Achieving Superior Performance Through Intelligent Exception Management

Business Value Research Series

September 2005
Executive Summary

Systematically eliminating or minimizing the negative impact of exceptions in key business processes is emerging as a critical component of operational effectiveness, sustainable profitability, and competitive advantage.

Enterprises whose processes include best-in-class exception management capabilities are increasingly able to take advantage of much more decisive, immediate, and targeted decision-making and execution in the marketplace and across their extended value chains.

Best-in-class companies display a common set of characteristics that sets them apart from competitors and is a major source of their superior performance:

- **Process**: Closed loop and decision-centric, based on entire business processes and subprocesses extending across multiple organizations and systems;
- **Organization**: Cross-functional performance teams that determine or drive change;
- **Knowledge**: Detailed micro-market profitability data in common use, with automated facilitation and propagation of best practices;
- **Technologies**: Exception-management-specific, automating resolution and guided workflow, along with intelligent analytics; and
- **Metrics**: Harmonized, cross-functional, and top-down/bottom-up.

Business Infrastructure Technology Requirements

With these common characteristics of best-in-class exception management capabilities identified by Aberdeen research, let’s dive deeper into the technology requirements of the business infrastructure.

- **Automating Core Business Processes and Associated Exception Processes**: Automating the identification and resolution of exceptions is mission-critical to managing volume, complexity, and cost. There must be a common exception management infrastructure for multiple and inter-related end-to-end business processes.
- **Closed Loop Performance Management**: Systems must be capable of analyzing results and identifying opportunities for improving existing processes.
- **Real-Time Monitoring and Analysis**: Real-time systems provide the maximum flexibility to deploy the optimal response to the exceptions and be in position for a “feed forward” response to head off undesired consequences of impending exceptions before they are irreversible.
- **Collaboration**: Vocabulary-focused collaboration within the enterprise and among trading partners extends the impact and effectiveness of best-in-class exception management and assesses the impact of the corrective action before commitment.

Start with Identified Pain Points

Aberdeen research indicates that most enterprises that would significantly benefit from better exception management have not yet planned or budgeted for specific projects or a process for quickly
mobilizing to address these problem areas. Companies with best-in-class exception management performance secure rapid and impressive business returns by adopting the following focused approach to develop a clear business case for approval and action:

- Quickly identify a specific, vital process area that’s under-performing to plan and where there is obvious pain and opportunity;
- Identify and classify process exceptions that are the root causes of the performance shortfalls;
- Develop a high-level business case quickly, using competitive benchmark data on exception management; and
- Progress quickly to an opportunity assessment with sufficient detail to justify developing a budget grade estimate.

Aberdeen research has further identified the following as business process areas that can benefit most from improvements in exception management processes and technologies:

- Order fulfillment;
- Demand management;
- Inventory exposure management; and
- Product lifecycle management.

Table 1 highlights the significant benefits best-in-class enterprises have generated through use of exception management best practices in these areas, using a typical $500 million revenue company.

<table>
<thead>
<tr>
<th>Value Chain Area</th>
<th>Opportunity Point</th>
<th>KPI</th>
<th>Best-in-Class % Improvement</th>
<th>Annual Performance Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order fulfillment</td>
<td>Perfect order fill rate</td>
<td>Lost sales</td>
<td>35% reduction in lost sales</td>
<td>$6.1 million in revenue</td>
</tr>
<tr>
<td>Demand management</td>
<td>Promotion planning</td>
<td>Forecast accuracy</td>
<td>3.7% increase in gross margin dollars</td>
<td>$9.8 million in gross profit</td>
</tr>
<tr>
<td>Inventory exposure</td>
<td>Component material exposure</td>
<td>Inventory write-offs</td>
<td>55% reduction in inventory write-offs</td>
<td>$5.9 million in cash flow</td>
</tr>
<tr>
<td>Product lifecycle</td>
<td>New product introduction</td>
<td>Revenue plan attainment</td>
<td>17% improvement in new product revenue</td>
<td>$10.7 million in revenue</td>
</tr>
</tbody>
</table>

Source: AberdeenGroup, August 2005
Aberdeen Recommendations

Enterprises can effectively manage exceptions and develop competitive advantage in their key business processes by taking advantage of the following Aberdeen recommendations:

- **Determine the business processes with the most improvement potential.** Map out your key business processes, prioritized by those for which you are currently experiencing the greatest shortfall in planned or required business performance and would get the “biggest bang for the buck” by reducing exceptions.

- **Identify and classify exceptions detected at key points in these processes.** Include how these exceptions are identified as such and how they are handled operationally. First, assess direct effects in terms of resulting delays, resources, and risk of errors. Then, assess downstream effects on key performance indicators for the enterprise.

- **Conduct a root cause analysis to pinpoint the true source of exceptions.** Determine precisely where in the target process the exceptions originate. The actual exceptions that are responsible for the shortfalls are almost never associated with the activity or decision points in the process where they’re initially measured. These are the exception areas upon which to focus.

- **Focus on customer-facing exceptions first.** Customer-facing decisions and exceptions almost always have a “domino” impact throughout the value chain. Moreover, exceptions that are measured “downstream” of the customer are frequently rooted in these key customer-facing decisions. Therefore, for most enterprises, the greatest payback for an initiative to improve business performance through superior exception management lies within the customer-facing activities and decisions.

- **Prioritize based on benchmarking against best practices.** Take advantage of the benchmark data included in this report to assess the value potential of improving your exception management capabilities in specific business processes and decision points.

- **Evaluate exception-management-specific software.** The growing complexity and value implications of exceptions in integrated business processes increasingly require intelligent software specifically designed for exception management to secure sustainable and significant value.
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Chapter One: Market Pressures Are Compelling New Exception Management Capabilities

PACE Key

Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:

- **Pressures** — external forces that impact an organization’s market position, competitiveness, or business operations
- **Actions** — the strategic approaches the organization takes in response to industry pressures
- **Capabilities** — the business process competencies required to execute corporate strategy
- **Enablers** — the key functionality of technology solutions required to support the organization’s enabling business practices

Exception Management Emerges as a Strategic Competitive Advantage

Systematically eliminating or minimizing the negative impact of exceptions in key business processes is emerging as a critical component of operational effectiveness, sustainable profitability, and competitive advantage.

Enterprises whose processes include best-in-class exception management capabilities are increasingly able to take advantage of much more decisive, immediate, and targeted decision-making and execution in the marketplace and across their extended value chains.

What has changed in the last few years is the huge increase in the number and complexity of these exceptions and in the direct and opportunity costs of not dealing with them effectively.

This has evolved into a very sharp, two-pronged strategy. Developing and deploying superior exception management capabilities helps in two ways:

- **Defensively**, to blunt the impact of competitors’ actions, and
- **Offensively**, to provide a real preemptive weapon to improve your sustainable competitive flexibility and profitability.

The Changing Competitive Business Landscape

There has been a profound and fundamental change in the nature of the global competitive landscape over the last several years that is sharply increasing the risk and opportunity of effective exception management:

- **Product proliferation** is increasing the need for dynamic product portfolio management;
- **Commoditization pricing pressures** require more detailed market segmentation, which, in turn, requires more granular best practices and exception management;
- **Shortening product lifecycles** drives the need for more immediate responses to correct exceptions in sales and operations performance (i.e., the profit time window is shrinking);
• Customer fragmentation and a growing desire for specialized solutions demand the ability to make dynamic mix decisions and support demand shaping;
• Market volatility and decreased predictability require compressed decision cycles;
• Changes of organizational structures, such as through mergers and acquisitions (M&A), joint ventures, and outsourcing force rapid changes in plan objectives and targets; and
• Using offshore suppliers and lowering inventory levels increase risk and the impact of supply chain process variances.

The marketplace has become a much less forgiving place to do business, with customers demanding the perfect order the first time, switching to new suppliers based on one “bad experience,” and demanding greater perceived value for branded products and services. This means that the consequences of processing delays and uncorrected errors are more severe than ever.

Winning enterprises have responded to these changes by adopting business network models that involve the following:
• Global sourcing, frequently from Asia Pacific;
• Distributed manufacturing and distribution, normally with more tiers than in the past (e.g., the automobile industry);
• Lean manufacturing and postponement strategies; and
• Collaboration with trading partners to optimize shared business processes and functions.

The need to serve today’s dynamic market at the lowest possible cost is forcing companies to rethink the traditional approach to exception management, based on manually intensive individual activities, compared with integrated, automated business processes.

Why? Because there are fundamental conflicts between the need to serve this dynamic and fluid local demand, and the desire to minimize total delivered costs with a more commoditized economies-of-scale product and service model.

The “bottom up” approach to defining best individual practices and metrics within an integrated business process is deeply flawed and invariably leads to inferior results compared with an integrated approach.

**Indicators That You Have Inadequate Exception Management**

While it’s true that industries with different characteristics suffer most pointedly in different parts of their value chains, it’s also true that there are sets of common areas that transcend these individual industry “pain points.” These include:

• *Lost sales* due to the inability to respond to rapidly changing requirements and specifications in different markets;
• *Difficulty in responding* to changes in near- to medium-term market demand and company performance, especially for promoted products and services;
• **Mismatch of available production and actual demand**, resulting in excess inventories and unplanned price reductions to “clear the pipeline”;

• **Reduced flexibility** to quickly achieve market penetration with new products due to the slowness in analyzing initial market performance;

• **Impaired ability to focus dynamically** on best/most profitable customer/product/channel/geographical/supply mix, resulting in excess unprofitable mixes;

• **Inadequate or reduced focus or priority** given to those customers, products, channels, and geographies that are emerging as the best targets.

• **Inability to provide customers with reliable delivery dates**, etc., without carrying excess inventories;

• **Excess “just in case” resources tied up needlessly**: inventories, production and storage capacities, driving down return on assets (ROA);

• **Excess supply chain expediting costs** due to weak demand-supply alignment and lack of forward visibility of emerging supply shortfalls.

These pressures on profitability and profitable growth are leading companies to look much more closely at existing and planned exception management processes and technologies to ensure they’re up to the required task.
Chapter Two: Winning Enterprises Adopt Technology-Enabled Business Process Strategies

Best Business Practices of Winning Enterprises

Enterprises achieving best-in-class results have adopted exception management strategies centered on managing the integrated business process, not just its individual activities. With a growing cost to the top and bottom lines of inadequate exception management, it’s increasingly critical to focus on exceptions that have the greatest and most sustained negative impact on operational efficiencies.

Yet, the emergence of distributed business models that have business processes spanning multiple organizational activities and functions, and that include trading partners at crucial junctures, highlights a critical challenge: the root cause of an exception is almost never where it’s measured and reported.

For example, a company could be reporting a lower-than-planned percentage of order fill rates in a distribution center (DC) and believe the problem had to lie with the people or practices in the DC. However, the real problem could easily have been that manufacturing had decided to produce longer runs to increase its productivity, which extended the time between the manufacture of specific items and caused certain line-order items to be out of stock. Alternatively, the expected shipments of key parts required for the manufacture of these line items could have been delayed, making it impossible for both manufacturing and distribution to perform at planned levels.

Assessing exceptions through an integrated business process is the only way to ensure you have identified the real source of the exception and are fixing both the root cause and the symptom.

Best-in-Class Exception Management: Feedback and Feed Forward

Enterprises with best-in-class exception management adopt a far more systematic and closed loop approach that includes both the proactive “feed forward” as well as the traditional “feedback” strategies. Both are executed better than at their competitors because of a ruthless determination to identify and manage root causes, but “feed forward” strategies create the most valuable competitive advantage.

“Feedback” strategies cycle the lessons learned at the conclusion of the actions to minimize the impact of an exception that has already happened; in other words, to try to avoid the same type of problem the next time around.

“Feed forward” strategies feed the corrective action required to a yet-to-be-made decision in the integrated business process, with the objective of diffusing or eliminating the consequences of the exception before these consequences are finalized.

For example, take a company that has invested heavily in a two-week trade promotion of a new product with a major retail chain. A common challenge is that, due to a combina-
tion of poor retail execution and widely differing acceptance in different cities and markets, the results of the promotion are highly varied.

With a feedback strategy, the manufacturer would carefully assess the root cause of the results, identifying the specific stores and markets with the most serious shortfalls, and develop plans to ensure that these shortfalls are effectively addressed for the next related promotion.

A “feed forward” strategy would identify the issues from point-of-sales data within the first few days of the promotion and seek to redeploy inventories to better match the emerging pattern of where the real demand is developing, and work with the retailers to correct issues caused by weak store-level execution.

This approach has the potential to ensure the company achieves the planned overall results despite the exceptions it experienced at the onset of the promotion.

**Collaborate Proactively Within the Enterprise and with Trading Partners**

Collaboration requires communication among impacted internal and external functions that constitute the integrated business process before you act to manage the exception. Simply communicating with business process partners after taking action guarantees that the action taken is, at best, of minimal value and, at worst, counterproductive.

Collaborating effectively has become especially critical for enterprises that interoperate business processes with business network partners, and in which the complex business process encompasses multiple tiers of manufacturing and distribution.

For example, the order-entry function can provide a due date on a complex multi-line order without assessing the capabilities of the different divisions to have sufficient inventories to satisfy the requirements. Communicating to these divisions after the setting of an infeasible due date does not serve a useful purpose and seriously undermines the achievement of corporate customer-service objectives.

Determining that a customer’s desired due date may not be achievable may arm order entry with a set of potential options, such as:

- Alternative acceptable substitute products or services;
- Alternate dates that may be acceptable;
- Higher menu-based pricing that justifies priority for this order; and
- Alternate sourcing strategies that may be feasible given enough response time.

The key here is that distributed processes require greater lead time to effect superior exception management, and that the greater the lead time provided, the greater the number of collaborative alternative courses of action available.

**Dynamic Decision Making Drives Exceptional Value**

The critical perspective here is that best practices demand that the exception management system embed decision-making and not just alerts. With increasing complexity arising from distributed business processes and global competition, there are a myriad of potential actions an organization can take after receiving an alert. Superior performance re-
quires that the system provide the best solution to the exception. Similarly, with elapsed time to action being a key in determining the effectiveness of the action, dynamically providing this solution provides maximum value.

Each potential exception has a different level of business value associated with it, and this value may change dynamically depending on current circumstances. The best-in-class capability calls for a dynamic system assessment of the prioritized sequence of exceptions on which the enterprise should act.

The ideal objective is having systems that can automatically determine the optimal course of action, learning from actual performance and increasingly handling the resolution without requiring direct human intervention. This capability effectively eliminates the need to triage based on the relative importance of a given exception. It also ensures consistency across the enterprise and allows implementation of a newly determined best practice immediately, without training and certification delay.

**Legacy Technologies Have Crippling Deficiencies**

However, are more traditional and legacy technologies equipped to take advantage of this major opportunity?

Legacy technologies were developed in an era of much less complexity, with significantly more time to identify and correct exceptions - and when reacting effectively after the fact was the accepted best practice. Given the fundamentally more challenging and unforgiving environment we face, legacy technologies, in most cases, have the following fatal flaws that render them incapable of enabling emerging best business and technology practices.

- **They can’t monitor business processes**, rather, the technologies are designed to monitor exceptions to individual functional activities.
- **They can’t perform root-cause analysis**, or don’t have the ability to frequently drill down through a product or customer master file. For example, a legacy system can decompose the exception in terms of granularity, but it can’t pinpoint the real cause of an exception in the integrated business process.
- **They can’t prioritize.** They’re unable to translate the business value impact of different exceptions, thus making it difficult to prioritize the exceptions that are the most urgent or that offer the most value to the business to correct.
- **They can’t operate in real time**, especially where the exception reporting comes from a variety of sources, and the notification may arrive hours after the fact, making it very difficult to deploy effective counter-measures.
- **They don’t solve problems.** The system of alerts may notify the individual or team that an exception has occurred, but it doesn’t have the intelligence or business process knowledge to recommend a solution, much less resolve the problem in an ideal “machine to machine” capability.
- **They don’t “learn.”** Every exception is handled and then, in effect, forgotten. There is no systematic means to learn from the analysis of cause and effect and establish the capability of preemptively preventing the next occurrence.
• **They don’t have visibility.** Visibility within exception management processes, such as status and history at each process step, plus a comprehensive audit trail.

Briefly, the best these legacy technologies can do is alert that an exception has occurred, acting as firefighter rather than taking preventive action.

**Stratex Networks: Managing from End-to-End**

Stratex, a leading manufacturer of wireless systems and solutions for cellular applications and broadband access, is a good example of how a company’s solution and approach made for a best practice in exception management. It has deployed more than 220,000 systems in more than 100 countries, representing one of the largest installed bases in its industry. The company is known for its quality, innovation, and technical superiority in delivering data, voice, and video communication systems, including comprehensive service and support.

Over the 20 years that Stratex has been in business, the telecom industry has experienced multiple upturns and downturns. The company has tackled these issues with a series of initiatives including outsourcing, downsizing, divestitures, joint ventures, and acquisitions. Stratex has carefully balanced its priorities by focusing on operational excellence, building an organization that has been able to adapt to various business cycles and reduce business and supply chain risks.

Stratex takes large orders from service providers, OEMs, and local carriers around the globe. Each order consists of a number of complex and expensive units that are engineered-to-order for each customer. Until a few years ago, these orders were initially sent to engineering, then batched and forwarded electronically to the CA-ManMan system. Error rates were high and often required human intervention to rectify mistakes; change orders and expedited late deliveries were the rule, not the exception. Additionally, the company struggled with meeting customers’ service-level expectations. In fact, direct intervention was often required to ensure customer commitments were honored. Manufacturing orders were generated and forwarded to appropriate locations for production and shipment, most often without insight into either the front-end order management systems, or the customer service system.

As operations managers struggled to move orders smoothly through engineering and manufacturing, the company was also challenged with incorporating new outsourcing partners into its existing organization and IT infrastructure. And, as business cycled downward, these partners were subsequently removed from the network.

Acknowledging the cyclical nature of the business, Stratex undertook a two-pronged strategy to solving the problem. The first step was to implement an IT infrastructure to (1) manage mission-critical processes across organizations, (2) enable the integration of multiple best-of-breed legacy systems into the infrastructure, and (3) prevent disruptions as the company continued its mergers, acquisitions, and divestitures. The second step was to replace legacy applications over time with standardized applications and technologies. Over the past few years, Stratex has successfully implemented systems from solution providers such as Vitria (BusinessWare), Siebel (customer relationship management), Agile (product lifecycle management), and Oracle (manufacturing applications).

Today, Stratex is profitable and continues to grow. It has used the BusinessWare framework as a foundation for managing many cross-organizational business processes. Orders
are entered into Siebel, which manages integration with the Agile PLM and Oracle manufacturing applications. Customer service is well managed. Most important, Stratex has been able to successfully adapt to the natural ups and downs in the telecom industry by delivering the right information to the right individuals for the right decisions.

Moving from Reactive to Proactive

Traditionally, telecom and other engineer-to-order manufacturers assigned customer service representatives (CSRs) to process customers’ orders. Internally, this included verifying product specs, ensuring manufacturing had the resources to produce, and confirming with the customer that the completed (that is, built to product design specifications) product would be shipped to the right place at the right time for the “agreed to” price.

Figure 1 represents a hypothetical order-processing scenario before and after installation of best-of-breed applications and a business-driven workflow. In the “before” scenario, the CSR commits to the customer that its transformer order would be delivered in three weeks. Although manufacturing gave the “OK,” it wasn’t possible to see that one of the components needed for sub-assembly B was on order and would not be received in time for production because of the disparate systems environment and lack of integration.

Figure 1: Hypothetical Order-Processing Scenario

Source: Aberdeen Group, August 2005
Providing the customer with incorrect information (denoted by an x) at the time of order acceptance, the issue remains undetected until the manufacturing order is sent to the B line a week later (denoted by a star) without all the parts needed to begin production. This causes a scheduling delay as the subsequent run is readied for processing. Next, when the scheduled final assembly and packaging is to take place, the transformer assemblies are not ready, once again creating a scheduling disruption. Finally, the customer is notified just prior to non-delivery that the product shipment will be delayed.

Because the part in question was not detected as missing until the order was well into the process, the order will either be shipped late (impacting customer service) or cancelled. The sub-assembly B order will be expedited to make up for lost time (incurring extra costs and potentially negatively impacting other customers).

By implementing best-of-breed solutions such as Siebel, Agile, and Oracle Manufacturing, Stratex was better positioned to electronically verify specifications, communicate with the customer, and begin the manufacturing process. However, it wasn’t until it added Vitria BusinessWare that these individual processes were linked together and automated from the time the customer order was received until the time it was shipped.

Today, as customer orders are processed, not only are the specifications and resources verified, but the transformer “bill of material” is exploded to determine the availability of all parts and materials prior to actually committing to the customer. By being able to detect this “exception” before it happens, the CSR is better prepared to negotiate a revised delivery date with the customer, avoiding any unpleasant communications with the customer and needless expediting, rescheduling, and added costs internally.
Chapter Three: Winning with Intelligent Exception Management

Best-in-class companies prioritize marketplace pressures very differently than their competitors do, leading them to focus logically on different sets of strategies. These enterprises are targeting a specific set of prioritized business process capabilities and enabling technologies to support these differentiated strategies. (Table 2)

Table 2: Best in Class PACE (Pressures, Actions, Capabilities, Enablers)

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Prioritized Pressures</th>
<th>Prioritized Actions</th>
<th>Prioritized Capabilities</th>
<th>Prioritized Enablers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Distributed enterprise increases difficulty of sharing information and alignment</td>
<td>Deploy closed loop exception management system for proactive decision making</td>
<td>Root cause analysis with forward-looking implications</td>
<td>Intelligent workflow that enables closed loop business process management</td>
</tr>
<tr>
<td>2</td>
<td>Volatile marketplace punishes inflexible/fixed-period planning</td>
<td>Establish formal continuous learning and propagation strategy</td>
<td>Harmonize top-down, bottom-up, and cross-functional metrics</td>
<td>Collaborative technologies to link internal and external information sources</td>
</tr>
<tr>
<td>3</td>
<td>Shortened decision cycles increase the opportunity cost of being wrong</td>
<td>Focus exception management process to support root cause analysis</td>
<td>Develop collaborative processes that have common metrics with customers and suppliers</td>
<td>Software to prioritize exception management based on profit implications</td>
</tr>
<tr>
<td>4</td>
<td>Market fragmentation demands ability to make dynamic mix decisions</td>
<td>Collaborate with key trading partners to ensure real time flow of required data</td>
<td>Empower cross-functional, dynamic decision making</td>
<td>Business intelligence to carry out intelligent variance analysis</td>
</tr>
<tr>
<td>5</td>
<td>Product/solution proliferation makes aggregate level analysis highly risky</td>
<td>Embed “feed forward,” as well as feedback, strategies into exception management best practices</td>
<td>Determine how to modify best business practices to embed preemptive analysis</td>
<td>Software to store and push/pull propagation of best results practices</td>
</tr>
</tbody>
</table>

Source: AberdeenGroup, August 2005

The Winning Competitive Framework for Exception Management

Best-in-class companies deploy a common set of characteristics that sets them apart from competitors and is a major source of superior performance (Table 3):
Table 3: Exception Management Competitive Framework

<table>
<thead>
<tr>
<th></th>
<th>Laggards (30%)</th>
<th>Industry Norm (50%)</th>
<th>Best in Class (20%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exception management process</td>
<td>Focused on functional silo/activity performance with no programmatic learning for future decisions</td>
<td>Loose linkage, mainly functional silo process, but limited review of root cause of exceptions</td>
<td>Closed loop, decision-centric process focused on integrated business processes</td>
</tr>
<tr>
<td>Exception management organization</td>
<td>Functional silo teams only; no cross-functional team</td>
<td>Cross-functional team performs formal operations review and recommends changes</td>
<td>Cross-functional team performs formal operations review and is empowered to manage process and implement changes</td>
</tr>
<tr>
<td>Exception management knowledge</td>
<td>Information at aggregate level for individual customers and market</td>
<td>Customer-specific information by major product; awareness of major-value chain causal relationships</td>
<td>Market segment information at customer/product/channel/geographical level; root cause logic defined</td>
</tr>
<tr>
<td>Exception management technology</td>
<td>Spreadsheets; no electronic linkage of performance phases</td>
<td>Basic ERP and planning applications with some database business intelligence</td>
<td>Closed loop exception management workflow software; root cause/pattern recognition analysis</td>
</tr>
<tr>
<td>Exception management performance metrics</td>
<td>Functional silo metrics not harmonized across silos; standard metrics not tied to emerging best practices</td>
<td>Metrics mainly at functional silo level with metrics aligned to strategic objectives</td>
<td>Metrics determined by specific plan objectives; cross-functional and top-down/bottom-up metrics are harmonized</td>
</tr>
<tr>
<td>Average % gross margin</td>
<td>15.3%</td>
<td>24.7%</td>
<td>32.7%</td>
</tr>
<tr>
<td>Average % profitable segments (1)</td>
<td>31.5%</td>
<td>41.3%</td>
<td>65.7%</td>
</tr>
<tr>
<td>Average % share of highest profit segments (2)</td>
<td>14.9%</td>
<td>20.1%</td>
<td>27.2%</td>
</tr>
</tbody>
</table>

(1) Percentage of all profitable micro-market segments in which the enterprise is competing.

(2) Percentage of market share of micro-market segments that represent the most profitable 25% (based on % gross margin) of all micro-markets in which the enterprise competes.

Source: AberdeenGroup, August 2005
Achieving Superior Performance Through Intelligent Exception Management

- **Process**: Closed loop and decision-centric, based on entire business processes extending across multiple organizations and systems;
- **Organization**: Cross-functional performance teams that determine or drive change;
- **Knowledge**: Detailed micro-market profitability data in common use, with automated facilitation and propagation of best practices;
- **Technologies**: Exception-management-specific, automating resolution and guided workflow, along with intelligent analytics; and
- **Metrics**: Harmonized, cross-functional, and top-down/bottom-up.

**Business Infrastructure Technology Requirements**

Having this fact-based, comprehensive competitive framework that outlines the strategy of enterprises with best-in-class exception management capabilities, the next step is to review business infrastructure technology requirements:

- **Automatic management of exceptions in core business processes.** Automating the identification and resolution of exceptions is mission critical to managing volume, complexity, and cost. There must be a common exception management infrastructure for multiple and inter-related end-to-end business processes.
- **Closed loop performance management.** Systems must enable analysis of results and identification of opportunities for improving best practices for exception management.
- **Real-time monitoring and analysis.** Real-time systems provide the maximum flexibility to deploy the optimal response to the exceptions and to be in position for a feed forward response to head off undesired consequences before they’re irreversible.
- **Collaboration.** Vocabulary-focused collaboration within the enterprise and among trading partners extends the impact and effectiveness of best-in-class exception management and determines the impact of the corrective action before commitment.

**Winners Start with Identified Pain Points**

Enterprises with best-in-class performance recognize that exception management is a large and potentially complicated set of processes crossing organizational boundaries. Therefore, rather than try to take advantage of every potential opportunity in a massive, complicated project, a best-in-class firm takes a very pragmatic and focused approach.

The core elements of this approach are to:

- Identify areas of high value potential and for which improvements in a specific business process would demonstrate near-immediate returns, that is, within three months;
- Develop a high-level business case quickly, using competitive benchmark data on exception management; and
Engage in an opportunity assessment to develop the budget-grade ROI necessary to justify the investment.

In support of this approach, Aberdeen research has determined that the following set of high-impact business planning processes across most enterprises hold the biggest value potential:

- Order fulfillment planning,
- Demand management,
- Inventory exposure management, and
- Product lifecycle planning.

**Order Fulfillment Planning**

**Definition:** Order fulfillment planning (Table 4) maps the specific line items of customer orders to available and planned inventory to ensure execution-level alignment of demand and supply and permit proactive management of customer-service issues.

**Example:** As a leading industrial manufacturer enters customer orders, line items are configured and electronically confirmed prior to being sent for production planning. As products move through various production steps, processes are monitored against predefined quality thresholds and date milestones. If thresholds or milestones are exceeded, triggers are sent to targeted customer service, financial, and other enterprise decision makers to avoid potential service-level agreement (SLA) issues.

Potential corrective actions can be taken relative to production delays or product defects prior to falling behind schedule or requiring customer notification. A Web-based workstation provides a 360-degree view of orders by presenting a blended view of the workflow, along with relevant data extracted from various legacy systems, enabling decision makers to place exceptions in context with other operational factors before responding.

**Table 4: Best-in-Class Results for Order Fulfillment Planning: $500M Company**

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Key Performance Indicator</th>
<th>Best in Class % Improvement</th>
<th>Annual Performance Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect order fill rate</td>
<td>Lost sales</td>
<td>35% reduction in lost sales</td>
<td>$6.1 million in revenue</td>
</tr>
<tr>
<td>Customer retention costs</td>
<td>Customer retention</td>
<td>18% decrease in lost customers</td>
<td>$5.9 million in revenue</td>
</tr>
<tr>
<td>Excess expediting costs</td>
<td>Distribution costs</td>
<td>30% reduction in expedited costs</td>
<td>$3.9 million in logistics costs</td>
</tr>
</tbody>
</table>

Source: AberdeenGroup, August 2005

**Demand Management**

**Definition:** Demand management (Table 5) starts with an existing demand plan used in the enterprise’s sales and operations plan, and is completed with the development of the
next demand plan as the result of the changes in assumptions. These changes are driven by actual market dynamics being significantly different from the existing plan, necessitating near-real-time development of a changed demand plan.

Example: The first few months of a new product launch is a critical time for all companies, particularly consumer products firms, in introducing new product into multiple domestic markets simultaneously. A firm was in the early stages of new product rollout across the U.S. when it had to make critical decisions regarding the deployment of new product inventory.

Because the company had implemented a common information platform, it was able to monitor supply and demand across end-to-end business processes in a number of markets. When thresholds were exceeded in slower-moving markets, triggers were sent to supply chain managers to stop shipping there. Conversely, as customer-order signals and POS data exceeded thresholds in potentially “hot” markets, messages were sent to supply chain managers to replenish product from existing inventories or trigger a signal to increase production.

Table 5: Best-in-Class Demand Management Results: $500M Company

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Key Performance Indicator</th>
<th>Best in Class % Improvement</th>
<th>Annual Performance Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion planning</td>
<td>Forecast accuracy</td>
<td>3.7% increase in gross margin dollars</td>
<td>$9.8 million in gross margin</td>
</tr>
<tr>
<td>Market mix management</td>
<td>Profitable segments</td>
<td>8.9% improvement in gross margin dollars</td>
<td>$8.4 million in gross margin</td>
</tr>
<tr>
<td>Demand change management</td>
<td>Lost sales</td>
<td>35% reduction in lost sales</td>
<td>$6.1 million in revenue</td>
</tr>
</tbody>
</table>

Source: AberdeenGroup, August 2005

Inventory Exposure Management

Definition: Inventory exposure management (Table 6) is the critical process enterprises use to minimize exposure to severe excess inventories in all forms - component/raw material, work in process and finished product – that would result from a lack of timely value chain co-ordination between demand and supply planning.

Example: A leading electronics manufacturer was able to dramatically reduce its on-hand inventory and that of its suppliers by having the ability to analyze the order-to-delivery process that spans organizations and applications. The company’s ability to monitor production-line speed in manufacturing against predefined thresholds enabled it to act based on real-time information.

For instance, if production is moving more quickly than planned, suppliers are notified in advance, enabling them to ship early and avoid a plant shutdown. Conversely, if production is stalled or behind schedule, suppliers are asked to delay shipping until the plant is up to capacity again. This has enabled a manufacturer and its suppliers to better synchronize processes and decrease inventory investments across their supply chain.
Table 6: Best-in-Class Inventory Exposure Management Results: $500M Company

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Key Performance Indicator</th>
<th>Best in Class % Improvement</th>
<th>Annual Performance Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component material exposure</td>
<td>Inventory write-offs</td>
<td>55% reduction in inventory write-offs</td>
<td>$5.9 million in cash flow</td>
</tr>
<tr>
<td>Finished product discounting</td>
<td>Price discounts</td>
<td>19% reduction in price discounts</td>
<td>$4.6 million in gross margin</td>
</tr>
<tr>
<td>Price protection exposure</td>
<td>Price support</td>
<td>21% reduction in support pricing</td>
<td>$3.2 million in gross margin</td>
</tr>
</tbody>
</table>

Source: AberdeenGroup, August 2005

Product Lifecycle Planning

Definition: Product lifecycle planning (Table 7) covers all activities from initial concept to retirement, and from pilot production to initial full commercial production. This is an especially critical area of improvement since poor planning decisions here are a prime cause of performance shortfalls in the supply chain or in fulfilling customer demand.

Table 7: Best-in-Class Product Lifecycle Planning Results: $500M Company

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Key Performance Indicator</th>
<th>Best in Class % Improvement</th>
<th>Annual Performance Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>New product introduction</td>
<td>Revenue plan attainment</td>
<td>17% improvement in new product revenue</td>
<td>$10.7 million in revenue</td>
</tr>
<tr>
<td>End-of-life management</td>
<td>Excess inventories</td>
<td>35% reduction in end-of-life inventories</td>
<td>$5.3 million in cash flow</td>
</tr>
<tr>
<td>Price change management</td>
<td>Price erosion</td>
<td>22% reduction in unplanned price discounts</td>
<td>$4.1 million in gross margin</td>
</tr>
</tbody>
</table>

Source: AberdeenGroup, August 2005

Example: A leading telecommunications company recently launched a new consumer product. To help promote the item, marketing offered a free handset to entice buyers. Since the divisions were not well coordinated, manufacturing wasn’t aware of this potential new demand until it began receiving order spikes in several markets. Because the fulfillment systems were coordinated, pre-defined thresholds prompted real-time signals to be sent across legacy systems to manufacturing so new handsets could be produced in time for the promotion.

This market success also created a secondary issue. Since so many customers wanted to take advantage of this offer, credit processing was taking too long, which meant the manufacturer was losing business when customers lost interest and hung up the phone. Careful monitoring and rapid correction enabled finance to lower the credit threshold to $200 from $400. Taking this additional risk on credit worthiness upped the volume, which exceeded any potential loss from faster credit checking.

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Chapter Four: Aberdeen Recommendations

Enterprises can effectively manage exceptions and develop competitive advantage in their key business processes by taking advantage of the following:

- **Define exceptions within business processes.** Map out your key business process, prioritized by those for which you’re experiencing the greatest shortfall in planned or required business-metric performance, such as customer retention, order fill rate, percentage of inquiries completed with the first interaction, etc. These are the exception areas upon which to focus. For each of them, identify the activity or decision that root-cause analysis identified as the source of the exception. Then, determine the nature of the characteristic of the activity or decision that triggers this exception. You now have a manageable and focused perspective of where the exceptions are generated within your business processes.

- **Focus on customer-facing exceptions first.** Customer-facing decisions and exceptions almost always have a “domino” impact throughout the value chain and, frequently, exceptions measured “downstream” of the customer are rooted in these key decisions. Therefore, for most enterprises, the greatest payback for an initiative to improve your business performance through superior exception management lies within the customer-facing activities and decisions. Enhancing customer-facing exception management should reduce exceptions in other value chain areas.

- **Prioritize based on benchmarking against best practices.** Take advantage of the benchmark data in this report to assess the value potential of improving your exception management capabilities in specific business processes and decision points. In case your initial assessment of the business value potential of improving exception management appears significantly lower than the best practices data in this report, you should reconsider whether there is an actual opportunity considerably more significant and impactful that you initially perceived.

- **Evaluate exception management-specific software.** The growing complexity and value implications of exceptions in integrated business processes increasingly require intelligent software designed specifically for exception management. This becomes especially telling in a highly fluid environment in which best practices may be changing continuously and there is a critical need to effectively embed these new best practices across the enterprise.

Exception management-specific software should be capable of:

- Automated resolution;
- Context-sensitive guided workflow;
- Real-time visibility and auditability; and
- Easily integrating with a variety of technologies, systems, and standards.
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Stan Elbaum is a senior vice president responsible for development and deployment of Aberdeen’s research in planning and advanced analytics, with particular focus on the business intelligence and sales and operations planning processes and technologies. He has more than 20 years of executive-level experience in industry, management consulting and software, as well as experience in market research, and brings a strong end user perspective to Aberdeen.

Elbaum has been deeply involved in the development and implementation of advanced analytics and S&OP processes and technologies in a variety of multi-national corporations in industries as diverse as consumer packaged goods, petrochemicals, high tech, and the pulp and paper industry. As CIO of a multi-national CPG company, Stan implemented the full suite of SAP R/3 with the Oracle database on an HP platform.

He has been a leader in introducing business and technology strategies aimed at providing competitive advantage through the leveraging of technology and the focus on proactive, profit-centric approaches.

Stan has contributed numerous articles to trade and business publications on how enterprises are successfully leveraging best practices and technologies for high ROI, and he is the expert presenter with Managing Automation magazine for business intelligence and customer relationship management.

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About
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- PRIORITIZE operational improvement areas to drive immediate, tangible value to their business
- LEVERAGE information technology for tangible business value.

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Achieving Superior Performance Through Intelligent Exception Management

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