



AI Enabling Business Process Management (BPM) Model That Can Resolve Boeing's Quality Problems

This article with its clickable links is available at:

<https://SmarterSolutions.com/AI-Enabling-BPM-Model-To-Resolve-Boeing-Quality-Problems.pdf>

AI Enabling Business Process Management (BPM) Model That Can Resolve Boeing's Quality Problems

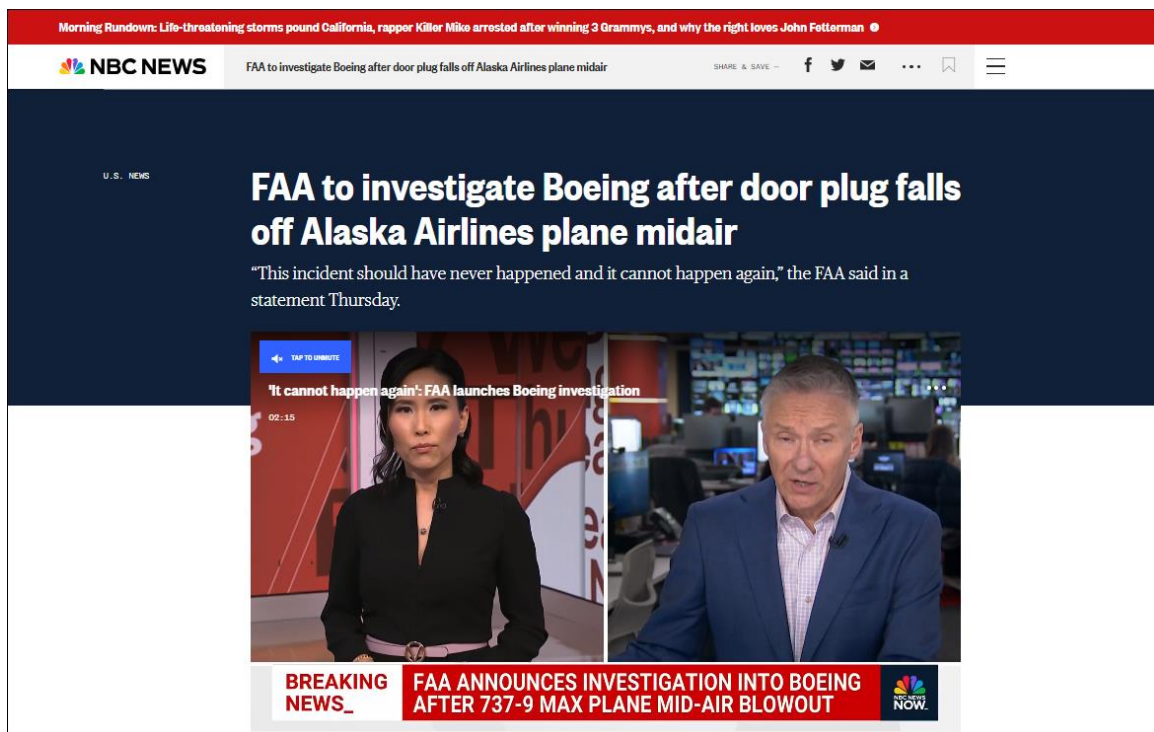
Forrest W. Breyfogle III
forrest@smartersolutions.com
512-695-4424 (M)
www.smartersolutions.com

Many articles describe how Boeing's manufacturing quality problems run much deeper than its January 5, 2024, door plug torn from the vehicle's fuselage in its airline's Boeing 737 MAX 9 jet.

[A February 28, 2024, NPR article](#) states, "Boeing must commit to real and profound improvements," FAA administrator Mike Whitaker said in a statement. "Making foundational change will require a sustained effort from Boeing's leadership, and we are going to hold them accountable every step of the way."

For Boeing to resolve its manufacturing problems, the company must "rebuild the foundation instead of patching the roof." Boeing needs a system that offers complete organizational transparency so that, among other things, "shooting the messenger" of bad news cannot occur. Boeing (and other companies) need to implement an AI Enabling Business Process Management (BPM) Model that will move the organization toward achieving the 3 Rs of business, i.e., everyone doing the Right things and doing them Right at the Right time.

The Integrated Enterprise Excellence (IEE) system is a vehicle to accomplish these critical organizational needs. IEE is a set of steps and a philosophy that intertwines leadership and management with a structured, data-driven approach that provides, among other things, a methodology for preventing organizational problems like Boeing's door plug quality issue, [as described by NBC News](#).



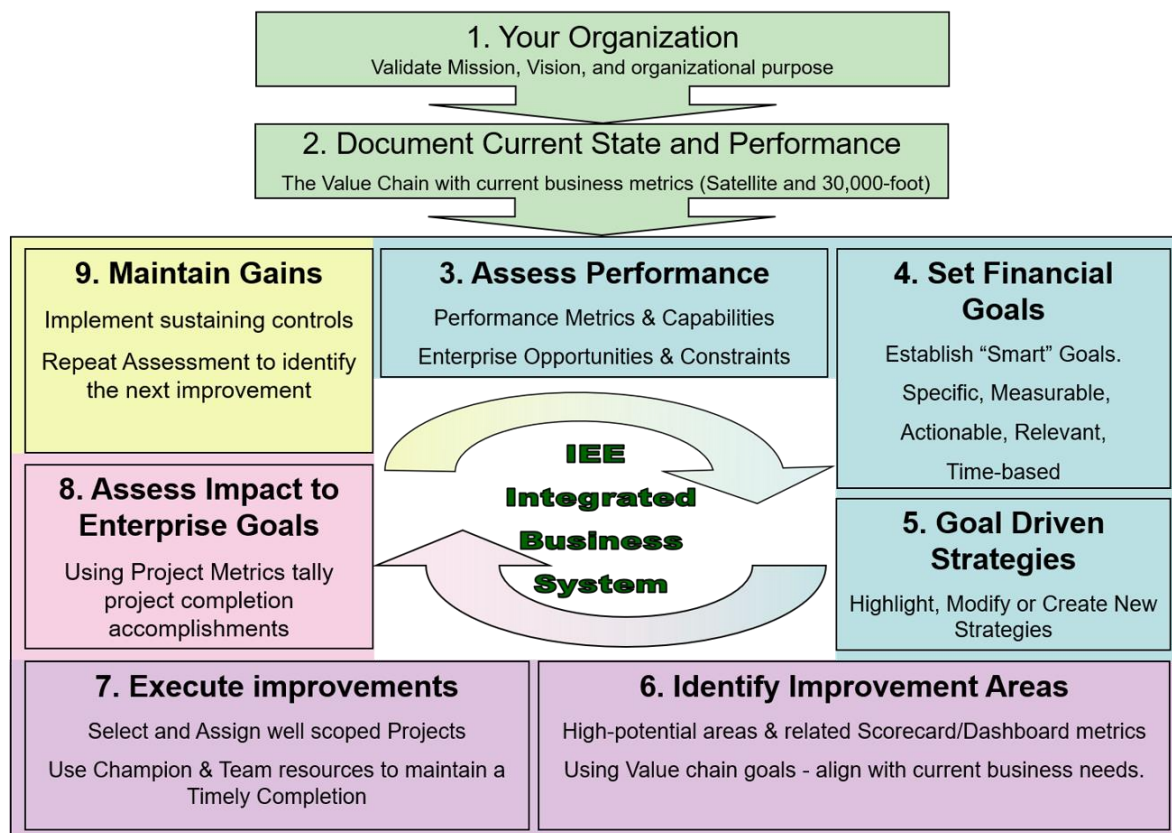
When building an aircraft, improving a process(es) is crucial whenever a non-conformance rate is unsatisfactory. However, this was not occurring at Boeing. [A report stated that in one 365 calendar days, 392 nonconforming findings occurred on 737 mid-fuselage door installations \(both actual doors for the high-density configurations and plugs like the one that blew out\). Boeing was finding more than one serious defect each day!](#)

The Boeing CEO and other executives should have this unacceptable quality process-output non-conformance rate reported at their fingertips via a mouse click. However, like many, if not most, organizations, this form of data reporting probably did not exist in Boeing.

[The Integrated Enterprise Excellence \(IEE\) business management system](#) addresses this metric-reporting issue. IEE offers a comprehensive approach to achieving sustainable success with BPM and operational excellence. The IEE 9-step system provides a structured pathway to enhance operational efficiency, strategic effectiveness, and the bottom line. AI can enhance the implementation of IEE in organizations.

To see the application and benefits of IEE and its 30,000-foot-level metrics reporting (with its free app) to an organization's data, as described below, contact Forrest Breyfogle at forrest@smartersolutions.com. One can schedule a video meeting session with Forrest through the link: <https://smartersolutions.com/schedule-zoom-session/>.

A Business Process Management (BPM) System



The nine steps of the IEE Business Process Management (BPM) model:

1. **Describe Vision and Mission**: The foundation of any successful organization lies in a clear vision and mission. This step involves articulating what the organization aspires to achieve and the fundamental principles guiding its journey. It sets the manner for the organizational culture and provides a clear direction for all its members.
2. **Describe Value Chain**: Understanding the organization's current functional processes (i.e., Operations, HR, IT, Safety, Maintenance, Sales, Marketing, etc.) and each functional-process-output metric ([e.g., non-conformance rates and on-time delivery], from a high-level process response reporting not bounded by the calendar year) is vital. ***With the IEE system, everyone authorized (CEO to line operator) from an organizational value chain can see documented processes and their current metric performance (e.g., non-conformance rates, on-time delivery, lead time, and customer satisfaction).*** In IEE, the tracking of functional-process-output metrics is at a high 30,000-foot-level level instead of a table-of-numbers or red-yellow-green scorecard. A published article and video in a link show the benefits of this form of reporting, "[KPI Management: KPI Metric Reports that Lead to the Best Behaviors](#)." ***If Boeing were using the IEE system, everyone authorized would see their airplane's production quality (non-conformance rate) problems so that these issues could be promptly resolved by improving production processes (Step 6).***
3. **Analyze Enterprise**: A comprehensive analysis of the enterprise helps in determining the organization's strengths, weaknesses, opportunities, and threats. This holistic view enables leaders to make informed decisions, considering internal and external factors that could impact the organization's performance. The tools used in this step include statistical hypothesis testing (e.g., is there a difference between departments to determine departments to benchmark or improve) and non-statistical tools. Assessments in this step include competitive analyses, voice of the customer feedback, and Theory of Constraints (TOC). A TOC assessment may determine that the organization's bottleneck is its sales and marketing process, not operational procedures. ***If Boeing were using the IEE system, examining the organization's IEE value chain would show its high manufacturing non-conformance rate problems (e.g., door plug) that needed resolution by improving a manufacturing or supplier process(es) (Step 6).*** AI can enhance this IEE analysis process.
4. **Establish SMART Financial Goals**: Setting Specific, Measurable, Achievable, Relevant, and Time-bound financial goals is crucial. An example high-level economic metric response is EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) tracked monthly (not bounded by calendar year), where an organizational goal is to statistically increase mean monthly EBITDA by 3% in 9 months. This monetary goal is achieved through improving high-impact process procedures, as identified and shown how to improve from the following IEE system steps.

5. **Create Strategies:** With a clear understanding of the organization's vision, mission, value chain, and financial objectives, the organization's next step is the development of targeted strategies. An effective strategy statement leads to work efforts that leverage strengths and opportunities while mitigating risks and weaknesses and aligning with the stated financial goal(s) of step 4.
6. **Identify High Potential Improvement Areas:** This step involves pinpointing areas within the organization that offer the highest potential for improvement. Identifying these areas and their corresponding metrics to improve is crucial for developing an effective organizational [Enterprise Improvement Plan \(EIP\)](#) so that efforts align with achieving step 4 financial goals. What to avoid is setting goals that can lead to evil, if not destructive, behaviors, as [Wells Fargo did with setting up fake accounts to meet a metric goal, resulting in three billion dollars of fines by the US government](#). *If Boeing were using the IEE system, an EIP assessment would highlight the need to improve specific manufacturing processes to improve quality metrics, e.g., door-plug non-conformance rate.* AI can enhance the creation of an EIP so the business as a whole benefits.
7. **Execute Improvement Projects:** [Implementing Lean Six Sigma and other improvement projects](#) (e.g., a Lean Kaizen event) to enhance EIP metrics is a critical step. This process improvement effort provides the details for executing strategies and operational improvements to drive organizational growth and efficiency. *If Boeing were using the IEE system, a team would be assigned EIP tasks to improve its non-conformance rate problems by executing process improvements in various areas of its manufacturing and supplier processes. After beneficial process improvement efforts, future non-conformance rates would decrease (hopefully to zero), e.g., door-plug non-conformance rate.* AI can enhance the execution of process improvement projects.
8. **Assess the Impact of the Improvement Project:** After implementing improvement projects, it's essential to [show the statistical significance of the project's 30,000-foot-level metric improvement](#), which, via an EIP, shows project-metric alignment with the financial goal established in step 4. This evaluation helps in understanding the effectiveness of the strategies and projects undertaken. *If Boeing used the IEE system, successful process improvement projects from Step 7 would display significantly reduced non-conformance rates in its IEE value chain (Step 2).*
9. **Maintain the Gain:** The IEE system's final step is ensuring that the improvements made are sustainable. It involves establishing mechanisms to monitor performance and maintain the gains achieved through the previous steps. The collective tracking of organizational 30,000-foot-level functional metrics automatically updated in its corporate value chain (with access 24/7 by all authorized individuals) has many benefits. [Enterprise Performance Reporting System \(EPRS\) software](#) is a means for accomplishing this task behind an organizational firewall. **Step 9 loops back to step 3 so that the whole organization can experience continuous improvement from a high-level vantage point.**

Comparison of IEE to other systems

The IEE system has many benefits compared to other methodologies, as this table describes.

Comparison of Systems					
SELECTED ATTRIBUTES ++: Attribute included +: Partial/incomplete Inclusion -: Not included	Integrated Enterprise Excellence (IEE)	Typical MBA Program	Traditional Six Sigma	Traditional Lean	Original Balanced Scorecard
Defines process for improvements at operational/project level	++	-	++	++	-
Defines a process for improvements at enterprise level	++	-	+	+	-
Derives improvement projects from enterprise value chain metric performance needs	++	-	-	-	-
Uses DMAIC process to implement process improvements	++	-	++	+	-
Integrates enterprise scorecards, strategic planning, business improvements, and control using 9-step IEE system	++	-	-	-	-
Supports standardized graphical representation of selected data (dashboard)	++	+	-	-	+
Aligns enterprise level business metrics (satellite-level) and operational metrics (30,000-foot-level)	++	-	-	-	-
Includes process for definition of rational metrics that are aligned at operational and enterprise level	++	+	-	-	-
Includes process for distinguishing between "common cause" and "special cause" problems so as to eliminate firefighting	++	-	-	-	-
Uses a traditional approach for business management and/or making process improvements	-	++	++	++	++

More IEE Information and its Benefits to BPM

- Article about IEE: [What does the Integrated Enterprise Excellence Business Management System solve?](#)
- Book (Novel, available as an audiobook), Part one of two: [Management 2.0: Discovery of Integrated Enterprise Excellence \(Management and Leadership System 2.0 Book 1\)](#).
- Book (Novel, available as an audiobook), Part two of two: [Leadership System 2.0: Implementing Integrated Enterprise Excellence \(Management and Leadership System 2.0 Book 2\)](#).
- IEE Metric Reporting (Published Article and Video): [KPI Management: KPI Metric Reports that Lead to the Best Behaviors](#)
- A Business Metrics Dashboard that Resolves Commonplace Metric Reporting Problems Article: <https://smartersolutions.com/A-Business-Metrics-Dashboard-that-Resolves-Commonplace-Metric-Reporting-Problems.pdf>
- Free IEE 30,000-foot-level Reporting App: <https://smartersolutions.com/free-business-process-management-software/>
- IEE System Patent Press Release: [Business Management System Patent Press Release](#)
- Patent about the IEE System: [Systems and Methods for Measuring and Reporting Enterprise Performance and Making Process Improvements](#)
- IEE Enterprise (behind the firewall) Software: [Enterprise Performance Reporting System \(EPRS\) software](#)

Next Step

To see the application and benefits of IEE and its 30,000-foot-level metrics reporting (with its free app) to an organizational dataset, contact Forrest Breyfogle at forrest@smartersolutions.com. One can schedule a video meeting session with Forrest through the link: <https://smartersolutions.com/schedule-zoom-session/>.