Embedded Market Forecasters Study Finds Commercial Middleware Reduces Cost and Risk

-- Research uncovers true costs of using custom communications and integrated middleware in embedded applications --

FRAMINGHAM, Mass. – December 7, 2009 – Embedded Market Forecasters, the premier market intelligence and advisory firm for the embedded technology industry, today released a report titled "Choosing Between Commercial and 'Roll Your Own' Embedded Communication Integration Middleware" and survey results that provide a cost-based evaluation framework for embedded developers evaluating the relative merits of developing in-house, or "Roll Your Own" (RYO), middleware or using a commercial alternative. The study marks the first time that ROI metrics have been developed from comprehensive data derived from an extensive survey of embedded developers. The findings show that middleware selection can have a very significant impact on a project's cost, timeliness, risk and performance.

The Embedded Market Forecasters report is based on a sample of 166 developers that identified themselves as communication middleware users (out of 476 total survey respondents). Slightly over half, or 55.6% used in-house, "Roll-Your-Own" solutions and the remainder comprised commercial communication middleware users, including both embedded and IT communication middleware products. Applications included avionics, automotive, medical, telecom, Datacom, electronic instrumentation, industrial automation, military and consumer electronics, among others. The total cost of application development for each project was estimated by multiplying the average development project time to market by the software development team size and average monthly industry cost per developer.

Commercial communications middleware consists of embedded vendors and IT middleware vendors selling into the embedded space. There is a significant difference in the comparative data; however, for purposes of this study they were combined under the "commercial" category as they together comprise the market. In addition to comparing the results of commercial and in-house, "Roll Your Own" middleware, EMF also compared the results of these two categories with those of the two most popular vendors of embedded integration middleware, Objective Interface Systems (OIS: www.ois.com) and Real-Time Innovations (RTI: www.rti.com).

According to EMF's research:

- **Total Cost of Development**: The average cost of application development was substantial for projects using RYO middleware ($1.61M), most commercial solutions ($1.34M), and OIS ($1.49M); however, projects using RTI enjoyed much lower costs ($0.89M).
- **Average Cost Overrun:** The average cost overrun was similar for projects using RYO (11.3%) and commercial (10.1%) middleware. Projects using RTI finished closest to expected cost (6.0%) and projects using OIS ran significantly over budget (14.1%).
- **Testing Costs:** In projects where the cost of testing was less than 30 percent of the total development cost, RYO (72.5%) showed an advantage over commercial (65.5%) middleware. Projects using RTI's commercial middleware, however, had testing costs less than 30 percent of the total development cost 84.6% of the time.
- **Design Completion and Outcomes:** Final Design outcomes using commercial embedded middleware in general, and RTI in particular, were much closer to pre-design expectations than RYO developments for performance, functionality, features and schedule.

"Middleware choice can have a critical impact on development costs, schedules, risk and performance," said embedded industry expert Dr. Jerry Krasner. "Developers are challenged by projects that are increasingly complex, with ever-shrinking market windows and increased support requirements. While RYO developers often believe that they can develop their middleware at a lower cost or with higher performance than commercial middleware, this study indicates otherwise. They and cost-conscious company management alike should strongly consider the advantages of commercial communication integration middleware and the embedded offerings of OIS and RTI in particular."

Embedded Market Forecasters' "Choosing Between Commercial and 'Roll Your Own' Embedded Communication Integration Middleware" report can be found at www.embeddedforecast.com.

About Embedded Market Forecasters

The premier market intelligence and advisory firm in the embedded technology industry, Embedded Market Forecasters (EMF) is the embedded market research division of American Technology International, Inc. We specialize in providing high-quality data and expert analysis to support our clients' ability to assess the opportunities, risks, and competitive issues involved with developing and deploying embedded technologies. EMF has extensive experience providing both multi-client and custom research on topics including embedded boards, buses, software, hardware and development tools markets as well as embedded technology applications including embedded systems, digital signal processors (DSPs), FPGAs, single board computers, communications/IT, and multimedia. Our clients range from startups to Global 100 companies

worldwide. Founded by Dr. Jerry Krasner, a recognized authority on electronics markets, product development and channel distribution, EMF is headquartered in Framingham, Mass.

Author Profile

Dr. Jerry Krasner is Vice President of Embedded Market Forecasters and its parent company, American Technology International. A recognized authority with over 30 years' embedded industry experience, Dr. Krasner was formerly Chairman of Biomedical Engineering at Boston University, and Chairman of Electrical and Computer Engineering at Wentworth Institute of Technology and Bunker Hill Community College. In addition to his academic appointments, Dr. Krasner served as President of Biocybernetics, Inc. and CLINCO, Inc., Executive Vice President of Plasmedics, Inc. and Clinical Development Corporation, and Director of Medical Sciences for the Carnegie-Mellon Institute of Research. Earlier, he was Senior Engineer at the MIT Instrumentation Laboratory. Dr. Krasner earned BSEE and MSEE degrees from Washington University, a Ph.D. in Medical Physiology / Biophysics from Boston University and an MBA from Nichols College.

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