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High Performance Organizations Driven by The Power of Enterprise Business Events

White Paper : IntelliRADAR

It is not the strongest of the species that survive, nor the most intelligent…But the ones most responsive to change

- Charles Darwin

Agility- The KEY to Success in the Internet Age

Agility, Real Time Enterprise, Zero Latency...these are among the several buzzwords doing the rounds these days. Some would characterize these present times as belonging to the Real Time Decade. Are these words just hype or do they proffer a vision of reality for the near future? This paper attempts to examine the issues involved and offer some answers.

But first some questions…

As a CXO, do you often feel that you do not have the active pulse of the organization in terms of its processes and performance?

Are you often deluged with a huge number of extensive reports and trying to constantly make sense of the numbers?

Do you feel that you are very often in a fire-fighting mode rather than focusing on how to place the organizational processes in the next gear?

Is there a constant chaos in the organization due to external and internal events and lethargy and delay in taking timely decisions and actions?

Are your MIS personnel constantly responding to ever increasing and ever changing reporting and information requirements of various users?

Do you think that transforming your passive data assets into actionable insight is an urgent need?

Do you believe that the costs of not managing your enterprise processes by exception are very high?

If your answers to most of the questions above are YES, the issues discussed in this paper may be of interest to you.

In the globalised Internet era, enterprises are constantly seeking to build sustainable competitive advantage by focusing on

Velocity of customer impacting processes and bringing down latency between events on the ground and organization's response; these processes sometimes span enterprise boundaries and partners in the value chain contribute to this overall velocity

Differentiation through superior service: as product quality evens out, it is the whole customer experience through a superior service offering that can become the differentiator; superior service demands flexibility in response to often changing customer requirements

Empowerment of front line personnel with actionable insight to help increase efficiency and effectiveness of their decisions and actions

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Current Limitations of Enterprise Information Systems

Most enterprises, large as well as SMEs, have made significant investments in the 90's, in transaction backbones and data capture systems. These provide an adequate and robust system-of-record and have in most cases, made internal data capture processes more efficient. However many issues still remain:

- Ability and the means to use this information effectively. A famous customer quote. "…ERP systems are like black holes a lot of data goes in but nothing seems to come out…"
- Inflexibility of information models design. In today's environment, enterprise information models need to evolve along with the change in the dynamics of internal and external processes and environments.
- Systems are designed to work in a request-response where users need to pull up data / information from multiple application for taking decisions and actions. There is often a significant latency between the physical events that happen on the ground and the time that information becomes evident to concerned users in the forms of reports.
- Personalizability of information in terms of what, when and how are almost not possible. The information requirements vary tremendously across both user and time dimensions, based on query criteria, attributes, comparisons and aggregations.
- Unavailability of tools to facilitate user action in an appropriate manner.

BI and Reporting tools have emerged in the last few years and it is true that they do address some of the above issues. However, fundamental constraints remain in terms of being data centric rather than event centric, providing post mortem rather than a priori analysis and also in being primarily one way rather than bi-directional. Typically BI users tend to be a few power users in the organization who generate the analysis on an ongoing basis and may then publish the information to other end users. BI we believe, is still very much oriented towards a 'provisioned", more rigid approach rather than a "declarative", more flexible approach.

A fundamental radical rethinking is required in terms of how information about business events are generated, distributed and acted upon by users, for organizations to leverage the investments in transaction backbones and data assets.

Requirements for a robust Business Events Monitoring Framework

Event Driven: Amongst the most important aspects of a business event monitoring framework is its need to be Event Driven. Generating user definable business events, pushing it to the user, providing contextual analysis and enabling the user to take necessary decisions, action and collaborating with internal and external participants all form a part of this need. The events should be configurable by different users and roles based on unique needs and access privileges. It should be possible to define events on instances as well as aggregates.

Provide Context: The framework should have the ability to correlate transactions, performance indicators and processes and activities. It's really about having "ears on the ground" and should generate a context for business events based on the relationship between individual transactions, underlying processes and performance measures which should have the ability to combine lead and lag indicators. The framework should also enable users to to zoom in and zoom out and operate from multiple altitudes sometimes 30000 ft view, sometimes 30 ft view depending on the context of the business events.

Just-in-Time rather than Real Time: Real time is really relative to the business process under consideration. Every business event has a window of opportunity within which the users and systems can react to the information contained within the context of the event. This window of opportunity differs across domains, business processes and enterprises. The business event monitoring framework should have the ability to generate just-in-time business events and disseminate them to the process participants, internal and external

End User Configurability: End users should have the power to configure the what, when and how of business events and exceptions. It is very much about placing the power of business events in the hands of the end user

Cross Application rather than monolithic: True business events as opposed to data / transaction events - cut across multiple data sources of the enterprise; The framework should work with multiple data sources in a loosely coupled mode, rather than tightly coupled with a single data source in a monolithic architecture

Management by Exception philosophy: The framework should notify users on exception rather than as a routine matter. No user wants to be flooded with a variety of routine information even if it comes in the form of "alerts". The important thing to recognize is that exceptions cannot be predefined. The ability to define exceptions should be in the hands of the end user rather than the system designer

Closed loop action: Monitoring and receiving alerts alone is not sufficient if the users or other systems cannot react to the information in a context dependent manner. Imagine a pilot getting an alert on the dashboard at an altitude of 30000 feet about total engine failure without having the ability to open up a parachute and bailing out!

Architecture, Design and Technology Considerations

This section outlines some of the critical technology and design and architecture considerations:
Information Models: Information models defined, analyzed, and monitored within the monitoring framework should allow pre and post deployment configuration and modification. It should allow for selective "massaging" of the incoming data so that "purposeful" information models can be created in a configurable manner. Deployment time and post deployment flexibility is critical, as the framework is likely to evolve in a spiral manner a traditional SW Development Cycle based on the waterfall model may not work and actually be counter productive in this case.
Open Interfaces: The framework should provide interfaces simultaneously to multiple data sources in a combination of both batch and real time modes

Rule based Event driven Architecture: The framework should inherently be rule based and event driven. This architecture allows tremendous flexibility in terms of the manner in which purposeful information models can be created and manipulated

Push Mode: A Business Event Monitoring framework derives much of its value from its ability to push business events to the user, rather than have the user constantly query the system(s) for appropriate information. One could visualize this as configurable "agents" constantly scanning the flow of data and spotting and communicating "events of interest" as defined by the user.

Action Triggering: The framework should provide for ability to trigger human and system processes and activities so that issues and exceptions can be resolved rapidly.

The emergence of technologies like Enterprise Application Integration (EAI) and Business Process Management (BPM) and standards like is very synergistic to the vision of Business Events Monitoring Frameworks from a technology perspective. The architecture of the framework can be seen as an emerging layer on top of the EAI stack and can add significant "intelligence" and "content based context" to the message level plumbing infrastructure that EAI offers.

Introducing the IntelliRADAR Framework

IntelliRADAR is the implementation of our Business Events Monitoring vision a completely role based closed loop monitoring framework. The primitives that IntelliRADAR handles are the concepts of Business Objects, Business Processes and Activities and Key Performance Indicators (KPIs). IntelliRADAR allows for flexible definitions of these primitives during and post deployment and can connect with multiple data sources like ERP and other transaction systems.

The key capabilities are:

- End User definable complex alert generation and monitoring
- KPIs that can be modeled and monitored on an ongoing basis with rich configurable drilldowns to hot spots
- Processes and activities that can be triggered on events and exceptions for rapid issue resolution

The three main aspects of IntelliRADAR:
Pervasive "sense and respond" paradigm
Management by Exception
Map, Measure, Monitor, Manage: just-in-time

The entire deployment can be executed with close to NIL programming using the rich capability of the rule based event engine IntelliPush, also from Herald Logic. The deployment methodology is based on an Incremental Value Approach, by which the framework is implemented to monitor identified processes and parameters in short iterative circles to ensure rapid ROI and short payback periods.

Benefits and ROI

The key benefits of implementing IntelliRADAR are:

- Continuous process improvement leading to increased organizational agility and developing a performance focused organisation
- Reduced latency between information generation and decisions / actions
- Quicker "hotspot" identification leading to more efficient issue resolution mechanisms
- Automated triggering of processes on events and exceptions leading to increased velocity and effectiveness of customer facing and customer impacting processes
- Less effort on obtaining the right information
- More time and resources for value added activities
- Less money spent in back office MIS activities
- Low TCO
- Low cost of ongoing modification and changes to business policies
- Bootstrap approach allows ROI driven implementation

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