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PROCESS INTELLIGENCE FOR GLOBAL COMPETENCY

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ABSTRACT

Organizations these days strive for improved efficiency which goes beyond simply automating labor-intensive activities. If industry is not competitive, it will not be able to cope with the pressure of globalization. This means ensuring efficiency, quality, productivity and monitoring costs, watching bottom lines and top lines, and preventing waste of resources, and all of that. Competitiveness and striving towards self – improvement is an on – going phenomenon. Industries need to be more proactive and make each process work smarter in terms of how it operates. Monitoring processes is not sufficient, one needs to design and implement intelligent business processes that produce actionable results and at the same time intelligently minimizing human intervention. Decision-making capabilities and analytical ability should be embedded into the design of a process, not in reaction to processes that do not work efficiently. A smart business process is able to anticipate the need for decision-making and supply the right information to support those decisions which are based on real-time operations or processing. In order to make business process smart the organization needs to incorporate various key business intelligence elements like data visualization; analytical decision making and value based reporting system during the design and implementation stage. The business in this scenario needs to watch the size and quantity of orders received, because large orders or orders that require special handling can potentially disrupt shipping schedules, cause expensive overtime, delay important shipments, require contracting of specialized shipping services, or need temporary storage space until shipping can be arranged.

Keywords: *Business intelligence, Process oriented Intelligence, Automate Analysis, Data visualization, Analytical decision Making, Value based reporting system and System specifications*

Introduction

Consumers are busier than ever and have consequently placed a premium on their leisure time. After all, why tramp through aisle upon aisle of merchandise when any one could order groceries off the web and spend more time with kids? And pizza? And even utility vehicle?

In a recent ***Information Week*** survey, of the companies actively implementing the various tools of customer relationship management, 93% claimed increased loyalty and customer satisfaction would justify their customer relationship management investment. The second largest percentage, 83 percent, stated the need to demonstrate increased revenue. The implied mandate

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for most of these adaptors seems to be "customer loyalty at any cost – even if we don't see a return on investment." Secondly we also should have to remember that it certainly doesn't take much for customer to turn their head to a competing product or vendor.

However, it should come as no surprise that in a globalizing world, the challenges we as a global community (community of sellers) encounter, are much more uniform given the greater degree of interconnectedness. It means to say that as customer's loyalty is becoming the mantra on every executive's lips, customer satisfaction rates are plummeting. It's practically routine these days for consumers to vow never to do business with a particular merchant. Even regardless of frenetic embrace of the customer, companies seem to be angering customers at a faster pace than they are serving them. That is, the pressures driving these challenges are very strong in nature, and the challenges themselves represent the effect of huge customers' shifts and underlying economic factors. In aggregate, these forces are tremendous, making the need to adapt even more pronounced. The stakes have been raised, and the costs reflect not only local economic, cultural and regulatory scenarios, but rather those from all over the world.

Historically, we have seen that development and acceptance occur along the C-B-A front. That is, we moved from Computing to Bandwidth to acceptance of Audience. The result is that various companies like youtube.com etc have become heavy players in world economy, because they are in fact defined by their audience. They have an enormous subscriber base and have therefore made it attractive to their eventual purchasers.

Proactiveness with Efficiency Enhancement and Effectiveness

In 1996, author Frederick Reichheld wrote that U.S corporations lose half their customers every five years. Indeed, banks and telephone companies in India were already in the throes of analyzing customer attrition to understand why customers were leaving for competitors. Understanding that customers have left, and knowing specifically who, is non – trivial. Understanding why they have left is even more difficult. Harder yet is stemming the tide of customer attrition by applying this knowledge to business tactics that encourage customers to stay. Organizations these days strive for improved efficiency which goes beyond simply automating labor-intensive activities. They need to be more proactive and make each process work smarter in terms of how it operates. Monitoring processes is not sufficient, one needs to design and implement business processes that produce actionable results intelligently minimizing human intervention. Decision-making capabilities and analytics should be embedded into the design of a process, not in reaction to processes that do not work efficiently.

Operational and analytical data, when done right, involves large amounts of cross – functional data. This data is often stored on a data warehouse, a repository of corporate data from various sources intended to facilitate business analysis. Data warehouses continue to deliver critical knowledge in a range of industries, generating returns on investment in the hundreds of millions of dollars. The practice of using data warehouses to analyze business performance is known as business intelligence. Now, the Process Intelligence is about the way information is used and exploited in businesses, organizations and government. It is associated with the application of real time and event-driven Business Intelligence (BI) technologies to business processes.

The traditional data warehouse has enabled significant advances in use of information however, Its architecture limits the ability to optimize every business process by embedding BI capabilities within .There is a need to look to event-driven, continuous in-process analytics to replace batch-driven reporting on processes after the event has taken place.

Limitations of Business Intelligence i.e.(BI)

Many organizations need to provide the quality of service and customers demand real time actionable intelligence. Business Intelligence systems offer faster data warehouse queries and dashboards though they do not get to the heart of the architectural issue. The data is obsolete by the time it has been entered into the data warehouse and then extracted. This issue is only with applications that require real time knowledge.

A common misconception is that real-time data isn't needed because there is no way that operations teams could analyze it. The issue is not resolved by the delivering more reports. The need of the hour is to put relevant insight into the hands of operations staff in time to make a difference to day-to-day operations.

BI systems deliver reports that need analysis and interpretation before decisions are taken. Reports are accessed only when there is an issue, rather than reporting on the effectiveness of a process after the fact. BI should be used within the process as a way of routing workflow automatically, based on customer activities. In order to achieve this data needs to be captured in real time while analyzing and interpreting it as well. This is process oriented BI that analyzes up-to-the-minute data in the context of historic information so that automatically actions are initiated which is not supported in a data warehouse.

Over the past few years, companies present their data warehouses as Web services for use by other applications and processes connected by SOA i.e. System Oriented Architecture. A fundamental limitation to this approach is that the data warehouse is the wrong place to look for intelligence about the performance of a current process.

Even layering a BI dashboard onto the data warehouse is inadequate for many operational tasks because they rely on a user noticing a problem based on obsolete data. Dashboards remove details and context and present only a view of the past. Decisions require detail and need to be made in the present.

Given the challenges associated with trying to move to a real-time data warehouse, however, it is clear that information required to support and indeed drive daily operational decisions must come from a different approach to avoid the latency introduced through the extract, transform, and load and query cycle.

Need for Process Intelligence

Business intelligence (BI) has traditionally been used for supporting long-term strategic planning and short-term tactical tasks.

Right-time represents the response time, or ***action time***, required by businesses to react to a particular business situation. This action time may be a few seconds or a few hours, depending on business needs. Detecting fraud, for example, requires a faster action time than determining that a store has run out of a particular product. Action time can be broken down into three components:

- the time required to capture business transaction data for analysis,
- the time required to analyze this data and deliver the results to the user,
- the time for the user to make a decision and take action.

Business intelligence (BI) systems helps in enabling better, more informed, and faster decisions. It is important to know how close to real time the information is to support those decisions. The composition of real-time information varies widely for different business activities,

even within a single enterprise.

For example, considering a chain of retail outlets:

- An analyst using historical data as input to the sales forecast for the next period would likely only need information as of the last month.
- A marketing manager evaluating the success of a campaign, and responsible for deciding how long the campaign should run, would need much more timely information, probably no more than one day old.
- A store manager might be making frequent decisions during the day; for example, deciding when to put a perishable item on sale. The manager would need information that was certainly no more than a few hours out of date.

Now, Many times a combination of up-to-date and historical information is necessary. For example, while it may be useful for the store manager to know the number of sales of a particular item so far this morning, it is more useful if he can put that information in the context of the average number sales of that same item on the same day of the week over the last year.

Reports can include data from different systems. In the above retail example, the data for today's store sales is taken from the source systems that are updated immediately at the time of sale, which would be combined with historical data in an Enterprise Data Warehouse (EDW). When the data from two sources are compared the same business policies must be applied that were enforced during the load of the data warehouse. These include the consolidations that were applied, the treatment of discounts, and the approach to currency conversions. This means that the business rules embodied in the EDW load process must also be embodied in the reports or applications that combine data from the two systems. This can result in a less agile and more error-prone system. This could lead to the making of decisions that are based on incorrect information.

There is a need for a single source that produces data that is close enough to real time to support all decision makers in the different scenarios.

Barriers to Obtaining Process Oriented Business Intelligence

Barriers to obtaining real time data include the following:

- There are times when it is necessary to provide an historical view and the data is not available in original source and a separate copy is maintained with full history in a data warehouse.
- Coordination with business processes is necessary across systems as certain analysis might be meaningless until certain business processes are complete.
- The data needs to be transformed consistently which might have cost implications every time an analysis is done.
- Multiple data sources need to be integrated.
- Data consistency needs to be maintained on a continually updated system.
- The latest data reports needs to be delivered to the decision makes in time.

Framing Objectives for Process Intelligence

The goal of process oriented business Intelligence is to reduce latency. In order to increase business performance one needs to reduce the time between an event that occurs and the

action taken on that event.

In process oriented business intelligence data isn't stored in a database or extracted for analysis. It processes streams of events in memory, either in parallel with actual business processes or as a process step itself.

The system searches for scenarios of events, patterns and combinations of events that are relevant for the current problem at that point in time. The outputs of these systems are real-time metrics and alerts and the initiation of immediate actions in other applications. The effect is that analysis processes are automated and don't rely on human action, but can call for human action where it is required.

The process oriented BI gets data directly from middleware and creates streams of events for analysis, which is performed in memory. When these real-time events are compared to past performance, problems and opportunities can be readily and automatically identified and proactive actions can be initiated.

Intelligent Processes and its Characteristics

Smarter processes help in making a difference to the bottom line. There is a need to build an outstanding ability into automated processes so that the operational staff is equipped with actionable information and changing the day-to-day standard operating procedure to drive data-driven processes. The solution is to leverage the messaging technologies underpinning transactional systems, business process management and SOA, and event-driven real-time BI technologies.

Following are the characteristics of a process oriented BI:

- *Event Driven:* In order to create smarter processes, businesses need to be able to analyze and interpret events. The process are automated and driven by events. This implies that data is analyzed event by event, either in parallel with the business process or as an implicit process step.
- *Real Time:* Any application that involves trading, dynamic pricing, demand sensing, security, risk, fraud, replenishment or any form of interaction with a customer is a time-critical process and requires real-time processing.
- *Automate Analysis:* In order to automate day-to-day operational decision-making, organizations need to be able to do more than simply present data on a dashboard or in a report. The challenge is turning real-time data into something actionable. In short, businesses need to be able to automatically interpret data, dynamically, in real time. What this means in practice is the ability to compare each individual event with what would normally be expected based on past or predicted future performance. Intelligent processes, therefore, must understand what normal looks like at both individual and aggregate levels and be able to compare individual events to this automatically.
- *Forward Looking:* Understanding the impact of any given event on an organization needs to be forward looking. For example, questions such as "Will my shipment arrive on time?" and "Is the system going to break today?" require forward-looking interpretations. This capability adds immediate value to operations teams that have a rolling, forward-looking perspective of what their performance is likely to be at the end of the day, week or month.
- *Process Oriented:* To be embedded within a process in order to make the process inherently smarter. This doesn't mean that the process has been modeled with a business process management tool. Actions can be optimized based on the outcome of a particular process,

but the process itself may or may not be explicitly defined.

- *Scalable:* Scalability is naturally a cornerstone of process oriented BI because it is based on event-driven architectures. This is critical because event streams can be unpredictable and occur in very high volumes.

Building Smarter Business Processes for Global Competency

The basic objective of smarter business process for global competency is alignment, development and deployment of intelligent and rational business linkages that can improve the company's revenues at home and abroad.

A smart business process is able to anticipate the need for decision-making and supply the right information to support those decisions during real-time operations. In order to make business process smart the organization needs to incorporate the following key business intelligence elements during the design stage that can be triggered by an operational event.

- ***Data Visualization***

  In order to take decisions one needs data and how this data needs to be presented? Who needs that data to make decisions and at what frequency the data needs to be delivered? All this can be designed into the process.

- ***Analytical Decision Making***

  When an event occurs and calls for decision then analytics should be produced along with the possible actions to take depending upon the result. Such functions can be embedded directly into the process for faster and more informed decision-making.

- ***Alerting***

  People or processes are notified when analytics produce results. This helps users to resolve issues as they unfold.

- ***Reporting***

  Precise events or conditions can be defined that will trigger reports into the process. In addition, one can specify data values, report format, report recipients, delivery method, and frequency.

Example

Business in today's scenario needs to watch the size and quantity of orders received, because large orders or orders that require special handling can potentially disrupt shipping schedules, cause expensive overtime, delay important shipments, require contracting of specialized shipping services, or need temporary storage space until shipping can be arranged.

Implementing real-time process change in the event of special-circumstance orders could help alleviate aggravation and reduce undesired costs.

To identify and resolve shipping issues faster, the purchase order process could easily screen for order size or special handling requirements. If either a size or special-handling condition is found when an item is ordered, a complete Order Composition report could be generated that notifies relevant people in the shipping department of the size, quantity, or special-handling requirements of the order. In addition, the report could alert other recipients responsible for space allocation, special packaging, transportation scheduling, and so forth, the instant the order is accepted, thereby preventing snags that often occur when unexpected events put a strain on normal operating procedures.

Benefits of Global Competency

Process intelligence based competencies have strategic value as performance improvement vehicles. Benefits include like

- They make explicit cluster of knowledge, behavioral skills and professional attributes that lead to high performance in specific jobs and roles. This information can be transmitted to variety of other relevant platform.
- They embody the core values of a business, aiding in the communication of these values throughout the organization and helping to shape and align an intelligence based business culture and to maintain its identity worldwide.
- This competency may also help employees to understand the apparent contradictions of the new economy and value chain.
- It can also generate *behavior based performance standards* against which people and unit can be aligned and measured. They provide a behavioral vision for the kinds of performance necessary to successfully implement worldwide business strategies.

Conclusion

Process Intelligence represents both a bold new vision and a fundamental shift in the way businesses can use information. It extends the definition of BI beyond the traditional data warehouse and query tools to include dynamic in-process and automated decision-making.

In the past, organizations have been forced to rely on obsolete information and to attempt to fix problems long after they occur. Process oriented BI changes that because it allows BI capabilities to be built into processes themselves - in short, it lets companies create smarter processes.

BI has risen to identifying problems and being proactive in taking corrective measures. It is ever closer to providing really useful information that can make a difference to the bottom line.

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