

## NEWSFLASH

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# A High-Level View of InterSystems' Latest Innovation: DeepSee

Healthcare Provider IT Strategies

#HI214503

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## NEWS UPDATE

This Health Industry Insights NewsFlash discusses DeepSee, an embedded, real-time business intelligence tool designed to complement real-time, transaction processing applications that run on InterSystems' Caché database platform. DeepSee functionality can also be embedded in HL7-based transactions in InterSystems' popular HIT integration engine, Ensemble. On September 29, Cambridge, Massachusetts-based InterSystems Corp. announced the general release of DeepSee.

## OUR VIEW

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### The Bottom Line

DeepSee includes four components:

- **Architect.** This module is the design tool that allows developers to create data models within Caché that are based on current transactional data flows. No external data warehouse is required. DeepSee also creates bitmap indices to optimize application performance.
- **Analyzer.** This module uses the data models defined by the Architect to create pivot tables and graphs using point-and-click/drag-and-drop capabilities.
- **Designer.** This module takes output from the Analyzer and creates dashboards that can include interactive controls such as combo boxes, lists, radio buttons, and links. These are built as Web pages that can be embedded in the host application.
- **Connector.** This module provides the ability to extract data from external source applications and make it available to the Architect.

Many of the architectural elements and user interface features of DeepSee, including those of the Analyzer and the Designer modules, will be familiar to those familiar with InterSystems' Ensemble product.

DeepSee runs on Windows, UNIX, Linux, Mac, and OpenVMS platforms. Pricing begins at \$6,000 per server. DeepSee is available immediately and has already been licensed to an unspecified number of InterSystems' ISV partners. Caché-based products are currently marketed by HIT vendors such as Epic, Siemens, QuadraMed, Sunquest, and GE Healthcare. Collectively, their user base accounts for roughly half of the installed clinical systems in the United States.

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### **Essential Guidance**

In its press release, InterSystems characterized DeepSee as "a high-performance, cost-effective alternative to today's array of business intelligence products." While we believe that DeepSee has the potential to significantly enhance the value of many of the commercial, clinical, and administrative applications built to run on InterSystems' perennially popular Caché platform, we see it as more complementary than alternative. Nevertheless, it represents a powerful tool with which the vendors of these products will be able to deliver valuable enhancements in future product releases.

Business intelligence (BI) and its close cousin, clinical intelligence (CI), are two of the hottest technologies in healthcare IT today. But in our view, effective, enterprisewide BI/CI deployment strategy must encompass a multilayered, multifaceted strategy that provides role-based BI/CI functionality that covers a wide range of business and clinical processes and end user types.

There is a decided need for the capabilities DeepSee provides. In order to provide embedded, real-time business intelligence, BI technology must be delivered as an integral part of its host application, have unfettered access to a complete set of data required for critical operational decision-making, and the ability to create, update, as needed, and apply the business rules that facilitate appropriate decision making and deliver it to the appropriate decision maker in an actionable time frame.

In hospitals, there are many opportunities to utilize BI/CI functionality; not only for improved management and financial planning and decision making, where it has generally been most successfully applied to date, but also for process, quality, and workflow improvement, as well. In support of the latter, BI's success has been more elusive. With the exception of the growing number of real-time clinical alerts built into many clinical information systems, the majority of BI/CI capabilities deployed today provide only a retrospective view of the processes and outcomes they target. Also, many current BI deployments lack enough detail in their drill-down capabilities to clearly identify the specific sources of adverse metric values.

The latency inherent in the analysis and delivery cycle and lack of granularity have diminished the actionable potential of many BI initiatives. In contrast, by embedding real-time BI capabilities in transaction-processing applications, DeepSee appears to have the potential to address both issues and deliver actionable alerts to the end users and first line managers to take timely corrective actions at the point of awareness.

Hospitals are very dynamic organizations and their workflows, while theoretically fairly standardized, are highly interdependent and frequently subjected to disruptions or unplanned delays. With real-time, embedded BI capabilities, the impact of unplanned changes in schedules or workflows can be communicated more effectively and more timely, minimizing the adverse effects. This analyst can easily visualize a rather lengthy list of useful DeepSee-enabled alerts in support of physicians, nurses, admitting directors, bed controllers, radiology supervisors, transporters, venipuncture technicians, housekeepers, service engineers, IT support personnel, and many others. In our view, such capabilities would be even further enhanced with the integration of data from RTLS-enabled patient, staff, and equipment tracking applications. The key will be how quickly, and how well, InterSystems' ISV partners deliver DeepSee-enabled capabilities to the market.

Vendors considering the integration of DeepSee into their applications will be looking carefully at their ability to effectively define reliable, actionable alerts using source data that is either currently available in or can easily be either added to their applications or acquired via integration with those from other suppliers. End users considering the deployment of DeepSee-enabled applications in conjunction with other, third-party decision-support applications at the enterprise level should carefully evaluate its extraction, transformation, and load (ETL) capabilities.

We hope that these requirements can be satisfied and effective solutions delivered by leading healthcare ISVs soon. If so, we expect that they will satisfy some "DeepSee-ted" needs.

## **LEARN MORE**

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### **Related Research**

- *Inpatient EMR in Practice* (forthcoming)
- *Cerner's Diversification Strategy: Will it Position Them for Another Era of Dramatic Growth?* (forthcoming)

- *Healthcare Provider Industry Short List: Ambulatory Electronic Health Records and Electronic Medical Records* (Health Industry Insights #HI213204, August 2008)
- *Healthcare Provider Industry Short List: Inpatient Electronic Medical Records* (Health Industry Insights #HI211721, April 2008)
- *EMRs, Their Current State and Future Direction, Part 2: Ambulatory Care* (Health Industry Insights #HI210696, February 2008)
- *U.S. Health Industry Provider 2008 Top 10 Predictions: The Use of IT in the Provider Landscape* (Health Industry Insights #HI210302, January 2008)
- *EMRs, Their Current State and Future Direction, Part 1: Hospitals* (Health Industry Insights #HI208878, October 2007)

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