/05

^{*}Approximate FY05 revenue composition

Mercury Technology in Action





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Defense Electronics Group



Deployed across all environments

- Air, land, and sea platforms
- Commercial, rugged, and conduction- and spraycooled configurations

Provide full life-cycle support

 From R&D through deployment

Positioned for growth

 Driving innovation for the next-generation applications



Representative

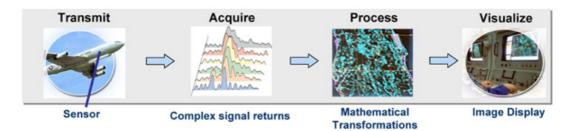
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DEG Value Proposition



Real-time signal and image processing applications

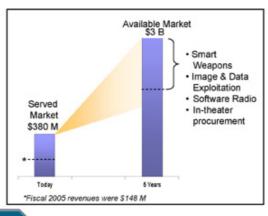


- Sensor streaming
- Scalable
- Real time
- Embedded (real estate, environmental, cooling constraints)

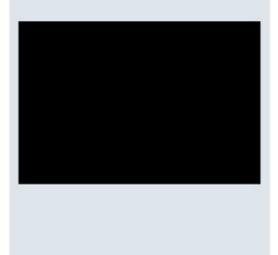
DEG Growth Drivers



- DoD transformation agenda/ISR initiative
- Expansion to lower echelons
- Network Centric Warfare

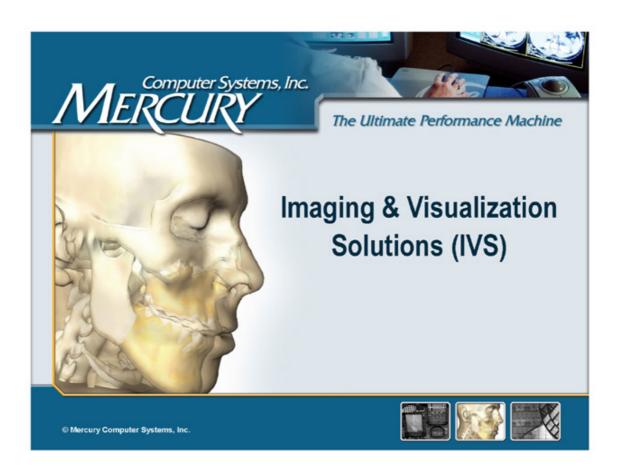


\$3 Billion Market Opportunity



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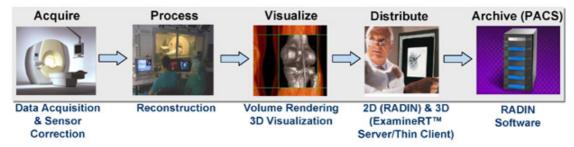
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IVS Value Proposition



Increase data throughput, dramatically accelerating imaging workflow



- Image reconstruction, processing, and visualization
- All steps from scanner output to end user
- Embedded components and integrated solutions
- Broad end-to-end medical systems OEM Solution portfolio

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Market Opportunities

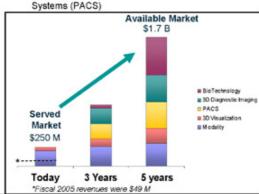




IVS Growth Drivers



- · Growing need for intensive computing capabilities
 - Increased volume of data
 - Enhanced image accuracy
 - Real-time 3D: interventional
- Market opportunities
 - Diagnostic Medical Imaging
 - Biotechnology
 - Geosciences
 - Picture Archiving and Communications Systems (PACS)



\$1.7 Billion Market Opportunity



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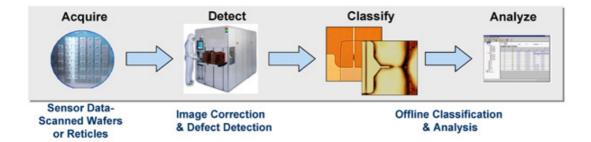
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OSG Value Proposition



Accelerating customers' advanced algorithms to market



- Searching for defects on silicon wafers or reticles
- Scalable compute, streaming I/O, and interconnect bandwidth
- Enabling customer algorithm performance enhancements
- Software-programmable solutions

OSG Markets



Delivering specialized processing solutions for demanding commercial OEM applications

Semiconductor capital equipment market

- Wafer and reticle inspection
 - Systems that process streaming data to find defects
- Mask writing
 - Systems that generate patterns to write to semiconductor and flat-panel masks

Communications computing market

- Wireless infrastructure
 - Next-generation packet and signal processing solutions

OSG Growth Drivers

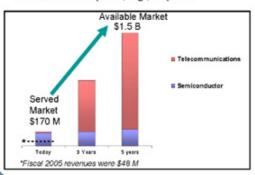


Semiconductor capital equipment solutions

- Processing needs continue to outpace mainstream computing
 Data rates and algorithm complexity increase
- New applications on the horizon
- Subject to market cyclicality

· New market opportunities in telecommunications

- Industry emerging from downturn
- Equipment makers rely more on external innovation
- New standards will replace proprietary implementations in data and user plane, e.g., RapidIO®





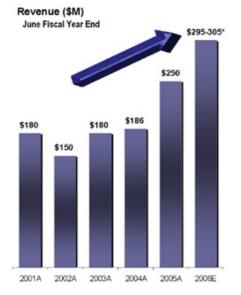
\$1.5 Billion Market Opportunity

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Value Creation: Growth

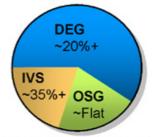




*Per Company guidance, July 28, 2005 earnings press release

2005: Record revenues

2006: Projected revenue growth 20% (at midpoint of guidance range)



FY06 projected growth rates

R

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Fiscal 2005 Strong Performance



| | FY Ended June 30 | | | |
|----------------|------------------|------|-------|--|
| (\$M) | 2005 | 2004 | | |
| Revenues | \$ 250.2 | \$ | 185.6 | |
| Gross Margin % | 66.5% | | 66.2% | |
| Op. Income | ₹42.5₹ | | 31.6 | |
| Net Income | \$ 30.2 | \$ | 22.9 | |
| EPS (diluted) | \$ 1.25 | \$ | 1.03 | |

- Fiscal 2005 record revenues, 35% YOY growth
- Fiscal 2005 record operating profit, 32% YOY growth

Fiscal Year 2006 Guidance



| | Fiscal Year Ending June 30, 2006 | | |
|-------------------------|----------------------------------|-------------|--|
| | GAAP | Non-GAAP | |
| Revenues | \$295-305 | \$295-305 | |
| Gross Margin Percent | 66-67% | 66-67% | |
| Operating Income | 12% | 16% | |
| EPS | \$0.97-1.02 | \$1.35-1.40 | |

- Impact of equity-based compensation costs related to FAS 123(R) excluded from Non-GAAP
- Acquisition-related amortization included in GAAP and Non-GAAP of approximately \$6 M.

- Notes:
 1) Figures in millions, except percent and per share data which includes adjustment for contingent convertibles
 2) Company guidance, July 28, 2005 Q4 earnings press release

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Q1 Fiscal 2006 Guidance



| | Quarter Ending September 30, 2005 | | |
|------------------|-----------------------------------|-------------|--|
| | GAAP Non-GAAP | | |
| Revenues | \$60-63 | \$60-63 | |
| Operating Income | 6% | 10% | |
| EPS | \$0.11-0.13 | \$0.18-0.20 | |

- Impact of equity-based compensation costs related to FAS 123(R) excluded from NON-GAAP
- Acquisition-related amortization included in GAAP and Non-GAAP of approximately \$1 M.

- Notes:
 1) Figures in millions, except percent and per share data which includes adjustment for contingent convertibles
 2) Company guidance, July 28, 2005 Q4 earnings press release

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Timeless Business Model



| | FY04 | FY05 | Guidance FY06* | Timeless Business Model |
|------------------------|------|------|-------------------|----------------------------|
| Revenue | 100% | 100% | 100% | 100% |
| Gross Margin | 67% | 66% | 66-67% | 66-67% |
| SG&A | 30% | 29% | | 29-30% |
| R&D | 21% | 20% | | 20-21% |
| Income from Operations | 17% | 17% | 16% | 16-18% |

Notes:

- 1) Acquisition-related amortization of intangibles ~ 1%, ~1%, ~2% FY04, FY05, FY06, resp.
- FY06 Non-GAAP guidance per July 28,2005 earnings call. FY06 GAAP Income from operations 12%

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Strong Balance Sheet



Historically strong balance sheet

Supports open innovation growth agenda

| (Quarter ended June 30, 2005) | | |
|-------------------------------|-------|--|
| Cash and Equivalents | \$228 | |
| Total Current Assets | \$242 | |
| Total Assets | \$377 | |
| | | |
| Total Debt | \$136 | |
| Total Liabilities | \$179 | |
| | | |
| Stockholders' Equity | \$198 | |

Growth through Open Innovation



Extend Mercury's capabilities with partnerships, alliances, and acquisitions



- Focused on Intellectual Property (IP), technology "fit"
- Accretive within first year
- Consider the size of the deal
- Integrate into the company

Five recent acquisitions

 TGS Group, Advanced Radio Corporation, Momentum Computer, Inc., SoHard AG, Echotek Corp. (pending)

- IBM, NVIDIA Corporation, Ziehm Imaging,

Expanding list of alliances/partners

Massachusetts General Hospital (MGH)











MRCY Summary



- Strong competitive position in attractive and growing markets
- Diversified revenue base defense and commercial
- Straightforward operating model and financial structure
- Strong balance sheet, operating cash flow with significant financing flexibility
- Open innovation strategy through partnerships and acquisitions to enhance capability to deliver solutions across target markets

Sustain a 25% or better long-term revenue growth rate

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www.mc.com

NASDAQ: MRCY

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