Anatomy of a Business Intelligence Strategy Document
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Introduction

Our recent business intelligence (BI) survey showed significant positive correlation between having a BI strategic plan and the ability to create a data-informed decision-making culture. In this document we share our view of the attributes and structure of a BI plan that will effectively communicate both a strategy and its high-level operational aspects in a way that will win the hearts and minds of your executive colleagues and provide a cohesive vision for your BI teams. Of course, your successful plan should be carefully tailored to your individual organization by adding, deleting, or modifying content within the suggested sections.

Structure of a Successful BI Strategy Plan

Outline/Overview

- Foreword/Introduction
- I. Executive Summary
- II. BI Support of Enterprise Strategic Goals
- III. Plan Context and Scope
- IV. Future State of Envisioned BI and Gap Analysis
- V. BI Governance
- VI. Alternatives Discussion
- VII. Funding
- VIII. Assessment
- Appendices

Foreword/Introduction

Indicate the reason for creating the plan and why now is the right time for the enterprise to endorse a plan: touch on both strategic drivers (e.g., We are entering into risk-sharing arrangements that require analytic competencies) and tactical drivers (e.g., We have an inefficient mechanism for governing tool choices and investments and this plan will align our vision and investment strategies). Acknowledge contributors and advisors and the process used to develop the plan. Include an explanation of what you intend to accomplish with the plan development and communication. For example, is it intended to be a high-level document to obtain approval to evaluate or implement a new direction? Or is it intended to convey many of the critical details to support a change in overall approach and strategy?

I. Executive Summary

Use the executive summary to convey the BI vision and introduce a common lexicon for future discussions and communications. Write your plan first, leaving this section for last. Key themes and consistent descriptive language that emerge as you develop the body of the document should be included in this executive summary. Consider including advisors and contributors to the plan to show breadth and depth of perspective. Among other things, include an explicit mapping of your BI initiatives to the enterprise’s operational and strategic goals, the value of the plan, and the timeframe for realizing the value of the BI deliverables. Be clear in the description of what will be different following the implementation of the tools and functions outlined; describe the current state and intended future state. Provide an explanation of what would change with the adoption of this strategy or plan, and why it should change. Identify whether the changes are a major overhaul or something less pervasive. For example, “We will continue with our core strategy of purchasing point solutions but will need more funding and resources for data governance and tools. We will also need to change our BI governance by adding
members from affiliated organizations.” You may want to reference the “BI Maturity Model” (Table 1) to call out specific areas of advancement.

### Table 1: BI Maturity Model

<table>
<thead>
<tr>
<th></th>
<th>Fragmented</th>
<th>Enterprise Perspective</th>
<th>Advanced Analytics</th>
<th>Intelligent Process Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BI architecture</strong></td>
<td>Limited, dominated by departmental point solutions</td>
<td>Centralized infrastructure and strategy, departmental solutions are integrated into an enterprise strategy</td>
<td>Advanced algorithms analyze and enrich data and publish insights back to centralized infrastructure. Some insights embedded into core workflow applications.</td>
<td>Tight integration with core workflows. Algorithms make decisions in many repeatable core operational processes.</td>
</tr>
<tr>
<td><strong>Data sources / data currency</strong></td>
<td>Limited to data available within the point solution silo.</td>
<td>ETL² combines data from high value primary sources³ such as EHR⁴, revenue cycle, and other key operational systems.</td>
<td>ETL incorporates secondary⁵ sources, unstructured data (e.g. narrative text, genomes, images), and may incorporate unconventional external sources (e.g. social media, IoT⁶). Increased emphasis on near real-time data for some sources.</td>
<td>Emphasis on real-time data and calculation to drive automation in operational processes.</td>
</tr>
<tr>
<td><strong>Use of analytics</strong></td>
<td>Departmental reporting</td>
<td>Enterprise KPIs⁷, operations analysis, population health surveillance</td>
<td>Demand projection, population risk projection, contract simulation, process optimization, research</td>
<td>Clinical protocol automation, resource scheduling optimization, procurement automation</td>
</tr>
<tr>
<td><strong>Analytical techniques</strong></td>
<td>Descriptive statistics (counts, sums, averages)</td>
<td>Ad-hoc drill-down, self-service BI, simple trend projections</td>
<td>Knowledge discovery, natural language processing, statistical classification and projection</td>
<td>Business and clinical goal optimization, decision modeling, constraint programming</td>
</tr>
<tr>
<td><strong>Data models</strong></td>
<td>Limited, single-purpose models</td>
<td>Shared, reusable models</td>
<td>Unstructured data, late binding of models⁸</td>
<td>Decision modeling, business constraints, justification for actions</td>
</tr>
</tbody>
</table>

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1) Red cells indicate the primary distinguishing characteristic of each maturity phase.
2) ETL = Extract, transform, and load, a class of tools for moving and manipulating data between disparate systems.
3) Primary sources are those captured directly by the health system or partners as part of operations.
4) EHR = Electronic health record.
5) Secondary sources are those captured by processes external to organization’s direct relationship with the patient. Socioeconomic data, geographic data, and social media are common examples.
6) IoT = Internet of things.
7) KPI = Key performance indicators.
8) Late binding is sometimes referred to as “schema on read.”
## II. BI Support of Enterprise Strategic Goals

Explicitly connect your BI initiatives to the strategic goals of your enterprise. In addition to the obvious deliverables that will be provided directly to stakeholders (e.g., dashboards, reports), be sure to include back-end infrastructure (e.g., enterprise data warehouse [EDW], extract processes) as a means of tying its fundamental value to all the strategies. Alignment can be addressed in narrative form and as a grid aligning your BI initiatives with the larger goals. Table 2 is a sample of an alignment grid showing key organizational strategic goals as columns and key plan components as rows. A high-level grid is a good communication tool and reference point, but is not sufficient to communicate the full contribution of BI. It is best to complement any high-level visual

<table>
<thead>
<tr>
<th>Data governance</th>
<th>Limited or no governance, localized decisions about use and usability of data</th>
<th>Common policies and standards, centrally-managed priorities, shared documentation, focus on data quality and consistency, basic MDM&lt;sup&gt;9&lt;/sup&gt;</th>
<th>Advanced MDM, semantic data normalization, source system change control and monitoring</th>
<th>Active supervision of decision algorithms, periodic performance review and adjustment of goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools</td>
<td>Independent choices for departmental needs; redundant products</td>
<td>Centralized platform for ETL, database management, reporting, and visualization</td>
<td>Advanced statistical analysis, data mining, text analytics, big data platforms, advanced MDM</td>
<td>Rules engines, deep integration with operational applications (including EHRs)</td>
</tr>
<tr>
<td>Skills</td>
<td>SQL, Excel, basic data modeling, basic visualization</td>
<td>In-depth knowledge of physical and logical data modeling, descriptive statistics</td>
<td>In-depth knowledge of statistics, data mining, text analytics, advanced MDM</td>
<td>Optimization, rules engines, process engineering</td>
</tr>
<tr>
<td>Culture/enterprise data literacy</td>
<td>Value of data under-appreciated. Decisions based on limited or no data.</td>
<td>Champions emerging, growing emphasis on data governance and data-driven decisions</td>
<td>Broad based data literacy, models inform strategic decision making, active identification and pursuit of analytics opportunities by senior leaders</td>
<td>Confidence in advanced decision support and process automation of operational processes</td>
</tr>
<tr>
<td>BI governance/organizational structure</td>
<td>Local control</td>
<td>Core BI team or center of excellence. Departmental analysts coordinate changes with core team</td>
<td>Resources harmonized between central core and federated stakeholders. Strong governance process in place</td>
<td>Active collaboration by process stakeholders in development of decision models</td>
</tr>
</tbody>
</table>

<sup>9</sup> MDM = Master data management, a set of tools and processes for deduplication, standardization, and management of data quality. Enterprise master patient indexes (eMPI) are a specialized category of MDM tools.
exhibit with a brief explanation of how each component will support the organizational goal.

**Table 2: Sample Grid to Show Alignment of Strategic Goals with Key Plan Components**

<table>
<thead>
<tr>
<th></th>
<th>Quality</th>
<th>Growth</th>
<th>Costs</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add normalized clinical data to EDW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define data contributions to benchmarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recruit analytic and visualization skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish data governance processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase data model from X Co.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**III. Plan Context and Scope**

Define the scope of the plan by specifying inclusions and exclusions, as well as timeframes and (optionally) resource requirements. Note what is in and what is out. Consider subject matter areas that may be out of scope (e.g., research). Set the time horizon for the plan and indicate whether you consider this to be the final or interim design; if interim, also address whatever is known about the long-term final approach (e.g., favored vendors for the integrated delivery network [IDN] or target characteristics.) If this is the first in a series of plans, lay out the intended scope and dates for future installments (e.g., This plan outlines the BI architecture and in future plans we will detail budget and staffing requirements).

Define the overall context within which the plan should be considered. How does this plan relate to other strategic plans—such as the enterprise strategy or the IT strategy? Also set the context for the BI proposal itself: are you a participant in a larger BI network for which you will provide source data and receive aggregate or benchmark data in return? Are you an aggregator of data for your extended network? If your network is still developing and being defined, address how BI will be positioned within that evolving enterprise.

**IV. Future State of Envisioned BI and Gap Analysis**

In the introduction to this section, reference the appendices that contain detailed information about your existing BI architecture, software, budget, outputs, staffing, and governance. Suggested appendices are included at the end of this document.
A. Inputs, Outputs, and Mechanisms

1. Future Vision

This section should provide a high-level view of the strategically aligned initiatives introduced in section II. Describe the envisioned BI environment by discussing, in general, the source systems and data, and the mechanisms to produce the outputs and their content. The outputs may be standardized “end products” (such as reports) or may be data sets intended for further analysis by end users (such as data marts). For example, KPI scorecards may be produced monthly by analyzing data from the electronic health record (EHR) and budget systems and made available on the organization’s intranet. A second example might be a clinical data mart populated with data from the acute site EMR and the clinical data set from an affiliated extended care facility, and provided for study and report creation by the quality department. This section may be developed as a narrative or as a systems diagram such as that in Figure 1. If specific reports or data sets have already been developed, include those in an appendix.

Figure 1: Systems Diagram

2. Gap and Remedy

Describe the gap between your current capabilities and the envisioned capabilities. For example, you may intend to automate the manual process of collecting and aggregating the financial reporting of the individual entities within your enterprise. Describe the current process, the targeted process, and the necessary remediation. In this example, it would be appropriate to highlight changes to infrastructure, process, and data governance.

B. Organization and Staff

1. Future Vision

Outline the intended organizational structure; be sure to include by whom resources will be managed (e.g., inside or outside of the central BI department). If you are introducing new roles, include a brief explanation here and consider including a full description in an appendix. A more complete explanation will be
particularly useful for positions that directly serve the interests of a stakeholder group (e.g., a subject matter expert [SME]). To the extent it is known, you may wish to indicate numbers of staff and skill sets.

2. Gap and Remedy

In this section, outline the existing organizational structures or gaps in structure. Note existing staff and the augmentation required to deliver the BI vision. If applicable, indicate any significant skill requirements for existing staff, particularly staff outside of the IT organization where new skills will be necessary to transform the culture to a data-informed decision-making discipline. Consider the staffing required not only to build out the BI infrastructure and outputs, but also the staffing and training requirements to effectively use those outputs to achieve the business and clinical objectives of the organization. This latter category may include SMEs working on central committees and task forces such as data governance and local committees such as department performance monitoring.

C. Architecture and Tools

1. Future Vision

In this section, outline the planned architecture for the BI enterprise; include the infrastructure and applications and their connections to the existing environment. System diagrams may augment the narrative in this section. If you are introducing new vendors and/or products, then include an explanation of the basic functionality. Be sure to associate tools with the enterprise goals they will support. If appropriate, reference an appendix for price information.

If the new or upgraded BI enterprise vision includes a long-term goal and a series of interim steps, be sure to differentiate the two and create a timeline (e.g., the EHR solution set is targeted but not yet full-functioning, so interim solutions will be used to fill the gaps).

If architecture and tools have not yet been decided, use this section to address the process by which the decisions will be made.

2. Gap and Remedy

Indicate the existing BI infrastructure and portfolio, including reporting modules that may not have been considered “BI,” but will now be replaced or subsumed by the new vision. Map out the migration or implementation plan, including sequence and timelines.

D. Remedy Timelines/Calendars

In this section, combine high-level milestones from sections IV.A, IV.B, and IV.C for an overall BI timeline and add any relevant dates for these other elements:

- Executive decisions (e.g., plan approval, tools)
- Cancel or upgrade related systems
- Key business dates (e.g., risk contract due dates)

V. BI Governance

In this section, outline the new or reconstituted committees that will guide the BI work. Include the committee membership, roles and responsibilities, basic functions, and relationship to other (new and existing) structures. At a minimum, consider the:

- BI Executive Committee
- Architecture and Tools Committee
- Data Governance teams
- Project Management Office
- Prioritization Committee

Include some statements of process or how the process will be defined and communicated.
VI. Alternatives Discussion

In this section, review the options evaluated but not recommended and explain the reasoning. Describe the alternate proposal(s), the process by which it/they were reviewed, and the final determination. The descriptions provided in this section should adequately represent and address any significant partisan issues that were encountered during the planning process.

VII. Funding

In this section, include an overview of all expenses associated with the plan: capital, operating, one-time, recurring, required, and optional. Some organizations may choose to separate the plan and budget. Details may be provided in an appendix.

VIII. Assessment

In this section, describe how the value of the BI deliverables will be assessed. Using the enterprise goals, and BI support of those goals (outlined in section II to represent the ultimate value targets), commit to measurements and timeframes that will be provided to track progress toward those targets. Specifics may be saved for a more operationally focused plan, but you may wish to include an example as a means of communicating your overall intent. For example, if an enterprise goal is to improve the quality of health care, your assessment plan might include a commitment to work with leaders to identify the specific clinical tactics (such as unplanned readmissions) and relevant BI support; and a biweekly dashboard correlating the rates of unplanned readmissions and the rates of physician compliance with treatment guidelines. In this example, the dashboard is the tangible BI asset that enables the management of the quality goal.

Appendices

Following is a possible list depending on the exact purpose of your strategy document:

- Current architecture
- Current software portfolio
- Current budget detail
- Organization charts: IT and governance
- Current outputs (scorecards, reports, etc.)
- [Optional] Specific analytic projects underway or envisioned (e.g., readmission dashboards or advanced decision support transaction feed for diabetes protocols)
- [Optional] List of other relevant documents (e.g., enterprise strategy, IT strategy)
- [Optional] Glossary
- [Optional] Other relevant educational material (e.g., Advisory Board notes and presentations)