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10 Hard Questions to Make Your Choice of Cloud Analytics Easier

Introduction

Key stakeholders and executive sponsors of business intelligence solutions need an easy-to-digest view into industry terms and technical requirements.

This guide offers ten real-life business scenarios that will elicit your technical requirements in plain English. Use this guide to cut through the BI buzzwords and start creating a requirements outline that aligns with what you truly need to get out of your BI selection to achieve business goals.

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Question 1

Do you need to analyze data from your transactional applications (Salesforce.com, Oracle, SAP, etc.)?

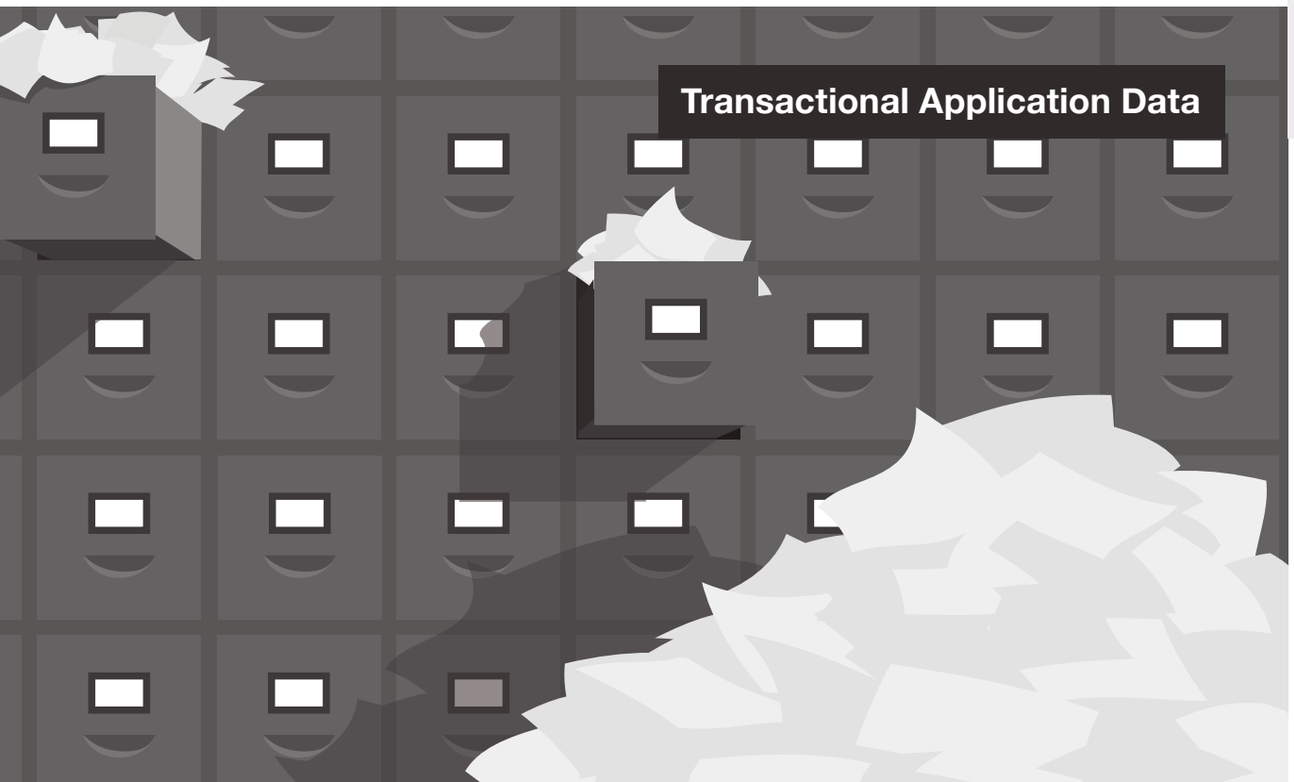
Business Scenario

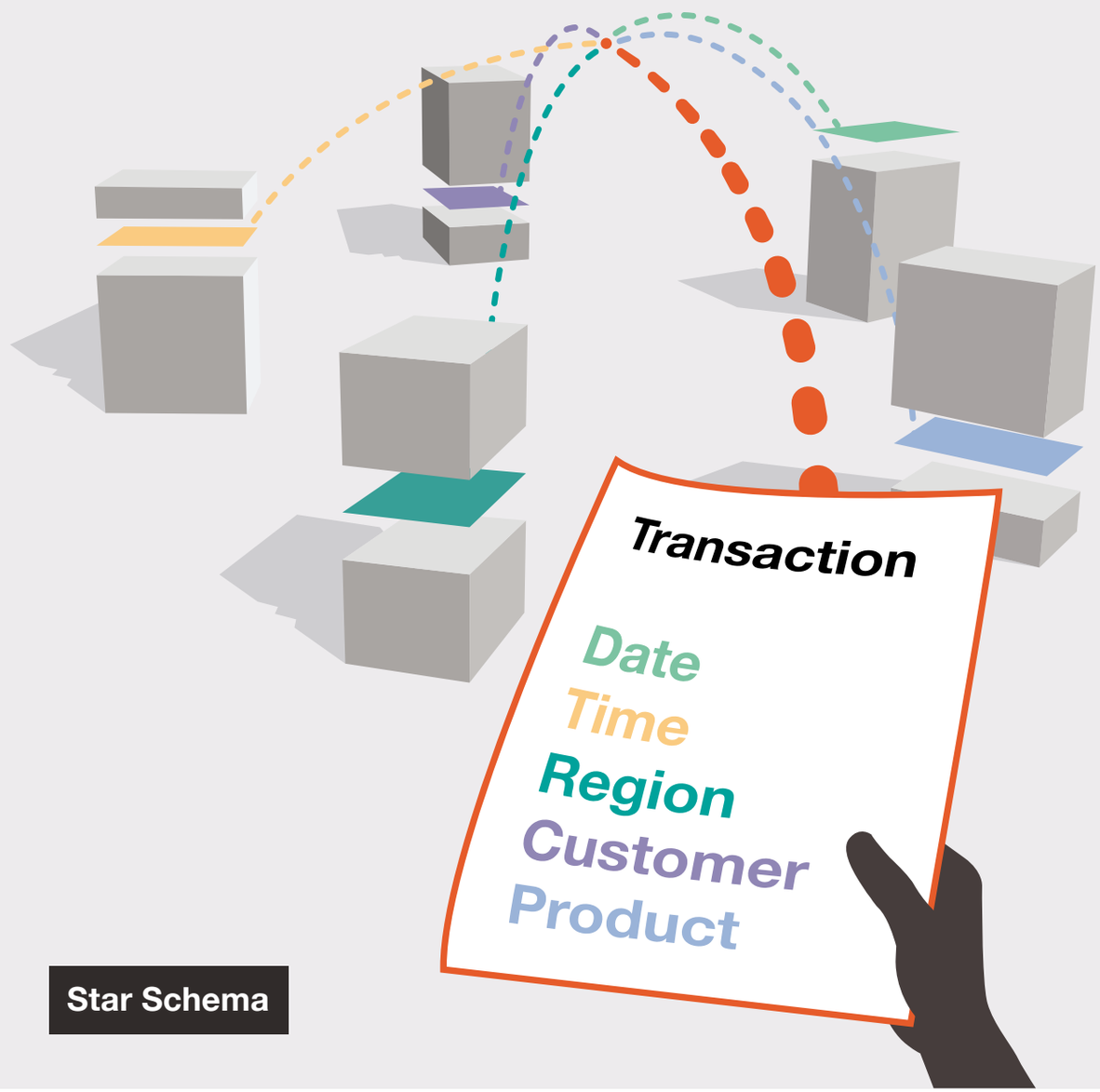
A Business Analyst would like to analyze order data to improve on-time shipments, but when he exports order data from SAP, the hundreds of tables exported into spreadsheets are far too complex and unwieldy.

Technology

Data Warehouse, Extract Transform & Load (ETL)

Transactional applications store data in a format optimized for transactions (e.g. recording an order). This format is difficult, if not impossible, to utilize for analysis. A BI platform extracts the data from these applications; transforms it into a format optimized for analysis (star-schema) and loads into a data warehouse. The star schema is a format that takes thousands of transactional tables and converts them into as few as 10 analytical tables optimized for analysis. The data is combined into Facts (numbers) at the center of the star and Dimensions (qualitative descriptors of facts) as the points of the star. (Example: Order Revenue = Fact, Order Date = Dimension.) The data warehouse holds this data and combines it with other data from other applications that you wish to analyze.





Star Schema

Why Care?

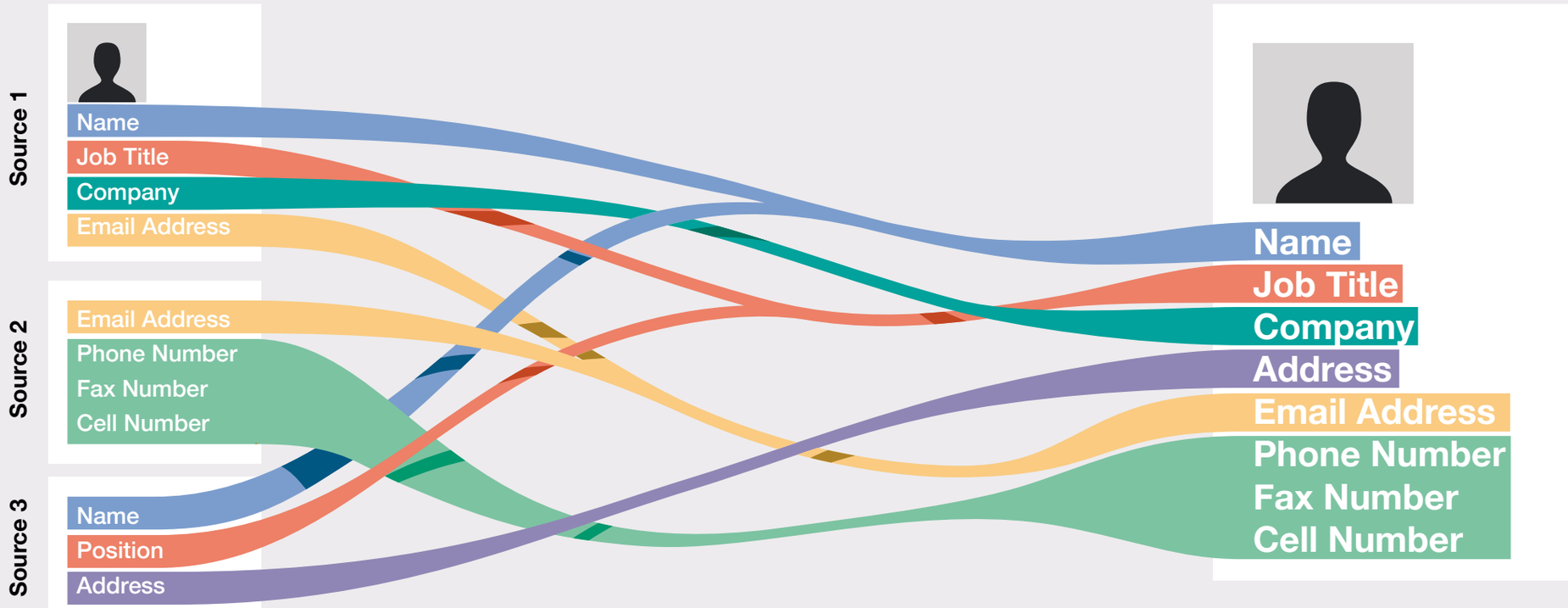
The business analyst no longer spends hours in Excel trying to analyze orders. Instead they simply ask the key question: What stage in my order process is slowing my most important orders? For which products? In which regions?

When Don't You Need It?

- If you need to analyze a single data source that has fewer than 10 tables or if you are not concerned with tracking historical performance or when the data source already contains business metrics.
- Your sole responsibility is to do analysis and you know all of the tables in your transactional application and have the ability to perform rules and calculations on that data...and you have lots of free time!

Question 2

Do you need to analyze data from multiple different sources?



Business Scenario

A Financial Analyst wants to identify and remove bottlenecks from her company's opportunity-to-cash process. The data lies across ERP and CRM systems, but the analyst can't bring the data together because key dimensions (like customer and product) don't match across the different systems.

Technology

Data Warehouse, Conforming Dimensions, Data Transformations

Dimensions like Customer and Product are represented in various formats and tables in different applications and sources. However, users simply want to address the question with respect to the customer regardless of the data source. To solve this problem, data from different sources is transformed and brought into the warehouse via a single dimension called a "conformed dimension" that represents a single record for each customer. This process requires technology that supports data transformations so that customers from your CRM system match the customers in your ERP system.

Why Care?

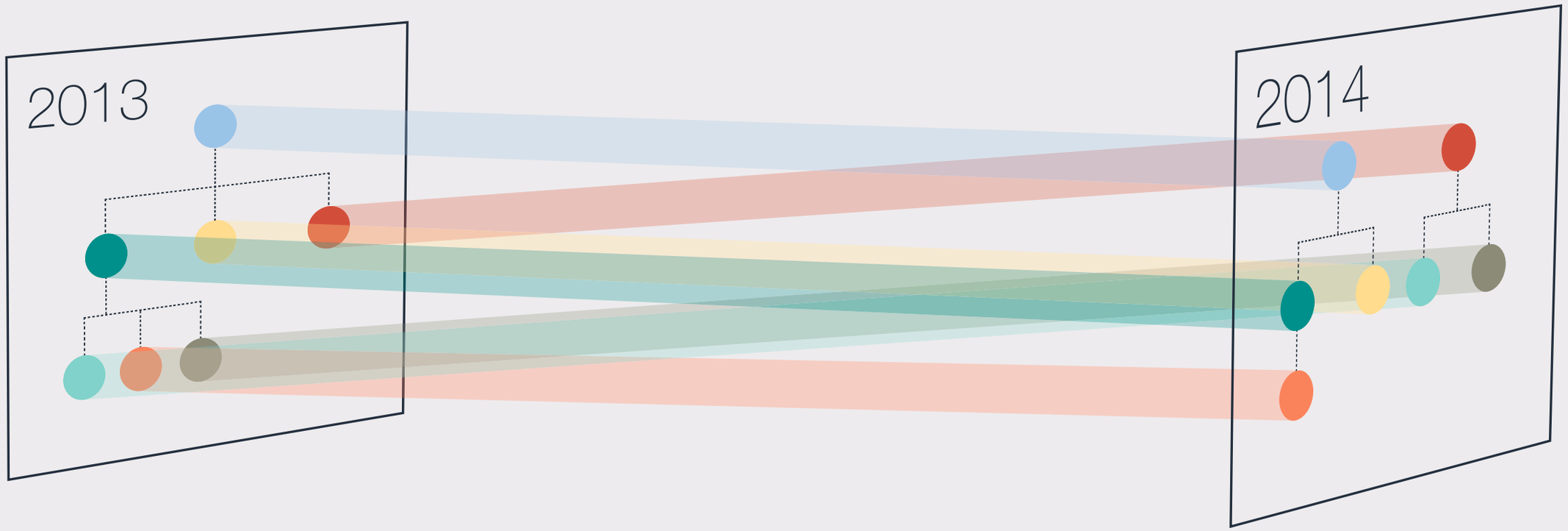
Most business processes span multiple data sources. So it is difficult to get a single view of business metrics and terms that span these data sources. Your business needs a single version of the truth—with one view of the customer, or one view of product hierarchy. You can achieve that with proper data transformation capabilities and conforming dimensions. In this business scenario, these technologies enable the financial analyst to quickly identify specific bottlenecks for a customer and/or product, because she doesn't have to worry about combining data across sources or having two different representations of a customer or product.

When Don't You Need It?

- You already have a Master Data Management system (which is likely part of a data warehouse) that ensures there is only one view of the customer across your applications.

Question 3

Has your organization undergone sales territory alignments, job changes, mergers or other organizational restructuring?



Business Scenario

A Sales Rep “rolls-up” to the Central Region in Q1. In Q2, sales territories are re-aligned and the sales rep now rolls-up to the West Region. When the Sales Operations Manager analyzes the regional sales performance for the first half of year, the sales rep’s numbers roll up to West, because that is her current region; however, her numbers should be in Central for Q1. The Sales Operations Manager has to either manually manipulate exported data or report incorrect values for Central and West sales performance in Q1.

Technology

Data Warehouse, Slowly Changing Dimensions

Dimensional data (like sales rep region or job position) changes frequently, but is important for analyzing business performance over time. Data warehouses handle this issue by turning the dimension (like region) into a slowly changing dimension, so that metrics (like sales) are properly compared to the dimension hierarchy as of the time that the metric (sales) is relevant. Beware of platforms that support slowly changing dimensions through one-off coding or scripting as they are error-prone and require more maintenance and specific scripting skills. More sophisticated BI platforms will support these concepts as an integral part of their architecture.

Why Care?

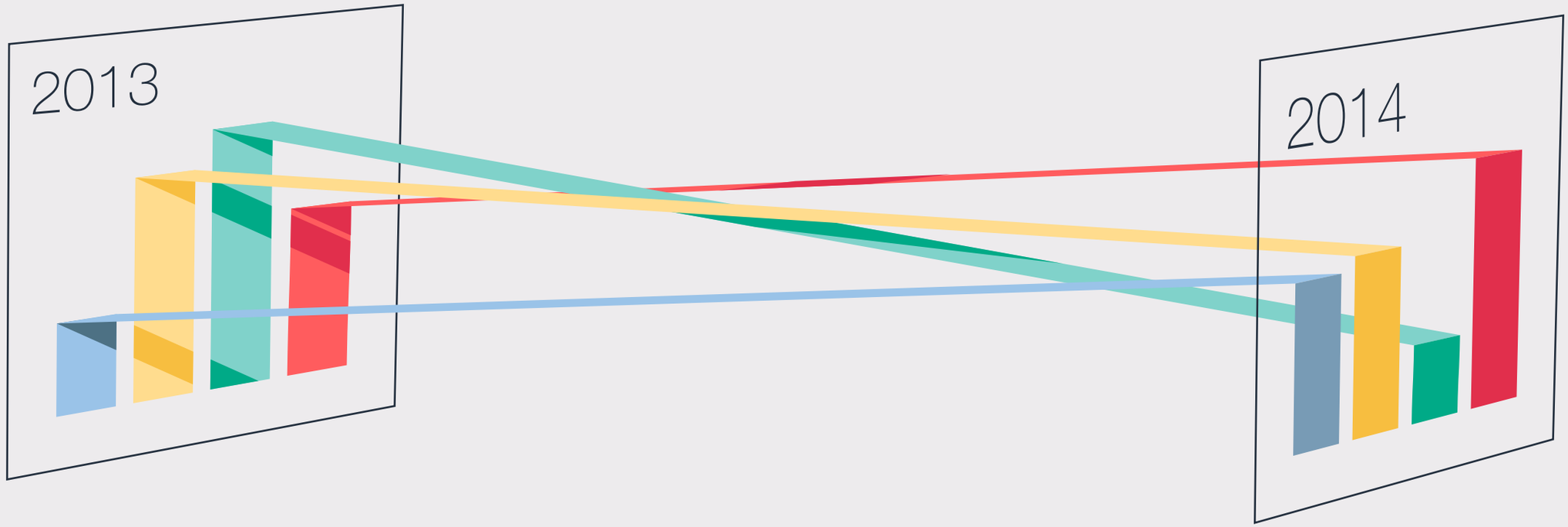
The one constant in business is change. Without slowly changing dimensions, you are presenting analysis that is not only inaccurate, but could possibly result in wrong decisions. Analyzing data is as dangerous as it is powerful, which is why you should ensure your BI platform can handle changes in dimensional data. As your business grows and flexes, ensure that your data can keep up with your state of constant change—so your sales rep’s numbers are accurate, even if Illinois moves to California!

When Don’t You Need It?

- Your organization or dimensional data does not undergo any changes and you don’t want to analyze data in the past. If this is the case, you probably do not need a BI platform and Excel should suffice.

Question 4

Do you need to compare performance today to snapshots of performance from the past?



Business Scenario

A VP of Sales wants to remove key bottlenecks in his pipeline and needs to analyze the revenue value and time duration of opportunities in each stage of the sales process. Unfortunately, his CRM solution does not provide this data, so the VP of Sales is blind to key bottlenecks in sales cycle.

Technology

Data Warehouse, Historical Snapshots

Historical snapshots capture data from transactional applications that are constantly changing. These snapshots are stored in the data warehouse as part of the facts and dimensions, so that business users can access the snapshot data quickly for analysis. For example, a snapshot can show pipeline value in sales stage 3 one year ago and compare that to today or same month last quarter. Some BI platforms store this data in separate files or tables. This limits the reach to each snapshot since it is specific to a single analysis. It also requires technical maintenance because a new file is needed for each snapshot and complex snapshotting logic is not easily handled with simple scripts. Other BI Platforms support historical snapshots as an integral component of the platform.

Why Care?

Very often the best way to make business decisions is to compare historical performance against current performance to help predict or influence future performance. Without snapshots, items that change in transactional systems are lost and can't be analyzed. This analysis is vital to identifying trends and helps unearth root causes of performance issues. Most importantly for the business scenario above, you want your VP of Sales to know how to remove pipeline bottlenecks to decrease the sales cycle time.

When Don't You Need It?

- You do not need to analyze historical performance and you don't care about improving future performance.
- You already have a data warehouse that is capturing historical snapshots.

Question 5

Do you need to apply business rules or logic to data for analysis?

Business Scenario

A Director of Demand Generation needs to analyze and compare social media data with traditional lead sources. However, the social media data comes with little structure while other lead source information and internal website data have different data structures. The Director of Demand Generation needs a common way to analyze her various lead sources, yet there is no consistency to any of the data. As a result, the business has no visibility to the value and impact of its social media efforts.

Technology

ETL, Data Warehouse, Logical (Semantic) Layer

Data comes in various formats, including flat files, cubes, and relational databases. While the data warehouse can store all of this data and organize it in a format that enables analysis, the data may not be in a language (metrics/business terms/rules) that business users can understand. A Logical Layer applies business meaning to warehouse data and defines how various data elements relate to each other. It provides a robust way to create metrics and business rules that are not apparent in data sources. The information represented in the logical layer is often called metadata. For example, a piece of metadata may be a single fact called “number of touch points” that applies specific logic to social media, email, web, and traditional lead sources to create a single business metric upon which a marketing analyst can run analyses. Even if you have a data warehouse, the logical layer is still required to provide business meaning and logic to raw data to empower business users to ask questions based on business metrics, not raw data.

Why Care?

Raw, unstructured data can provide valuable business insight, but it requires translation before a business user can analyze it. A Logical Layer gives that data business meaning without reliance on IT. For example, wouldn’t it be nice to know the business impact of your social media spend and compare it to traditional sources?

When Don’t You Need It?

- Your data already incorporates business meaning, metrics and business rules.
- You’re a database guru and prefer to run SQL queries directly on top of the data.
- You are a data scientist performing cutting edge machine learning analysis, which means you probably don’t need a BI platform, but instead a data mining engine.

Question 6

Do you need to distribute professionally formatted reports to executives, customers, or other organizations?

Business Scenario

A Director of Customer Service wants to generate and distribute a customer-facing performance report on a weekly basis. The report has a specific format for each customer and shows sensitive data in each one. Creating and distributing these reports requires one full time employee, manual manipulation of data from different sources using Excel, and applying security rules for each customer. This manual reporting method is not scalable, professional in appearance, or consistent over time.

Technology

Pixel-Perfect Enterprise Reporting

Ensuring that a report meets professional standards requires specific capabilities for formatting, distribution, data security, parameterization, bands and sub-reports. Pixel-perfect reporting has deep requirements beyond simple analysis and charting. You should confirm that your reporting platform meets your specific reporting needs. Furthermore, your users might want to further analyze the data represented in the reports. So make sure that reporting is one of the information form-factors of your BI platform and not the only capability it provides.

Why Care?

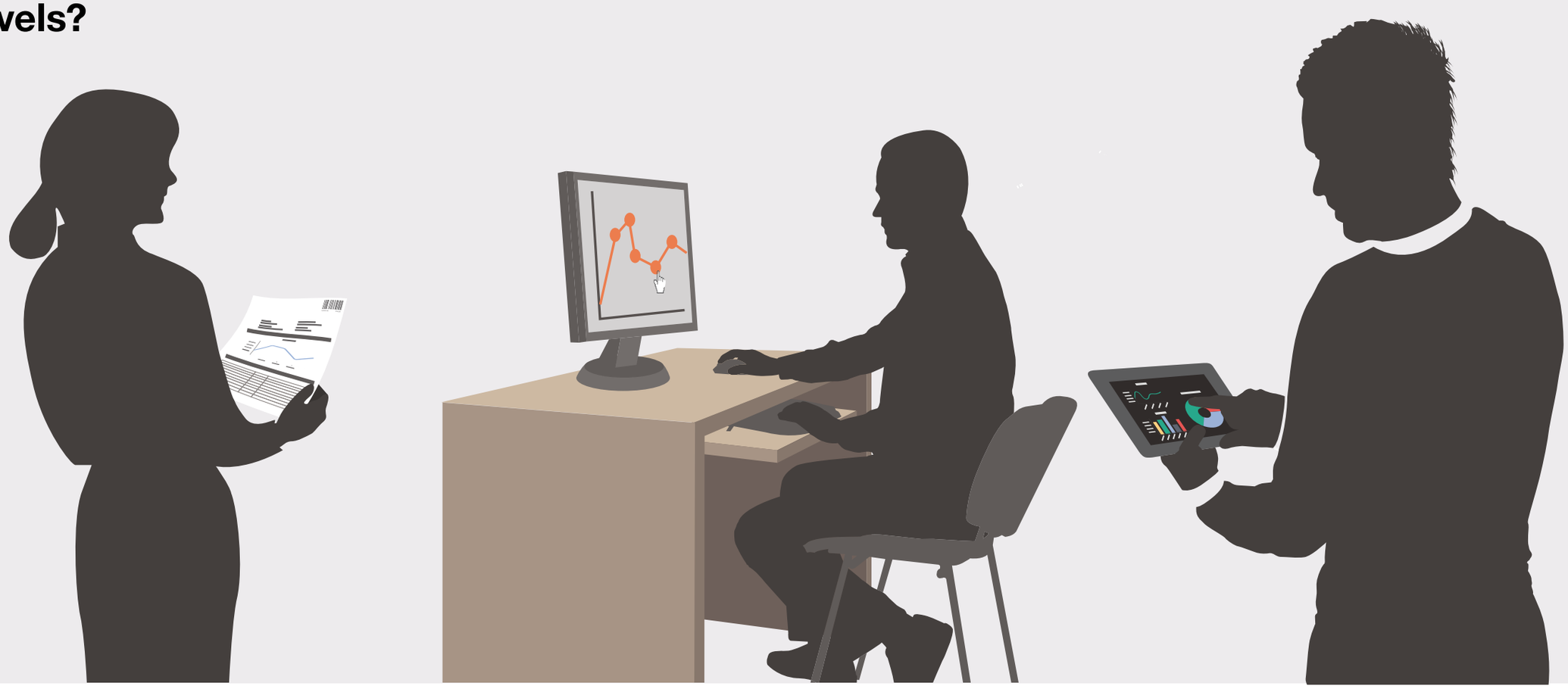
When the CEO asks to see the data in a specific way (and that way only), you want to be sure you can provide that information to him consistently. Furthermore, you want to provide a professional image of your company when you distribute reports externally, especially to customers.

When Don't You Need It?

- Your analysis needs are limited to a very small group and your enterprise reporting needs are already being fulfilled with another solution.
- Your organization has very low cost resources who can create reports based on data from transactional systems and you can hire and retain more of these resources in the future.
- Your organization does not mind if the reports' appearances vary.

Question 7

Does your organization have employees with different analytic skill levels?



Business Scenario

A Data Analyst wants to explore and ‘play’ with data—filter, pivot, and visualize it—while the VP of Sales demands a single dashboard showing her the most current pipeline and order analysis.

Technology

Advanced Visualizations, Dashboards, Ad-hoc Analysis

Among the most difficult and complex issues in Business Analytics is providing the right tools to the right user. Users have different skill sets and preferences. For a business analyst, a flat, static dashboard with non-interactive charts does not provide enough detail. They require slice and dice or ad-hoc capabilities. On the contrary, these capabilities overwhelm users who need access to simple reports. Robust ad-hoc tools allow business analysts to pick dimensions and measures to answer specific questions (i.e. “Tell me the departments where more than 20% of managers had performance review scores of 5 or higher”). Interactive dashboards provide advanced visualizations through a diverse charting library and data exploration capabilities like drill paths, drag and drop filtering, column selectors, filters, prompts and pivoting.

Why Care?

This is where the rubber meets the road. Interactive dashboards and visualizations ensure employees gain access to the rich insight they need to make decisions. Easy to use ad-hoc analysis provides business analysts quick answers to a question instead of spending hours manipulating data in Excel. For the scenario above, you want to provide the VP of Sales a clean pipeline dashboard while at the same time, enable data analysts to delve deep into the data with ad-hoc analysis and design capabilities.

When Don’t You Need It?

- Your users are a few data analysts who only need ad-hoc analysis or your organization has no need to disseminate rich insights to different user types.

Question 8

Do you want to show reports or charts within the context of an existing application?

Business Scenario

Your internal team or your customers want to view analytics in the context of their business applications. For example, your sales team receives half of their commission after the customer has paid the company. Each sales rep wants to understand customer payment history and know when each order has been paid. You would like to display a trend analysis of customer payment history and order detail in the Salesforce.com account pages to provide sales with this information within the context of their daily workflows.

Technology

Embedded Analytics, Row/Column Level Security

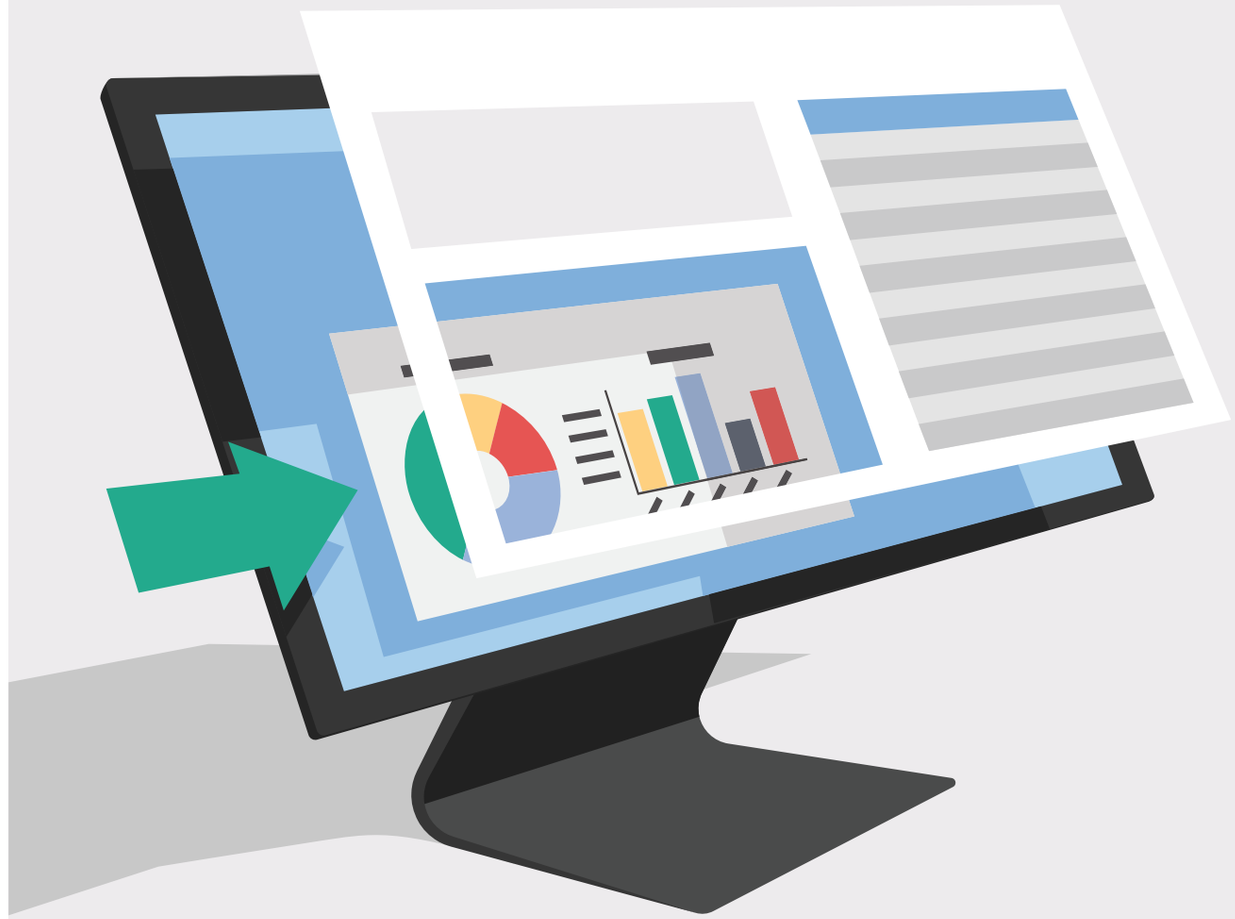
Once data is prepared for analysis (i.e. through the data warehouse and logical layer) and shown in a visually compelling way (i.e. reporting and dashboards), the expectation is often that the project is done and your users have all that they will need. However, the best way to drive business value from analysis is to make analytics part of your daily, ongoing business processes. In order to do this, embed analytics into your operational application. You need capabilities like security, authorization, APIs, iFrames, and UI customization that help you display reports or dashboards inside another application—all while providing a consistent look and feel. In addition, you need to keep data secure and apply rules about who can access specific data, based on various properties such as geography, title, and type of user.

Why Care?

Putting analytics in context is among the best ways an organization can turn data into actions. In the above business scenario, the company has the ability to reduce their days of sales outstanding by giving sales reps visibility into their customer payments. Having such analysis embedded directly into the rep's Salesforce.com account pages, gives the rep the ability to drill into exactly which orders are unpaid so they can do something about it.

When Don't You Need It?

- Analysis or data visualization adds no value to the application.



Question 9

Does the organization need to perform “what-if” planning? Or project future performance?

Business Scenario

A Supply Chain Manager would like to understand the impact of increasing the inventory re-stock value on shipment performance and inventory obsolescence. She would like to utilize past performance data on shipments and inventory as a proxy; however, with data across multiple product lines and from various systems, she is unable to perform the analysis. Without all data together in a single model, she cannot perform the “what-if” analysis to determine which levers to pull to improve business performance.

Technology

What-If Modeling

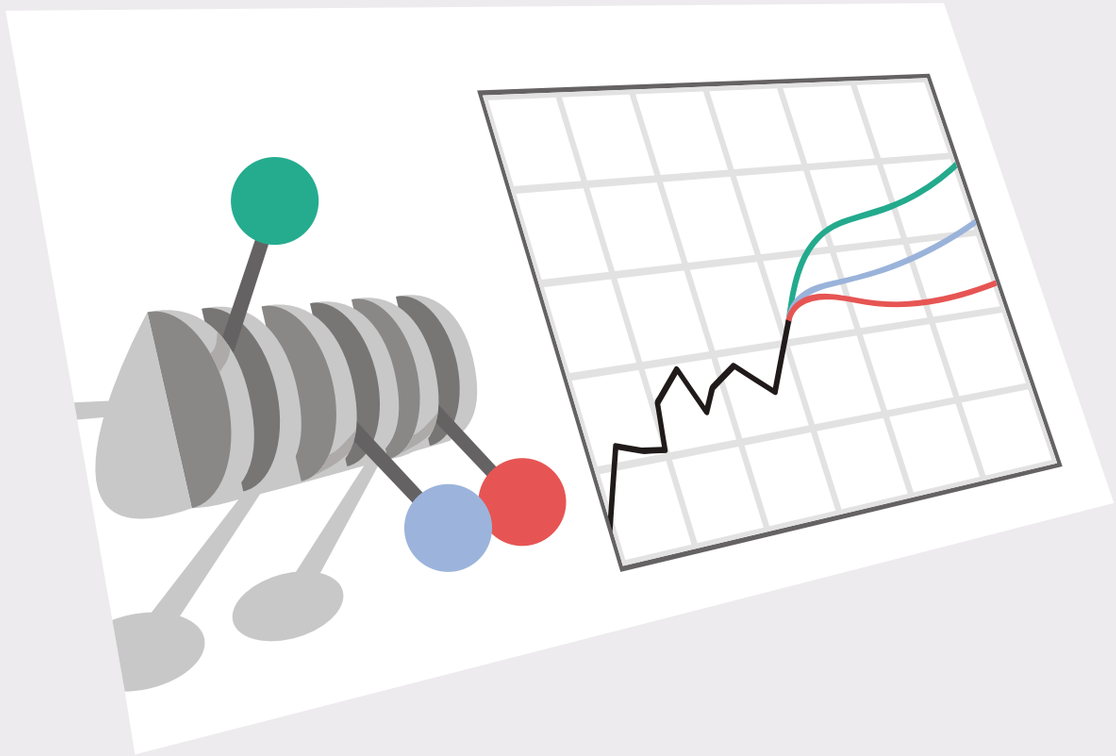
“What-if” modeling does exactly what is says. It uses historical data to build a model and enables a business analyst to pull specific levers (change data) to project future performance. This projection analysis can be accomplished with a data warehouse, logical layer, and business rules that allow a data analyst to model the business relationships among historical sets of data (e.g. build a model of pipeline close rate, sales stage and sales rep performance to project future closed revenue). They are not to be confused with Predictive Analytics models which a data scientist builds to predict future performance based on statistical relationships between data. The advantage of “what-if” modeling is its ease of use for business users who want to understand variances between different levers, without needing hard core data mining skills.

Why Care?

The primary reason to analyze historical data is to drive future decisions for better financial performance. “What-if” modeling and projection analytics do just this. In this example, the Supply Chain Manager can perform “what- if” analysis on supply chain levers to increase on-time delivery without adversely affecting inventory levels.

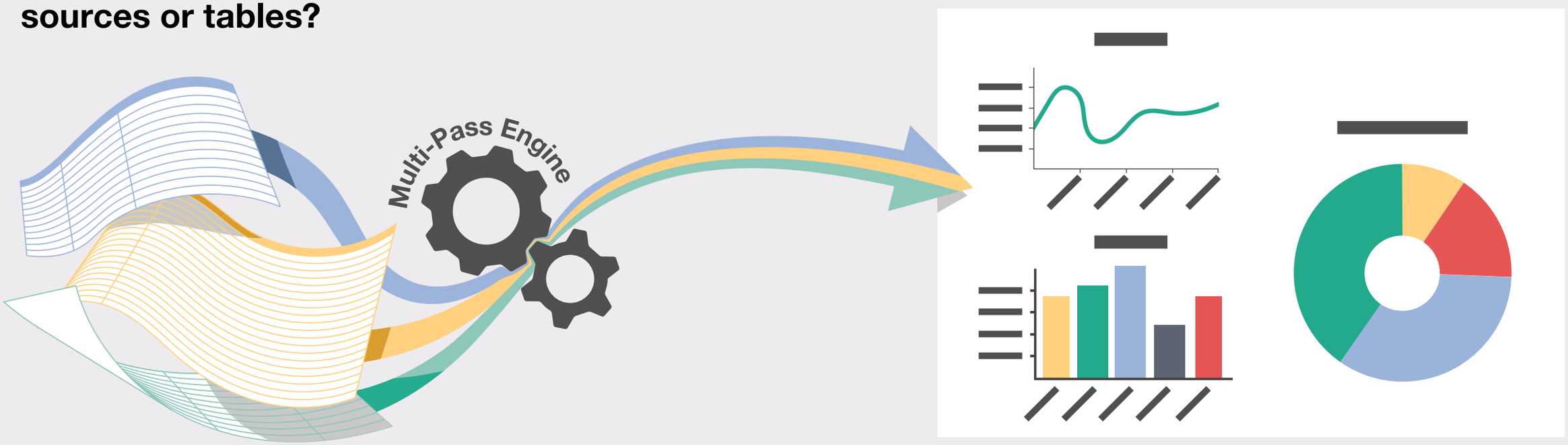
When Don’t You Need It?

- You are analyzing data that cannot be used to model future occurrences. An example is a one-time event that will not be repeated by your business, such as emptying your bank account to pay $4M for a Super Bowl ad!



Question 10

Do you need to perform in-depth analytics that relates data from seemingly unrelated sources or tables?



Business Scenario

A VP of Marketing wants to understand the impact of social media on their top 5 product sales. However, revenue data is in an ERP system, social media data is in flat files, and campaign data is in a CRM system.

Technology

Complex SQL, Multi-pass SQL, Composite Keys

Why leave this topic to #10? This topic may be the hardest to grasp, and is the least understood by BI vendors, practitioners, and customers. Business users often need to see a relationship between two sets of data that could not naturally be put in the same query. This requires a multi-pass SQL that allows a single question to be parsed into multiple questions against different data sets and brought together in one logical answer. In this case, one question will return the top 5 products whereas the second question will return the impact of social media on product revenue. The application must join these two answers to find the intersection, the impact of social media on the top 5 products' revenue. It sounds complex—and can be—however, a platform that supports these capabilities will do this without user intervention. Platforms that mimic multi-pass SQL or infer relationships without shared dimensions/composite keys are subject to returning incorrect results and can cause more harm than good.

Why Care?

A business user should not have to worry about where the data lies or how it is structured. If a business user wants to understand how social media and press releases impact renewal rates, they should be able to do that without knowing how to spell composite key or multi-pass SQL. A platform that correctly solves these issues, while shielding business users from complexity of data modeling, can drive rapid business value. In this example, if analysis reveals that positive social media sentiment increases renewal rate, then the business now has a new lever to pull to improve financial performance.

When Don't You Need It?

- If your analysis is simplistic and on a single data set.
- If understanding how external factors impact your internal business is unimportant to grow your business.

Closing Thoughts

Choosing a superior BI solution is not easy. After a while everything sounds the same. But with this guide, you now know that not all business analytics solutions are created the same. When selecting a BI platform, use this guide to add some context to your BI technical requirements to help your executives understand which platform is the best fit for your organization. Visit birst.com to learn more about selecting the right solution for your company.

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