



Dashboards, metrics, and reports are unquestionably valuable to executives looking to make strategic decisions and improve operational performance. However, many times the actual information being shared leaves a feeling of “so what” to the reader. Although these reports are packed with visually stunning graphs, figures, and colors, they often lack relevance or actionable insight. In the worst cases, the metrics, and Key Performance Indicators (KPIs), can create conflicting behaviors that ultimately limit an organization from optimizing its ability to achieve its strategic and operational goals. There are three common areas that significantly hinder companies from gaining optimal value from its Business Intelligence (BI): Alignment, Data Quality, and Purpose.

## Alignment

Misalignment occurs when measurements do not support business goals or they drive conflicting behaviors among teams that do not optimize cross-team performance.

For example, let’s say that a company is focused on driving the volume and efficiency of sales closed each month. Although sales processes vary greatly across products and services, there are a few ways an executive can evaluate performance:

- Average revenue per sales executive
- Monthly sales by product lines
- Average duration of sales opportunity to contracts signed
- Percentage of qualified opportunities converted to a sold contract

In addition, this company has an order fulfillment team to ensure the timeliness and quality of fulfilling the sale. Depending on the type of product or service being sold, different measures are often needed to evaluate the order fulfillment process, such as:

- Percentage of orders delivered on time
- Average number of order changes needed post contract
- Percentage of cancelled/returned orders
- Customer satisfaction survey results

### CORPORATE PERSPECTIVE

If the corporate goal is to increase market share while maintaining customer satisfaction, then the metrics appear to be in line with this goal for the teams. However, if corporate goals are to cut operating sales costs to limit the risk of going out of business, then these measurements are not properly aligned at the corporate level and should either be reevaluated or made a lower priority with relation to other performance metrics.

### INTERGROUP PERSPECTIVE

Even when individual group metrics drive behaviors that support corporate objectives, there is still a good possibility the end-to-end processes/behaviors do not optimize a company’s ability to achieve its goals.

Continuing our story with the sales and order fulfillment groups above, the sales organization gets compensated based on the amount of sales revenue under contract each month; however, there’s no measurement to hold them accountable for their role with supporting the quality, timeliness, and customer satisfaction associated with the receipt of the sold products/services. For instance, a sales executive may have completed a contract that could have any of the following issues that would make it difficult for order fulfillment to meet its objectives:

- Inventory not on hand or insufficient lead time to backfill
- Product or service design (for complex sales) was done poorly, resulting in either multiple follow-up calls and rework or a product not meeting customer expectations
- Unrealistic delivery date due to demand and capacity constraints

Of course, we all want to believe that our internal company processes adequately account for limiting the likelihood of these challenges. However, given the complexity and interdependencies that many businesses have with their business models, it’s quite common for breakdowns in process to happen without proper definition and alignment.

## Data Quality

“Garbage in, garbage out” is a common phrase that’s attributed to poor data quality. Oftentimes, however, there will be plenty of “good” data mixed in with some “bad,” so in many situations the BI motto should be, “Some garbage in, quality information out.”

Some of the major reasons for poor data quality are:

1. Loosely defined business definitions — the same word has a different interpretation/meaning by different people involved in the BI reporting process
2. Lack of business rule enforcement — front end and/or data processing systems NOT enforcing business rules properly or consistently
3. Timeliness — the data being used is either too “old” or “improperly timed” to provide value to the business

### DEFINITIONS

Semantics are important for BI organizations that have even slight variations for common terms, such as prospects, customers, sales, products, orders, complaints, etc., often create quality and cost issues for business and IT stakeholders.

It’s critical for business and technology stakeholders to be able to use common language (and written definitions) as a basis for “what” is important and “how” those items relate to each other. A common example would be how customers, sales revenue, product, and region are all defined with respect to both sales and product management. If sales and product managers are compensated for increasing revenue and market share, then it’s important that the data used to evaluate performance is defined clearly and consistently.

### BUSINESS RULE ENFORCEMENT

Business rule enforcement is also important and requires both business users and system developers to be aligned on those requirements and enforce them correctly. Conducting adequate analysis and training on the business processes that are expected to be followed, and the role that each person or system is responsible for will facilitate high-quality data more efficiently.

For instance, let’s say a company’s goal is to optimize its on-time delivery of a product or service. The process requires orders to be entered properly,

validated, packaged, and delivered, most likely by several people and supporting systems, which will also likely have multiple points of failure such as:

- Sales representative entered a wrong product code on the order
- Order-entry system did not validate the product was available to be delivered by customer-requested date
- A customer calls back to change an order, however the information from the original order has not been updated in the reporting system to reflect the new order and expected delivery information

In each of the situations listed above, the role that various people and systems play for ensuring quality data for BI failed. To ensure high quality and effective BI insights, it is important for these types of human and system failures to be identified and associated with call-to-action reports.

The call-to-action report concept is one in which specific people and/or systems are flagged for having information that appears to be erroneous or not in alignment with other business areas, and thus someone needs to look into the situation and correct it. Call-to-action reporting is critical for driving both immediate data corrections as well as longer term employee training and system improvement initiatives.

### TIMELINESS

Determining the optimal “timeliness” of data can be a somewhat difficult and subjective challenge that may have elements that are outside of an organization’s direct control. Defining and supporting timeliness often requires an artful balancing of the following principles:

- How accurate does the data need to be for supporting good decisions and actions?
- How quickly does one need to take action from the information created from the data?
- How much control does one have with harvesting the data?

For example, let’s say that we are a pharmaceutical company that develops and sells cancer fighting drugs. Accurate patient response data related to our drugs

01001010011000010110001001101001011000010110111001101100111001101101010101100  
0111010001101001011011001100111010010100110000101100010011010010110000101101100010000010000110110111011011001110011011010101011011  
1011011100111001101101010110110001110100011010010100110000101100010011010010110000  
10110111000100000100001101101110110111001110011011010101100011101000110100101101100110011101001010  
011000010110001001101001011000010110110001000001000011011011101101110011100110110101011010001110100  
011010010110111001100111010010100110000101100010011010010110000101101110001000001000011011011101101110  
011100110110101010110001110100011010010110110011001110100101001100010011010010110000101101110  
0010000001000110110111011011100110011011101011010001101000110100101101100110011101101001100001  
011000100110100101100001011011000100000100001101101110110111001110011011010101011000111010001101001  
01110101011011000111010001101001011011001100111010010100110000101100010011010010110000101101100010000  
00100001101101110101110011001101010110100011010001101001011011001100111 01001010011000010110001  
001101001011000010: THERE WILL BE PLENTY OF "GOOD" DATA MIXED IN WITH SOME "BAD" 10100011010010110111  
0011001110100101001100001011000100110100101100001011011000100000100001101101111010111001110011011101  
01010110001110100011010010110111001100111010010100110000101100010011010010110000101101100010000001000  
01101101110110111001110011011010110110001110100011010010110111001100111010010100110000101100010011010  
01011000010101110001000001000011011011101101110011100110111010110001101000110100101101110011001  
110100101001100001011000100110100101100001011011100110011101011100111001101110101011011  
000111010001101001011011100110011101001010011000010110001001101001011000010110111000100000100001101101  
11101101110011100110111010101101000111010001101001011011100110011101001010011000010110001001101001011000  
01010111000100000100001101101110101110011100110111010110001110100011010010110111001100111010010  
10011000010110001001101001011000010110110001000001000011011011101101110011100110111010101101100011101  
00011010010110110011001110100110100101100001011011100010000010000110110111011011100110011101101  
1100111001101110101011011000111010001101001011011100110011101001010011000010110001001101001011000101101  
110001000010000110110111010111001110011011010101100011101000110100011010010110111001100110100101100  
001011000100110100101100001011011100010000010000110111101101110011100110111010101101000111010001101  
001011011100110011101001010011000010110001001101001

10 1001 1101110 0010

010 01001

111

100011 110 011000

00100 11011

10 0011 010001101001

00001 1010 1000 110

1011

000110100 111 10011000010

110100

110 10110001 01101 01001

would be very important for guiding us on which products to market and produce. However that information is not as time sensitive as the information the distribution group may need for recalling a “bad production batch” that’s gone out. In terms of data control, the manufacturing group may be dependent on Federal Drug Agency (FDA) approval prior to scheduling the manufacturing of that drug for the public. Obviously, the lot sizes for that manufacturing would also be influenced by marketing’s assessment of demand for the new product and what could be done.

Last-second Superbowl advertising decisions drive a different set of timeliness requirements. Some companies invest millions of dollars in several Superbowl ads because they can now use real-time feedback that they receive during the course of the game to determine which ads to air. For example, a car company — let’s say Ford — may monitor the first half social media posts to try to assess what style of commercials are creating the most buzz. Is humor or impressive theatrics gaining more appeal with the viewers? Ford, having produced a few new ads to show that day, could use that data to make a more informed decision on which style of second half advertisements they believe viewers will respond to most.

Alternatively, Ford could show an ad during the first quarter of the game, and then explicitly ask viewers to tweet what style of car they like best. Based on that data, they could then choose what style of car ad to show next. In both of these cases, Ford has little control of the data being generated by the public, and needs to process it very quickly thus making the clean interpretation of the data a lower priority.

Timeliness of data requires a good understanding of both the business and technical context of the data being used to make decisions. In turn, that needs to be balanced with the business and technical constraints for processing and turning that information around to the people trying to make decisions.

0100000010000110110111001110011100110110101011  
0110001110100011010010110111001100111010010100110  
00010110001001101001011000010110111000100000100  
0011011011101101110011100110111010101101100011101  
0001101001011011100110011101001010011000010110001  
0011010010110000101101110001000000100001101101111  
01101110011100110111010101101100011101000110100101  
1011100110011101001010011000010110001001101001011  
0000101101110001000000100001101101111011011100111  
00110111010101101100011101000110100101101110011001  
1101001010011000010110001001101001011000010110111  
000100000010000110110111011011100111001101110101  
01101100011101000110100101101110011001110100101001  
100001011000100110100101100001011011100010000001  
00001101101111011011100111001101110101011011000111

Once those improvements are in place, businesses can truly realize improved quality, speed, and costs for enabling BI to drive real business value and results.

0100101001100001011000100110100101100001011011100  
0100000010000110110111011011100111001101110101011  
0110001110100011010010110111001100111010010100110  
000101100010011010010110000101101110001000000100  
00110110111101101110011100110111010101101100011101  
0001101001011011100110011101001010011000010110001  
0011010010110000101101110001000000100001101101111  
01101110011100110111010101101100011101000110100101  
1011100110011101001010011000010110001001101001011  
0000101101110001000000100001101101111011011100111  
00110111010101101100011101000110100101101110011001  
1101001010011000010110001001101001011000010110111  
0001000000100001101101111011011100111001101110101  
01101100011101000110100101101110011001110100101001  
100001011000100110100101100001011011100010000001  
00001101101111011011100111001101110101011011000111  
0100011010010110111001100111010010100110000101100  
0100110100101100001011011100010000001000011011011  
11011011100111001101110101011011000111010001101001  
0110111001100111010010100110000101100010011010010  
1100001011011100010000001000011011011110110111001  
11001101110101011011000111010001101001011011100110  
0111010010100110000101100010011010010110000101101  
1100010000001000011011011110110111001110011011101  
01011011000111010001101001011011100110011101001010  
011000010110001001101001011000010110111000100000  
01000011011011110110111001110011011101010110110001

## Purpose

Even when companies demonstrate alignment and have good data, they may still face challenges with achieving the full benefit of their BI due to ambiguity related to:

- Relevancy
- Consistency
- Action(ability)

### RELEVANCY

Although the underlying cause for many irrelevant metrics is poor alignment and/or data quality, companies may still be using irrelevant data comparison logic for predicting or evaluating performance. Because relevancy is more of a “gray-scale” than a “black-and-white” concept for BI, “sub-optimal” metrics may be a better description of this challenge than “irrelevant.”

Let’s assume that a company’s goal is to maximize market share and they have quality customer contract, sales, and billing data. This company sells complex service solutions, which require several days to configure, price, and quote a customer solution prior to being contracted. In order to motivate sales executives to support the “maximize market share goal” they use metrics such as “total sales contracted” and “percentage of proposals won” to drive bonuses for sales executives.

These incentive metrics seem ideal for driving the complex sales operations, right? Well, maybe not. What if the company has a significant percentage of contracts cancelled prior to receiving any billed revenue? Perhaps that’s due to the sales executive selling the wrong solution or promising something that could not be delivered. If these “rainy-day” scenarios are prevalent, the process by which those metrics are being calculated need to account for those losses. Those adjustment processes could become complex for scenarios involving long-term contracts that get cancelled mid-stream. Perhaps “billed revenue” and “percentage of proposed solutions implemented” are better metrics for evaluating performance and driving sales executive behaviors.

### CONSISTENCY

First, the impact that measurement inconsistency has on an organization will vary based on the nature of the underlying insight that one is trying to gain. For instance, inconsistent methods for measuring legal compliance (e.g., FDA-related manufacturing process) can be far more risky and damaging to a company than having inconsistent methods for evaluating effectiveness of a marketing campaign. Regardless, in both of these situations, an organization’s ability to gain quality predictive and operational insights will be diminished when measurements are not done using a similar data collection and calculation process. Inconsistent measurement criteria can be found in ANY area of a business using BI (e.g., supply chain, marketing, sales, fulfillment, financial management, etc.). When sales are measured differently either across regions or project types, it can lead to poor decisions and/or comparisons.

For instance, let’s say a company uses net sales revenue to determine which product lines are contributing to corporate profitability the most so that can drive decisions on what to more aggressively market or possibly whether to shut down or sell a product line.

One product line calculates net sales revenue as: Total Sales less Cost of Production less Expected Warranty Expense for units sold.

Another product uses just the first two components, but it does not have a warranty expense component. Obviously, cross-product sales revenue comparisons will not be an “apples-to-apples” comparison. Even if only the first two components are used, those may be calculated differently as well.

It is VERY important for a business to fully understand its business processes and be able to show what and how data is collected and used for establishing relevant and consistent metrics.





0 1  
0010  
1001100  
0010110001  
00110100101100  
00101101110001000  
000100001101101111011  
0111001110011011101010110  
1100011101000110100101101110  
0110011101001010011000010110001  
0011010010110000101101110001000000  
100001101101111011011100111001101110101  
011011000111010001101001011011100110011101  
001010011000010110001001101001011000010110111  
000100000010000110110111101101110011100110111010  
1011011000111010001101001011011100110011101001010011  
000010110001001101001011000010110111000100000010000110  
110111101101110011100110111010101101100011101000110100101101  
11001100111010010100110000101  
10001001101001011000010110111  
0001000000100001101101111011  
01110011100110111010101101100  
01110100011010010110111001100  
1110100101001100001011000100  
1101001011000010110111000100  
0000100001101101111011011100  
11100110111010101101100011101  
00011010010110111001100111010  
0101001100001011000100110100  
1011000010110111000100000010  
00011011011110110111001110011  
01110101011011000111010001101  
00101101110011001110100101001  
1000010110001001101001011000  
0101101110001000000100001101  
101111011011100111001101110101  
01101100011101000110100101101  
11001100111010010100110000101  
10001001101001011000010110111  
0001000000100001101101111011  
01110011100110111010101101100  
01110100011010010110111001100  
11101001010011000010110001001  
1010010110000101101110001000  
00010000110110111101101110011  
10011011101010110110001110100  
01101001011011100110011101001  
0100110000101100010011010010  
1100001011011100010000001000

## ACTIONABLE

Metrics and/or reports that do not have a process in place for informing who needs to take what action are not effective for driving results! That information may be “nice to know” or support a legal compliance need; however, it will not be able to drive improvements without more context and/or data.

For instance, let’s say a business goal is to increase product revenue by 25% this year. The company hypothesizes that goal can be accomplished by:

- Reducing cancelled orders by 40%
- Improving sales lead conversion rates 20%

These metrics are certainly relevant, but by themselves do not support who needs to take what action to improve those metrics. In order to reduce cancelled orders, several factors (and thus action owners) may require actionable data to support that goal.

For instance; cancelled orders may be a result of many factors:

- Late customer delivery caused by a seller not checking supply and delivery time prior to order
- Customer did not get what they expected (possibly due to poor product or sales description)
- Customer no longer needed item (e.g., received another as a gift)

Sales lead conversion metrics can be impacted by:

- Quality of lead being provided
- How (and when) the lead follow up took place
- Others ...

“The devil is in the details” applies when differentiating between good and great BI metrics and reports; however, it’s sometimes difficult to get executives, business, and technology experts/owners aligned with the process, communications, and expectations management for enabling the metrics and supporting data and reports to drive specific behaviors that support business goals.

In order to really address the late delivery issue that’s impacting the cancelled order metric, lower level processes and events must be looked at to determine what’s best to measure and report. For instance, the company may want to analyze the late delivered sales orders for the following events:

- Sellers who failed to check the “expedite order” box when overriding the customer expected delivery date
- Sellers not entering the proper delivery method (e.g., priority overnight vs. standard delivery) when placing an order
- Warehouse fulfillment people that did not meet the pick, pack, and send service level time frame for getting the order out of the warehouse

## Summary

Three key differentiators of good versus great BI operations are: organization alignment, data quality, and well-defined purpose. These elements can be complex and challenging for companies to address; however, BI planning and definition frameworks are effective for simplifying and overcoming those complexities and challenges. Once those improvements are in place, businesses can truly realize improved quality, speed, and costs for enabling BI to drive real business value and results.

© 2014 JABIAN, LLC. ALL RIGHTS RESERVED.



### BRUCE KING

[bruce.king@jabian.com](mailto:bruce.king@jabian.com)

*Bruce is a Director at Jabian with expertise in business and technology strategy with specialties in metrics definition and management*

