Cool Vendors in Context-Aware Computing, 2009

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This research highlights several vendors with exciting potential in the context-aware computing arena. CIOs, chief marketing officers (CMOs) and chief architects interested in exploiting context information should investigate these vendors to determine if and how they fit into enterprise context strategies.

Key Findings

- The emergence of personal agents that maintain individual context information and interact with context-enriched services on behalf of the end user will be critical to the evolution of context-aware computing.
- Rich context information can be provided by combining location analytics with social computing information, presence and other components of context.
- Context is still nascent in most environments; however, some early vendors and solutions are making it viable for early adopters to leverage contextual information in their business processes.

Recommendations

- Review current customer and employee technology strategies to seek opportunities to lay the groundwork for context-aware computing applications that improve customer interactions and employee productivity.
- Begin building strategies for linking information models directly or through agents.
- Plan for increased investment in server-side analytics to support contextually aware computing applications.
- Consider the listed vendors as sources for context information or platform services.
ANALYSIS

This research does not constitute an exhaustive list of vendors in any given technology area, but rather is designed to highlight interesting, new and innovative vendors, products and services. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

What You Need to Know

Context-aware computing centers around the concept of leveraging information about the end user — the environment, processes, communities and various persona employed when interacting with computing technologies — to improve the quality of the interaction. In economic terms, context-aware computing is about lowering context-switching costs to increase efficiencies and effectiveness for businesses; and for consumers, to make content or service more appealing because the application or service is attuned to what users will need in the future, rather than just being reactive (see "Key Issues for Context-Aware Computing"). This research highlights several vendors with exciting potential in the context-aware computing arena.

Appear Networks, Kista, Sweden (www.appearnetworks.com)

Analysis by William Clark

Why Cool: Appear Networks offers its Appear IQ and Appear Context Engine (ACE) software as a part of its packaged mobile application platform. ACE offers an elaborate publish-subscribe model for context information that can be used to seamlessly augment the business logic and user experiences across various device, network and application boundaries. Appear’s model includes a context ownership construct, where information is managed within the middleware, as opposed to on the end client itself, an important element in making context-aware computing feasible for mainstream deployment.

For example, consider a use case for airline CRM. Information gleaned from field service applications (for example, a flight departure control system) are fed in real time to sales force automation (SFA) CRM applications or portals (such as an in-flight CRM solution), enabling cabin crew to access specific passenger databases and loyalty program information. The solution replaces manual processes based on paper or voice. An even bigger potential is for service providers that could use such sophisticated middleware components to enable the secure sharing of information between different populations of users (ramp management staff, mechanics and security personnel) within complex environments like airports.

This approach is an antithesis of a mashup philosophy because it adds mechanisms to easily set expectations between the producer and consumer of the information by defining context domains with shared information and flexible context rules.

Challenges: Context-aware implementations can require a large number of server instances to perform large, complex cross-referencing of information to deliver and maintain adequate user responsiveness. In cases such as Dutch Railways, Appear has addressed scalability so that it can support massive numbers of end users with a multi-tier distributed solution, where such complex rules can be written using simple logical expressions. However, such infrastructures may carry a large upfront cost. Several service providers have started to offer Appear context-aware middleware in an application service provider (ASP) model to reduce these upfront costs to customers (for example, SITA in the air transport industry).

Who Should Care: Enterprises that wish to extend their presence or scheduling systems to diverse workforces — for example, integrating real-time presence and CRM information — should
consider Appear Networks. The technology is being adopted very quickly in industries where various populations of frontline workers need mobile access to dynamic real-time information — for example, passenger and freight rail, air transport, healthcare, emergency, police, and so on.

Rearden Commerce, Forster City, California, USA (www.reardencommerce.com)

Analysis by Anne Lapkin

Why Cool: Rearden Commerce is a Web-based travel and expense management service that has developed a sophisticated end-user agent (Rearden Personal Assistant), which can be used as part of the Web-based application or on the user's mobile phone. This agent maintains significant information about the user's preferences, profiles and schedules, as well as the policies of the user's organization. Rearden Commerce enables the seamless scheduling of meetings and travel based on company policies and personal preferences. Schedule disruptions (such as a flight delay) are detected, and rescheduling is done automatically where possible. In addition, the agent differentiates between personal and business activities, and provides the correct billing instructions for each based on user profile information. Gartner believes that personal agents that control context information and manage the interactions with context-enriched services on the end user's behalf will be critical to the growth and evolution of context-aware computing. Rearden's business today is primarily business to employee (B2E; the business subscribes to the Rearden service, and employees use the applications), although Rearden has a small business-to-business (B2B) component through its channel partners. The company has plans to enter the consumer space.

Challenges: A personal agent with information about that user's context has real business value, but "real estate" on mobile devices is scarce, and Rearden will need to create a compelling value proposition for consumers to ensure that its agent is the one on a consumer's desktop and mobile phone. Rearden should develop a long-range vision for the personal agent that extends beyond the existing travel niche. In addition, the company collects a significant amount of context information already, with the potential for much more. It needs to come up with a comprehensive strategy for using that information, not only to increase the value of the services it currently provides, but also to support its business model in the future.

Who Should Care: Enterprises that intend to deliver services via a personal agent, or are interested in leveraging an agent with significant personal knowledge for targeted marketing or service provision, would be prime candidates.

Sense Networks, New York, New York, USA (www.sensenetworks.com)

Analysis by William Clark

Why Cool: Through 2014, enterprises will be facing ever more competition in targeting marketing, customizing services, and making content relevant, noticeable, and attractive to consumers. One way to achieve this is proactive analysis, the next generation beyond search-engine-oriented discovery. Simply stated, this is picking all the most relevant recommendations for all people on a real-time basis. The equation to picking the most relevant recommendation is based on intimate knowledge of the end-user's preferences, history, and the relationship between people, places and objects. Factoring these elements and forming an accurate model of "collective intelligence" will be a key new technology area. Collective intelligence is where Sense Networks is relevant, because its technology can process location data to create useful indexes about consumer segments, intent and modality. By analyzing movement patterns of people, Sense can apply analytics based on its Minimum Volume Embedded (MVE) algorithms so that its agents can be used by consumers. Citysense, an application that enables a consumer to see what other "people like me" are doing at any given time within a particular city, is based on Sense Networks' analytics engine.
Challenges: For Sense Networks to become a catalyst of context-aware computing, it will need to develop a framework for business intelligence that addresses privacy issues. It will also need to hone its business model and the packaging of its MVE analytics engine so that it can be economically scaled as a service and in on-premises instances. It also will need global-class service providers and vendors to adopt its technology in a thoughtful way that will enable users an active role in the harvesting and disseminating of information.

Who Should Care: Large enterprises in any sector targeting consumers that want to move beyond "just" mobile-enabling their e-commerce Web sites will be interested in engines that analyze collective as well as individual behavior. Service providers that wish to evolve to context-enriched services from emerging location-based services will find Sense Networks especially valuable as a middleware or service layer that can begin as a location analytics engine and later extend in other dimensions, such as presence and social computing.

Slifter, New York, New York, USA (www.slifter.com)

Analysis by Gene Alvarez

Why Cool: Slifter is a multichannel local shopper application. One part of Slifter is an application that is downloaded to a Web-enabled mobile phone (such as BlackBerry or iPhone). The local shopping mobile application leverages the GPS location capabilities of the phone so that a user can perform searches for products or services based on what is nearest to the current location. Additionally, users of the mobile application have access to the company's Web site through which they are presented with localized promotions or via the mobile phone based on the user's postal code or GPS location.

The mobile application, Short Message Service (SMS) capabilities, Web site and Web widgets (Facebook and Twitter) enable users to create personalized shopping assistants. Slifter leverages its partner network of carriers (Sprint, Helio, AT&T, Virgin Mobile, MetroPCS, Alltel, Verizon and others) and handsets (Nokia, RIM [BlackBerry], and Apple [iPhone]) to build out its customer base.

Challenges: Competition for localized shopping via the Web or phone continues to rise; and consumers already have many options — from Google to the popular iPhone Aroundme application. Slifter needs to build a stronger brand image as a personal shopping assistant, and will also need to create more handset-specific applications to garner a large population of consumer options. In the local search market, accuracy and depth of suppliers are critical to success, and Slifter may receive competition for telco phonebook-based localized search.

Who Should Care: Retail organizations of all sizes that would like to have their store locations and products discovered through mobile-phone-based consumers should consider this option.

Wesabe, San Francisco, California, USA (www.wesabe.com)

Analysis by Anne Lapkin

Why Cool: Wesabe is a financial social network that enables users to consolidate their financial information in one place to apply social software concepts to the information, permitting users to benefit from the knowledge and experience of others when managing finances. Features include the ability to see how other members evaluate a particular vendor and "social tagging" of expenditures so that they are automatically categorized — reducing setup and maintenance time. Wesabe provides a "wisdom of crowds" dimension to financial management by using the microeconomic decisions that members make to recognize transaction patterns. In this way, Wesabe can identify which grocery stores are more popular in a given area or which restaurants are getting repeat business. It also hosts member-contributed forums regarding specific goals, such as "buying a house" or "paying off credit cards." Wesabe Cutback is a recently added...
feature that identifies the repeating transactions in your accounts and suggests which ones you might wish to cut. Transactions that have been cut by more members bubble higher up on the suggestion list.

Wesabe has the potential to be a significant player as a context broker for financial information — a big part of individual context. As Marc Hedlund, Wasabe’s CEO, says: “Wesabe has enough information about members to be useful to merchants, and enough information about merchants to be useful to members.”

Wesabe provides mobile versions for the iPhone and for any phone that supports HTTP and XHTML. Widgets and gadgets are provided for Windows Vista and Mac platforms and a full-function application programming interface (API) that allows third parties to develop tools that work with the financial information uploaded to Wesabe for a single authenticated user.

**Challenges**: Wesabe has two potentially significant challenges:

- Privacy and security. While it currently has a robust security model and policy, any significant violation of the terms of use could cause a catastrophic loss of member confidence. As it expands its footprint, Wesabe will need to monitor the use of member information very closely to ensure compliance.

- Its startup status. Wesabe has not yet achieved significant revenue. The larger players in the financial management space, such as Quicken or Mint, have not yet incorporated the social networking capabilities that differentiate Wesabe into their offerings, but could easily do so.

To stave off encroachment by competitors with significantly deeper pockets, Wesabe will need to work hard to establish brand awareness and to continue to innovate in its space.

**Who Should Care**: Banks and financial institutions that wish to enhance the value they provide to their customers, as well as increasing customer intimacy, should consider Wesabe. Merchants that wish to gain knowledge of buying patterns of target customer populations and deliver more targeted marketing should also consider Wesabe.
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