Matillion
Business Intelligence

Implementing Self-Service Reporting & BI

Complete Guide

IS THIS BOOK RIGHT FOR ME?

Not quite sure if this e-book is right for you? See the description below to determine if your level matches the content you are about to read.

❖ INTRODUCTORY  This e-book

Introductory content is for those who are new to the subject. You have heard of Business Intelligence or understand the business challenge and pain points, but you're not a BI expert and want to learn more about the key concepts.

❖ INTERMEDIATE

Intermediate content is for those who are familiar with the subject, but have only basic experience in executing strategies and tactics on the topic. This content typically covers the fundamentals and moves on to reveal more complex functions and examples. After reading it, you will feel comfortable leading projects with this aspect of Business Intelligence

❖ ADVANCED

Advanced content is for those who are, or want to be, experts on the subject. In it, we walk you through advanced features of this aspect of business intelligence, and help you develop complete mastery of the subject. After reading it, you will feel ready not only to execute strategies and tactics, but also to teach others how to be successful.

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Overview

"Putting a value on understanding your business in detail is as impossible… as it is priceless."

Nat Southworth, Sales and Marketing Director, Hornby

Getting at the vital information you need to run your business is essential, but can be painful as your data is buried in systems where it's hard to get at.

Business Intelligence and Self-Serve Reporting solutions can help, but historically they've been expensive, time consuming and risky to implement.

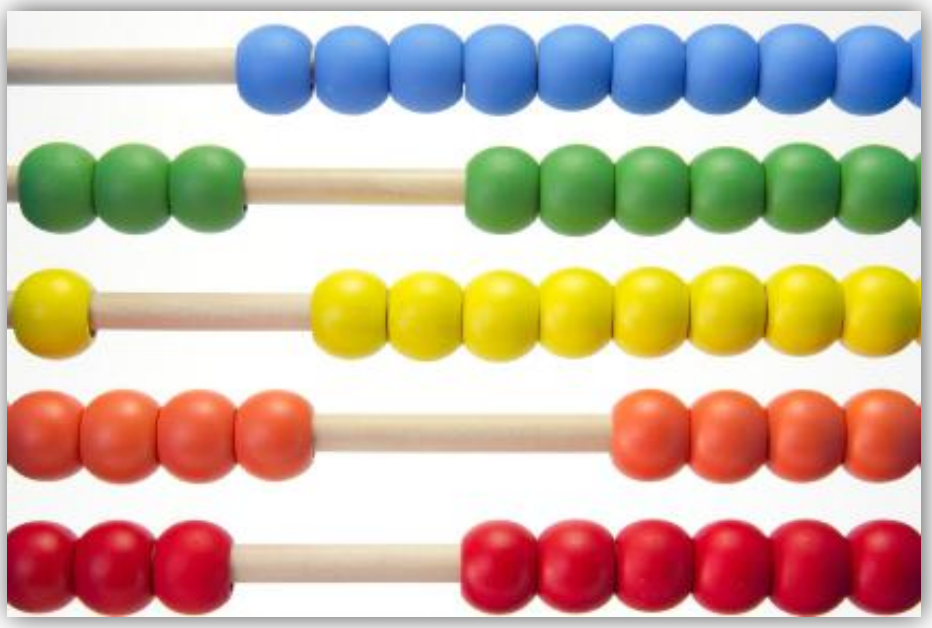
It doesn't have to be this way. Modern technology such as cloud computing and in-memory analysis, coupled with new commercial models like software-as-a-service, mean Business Intelligence is now achievable with lower risk, lower cost and with fast, low-pain implementation. This makes it practical to deploy BI at a departmental level and in mid-sized businesses.

People sometimes use other terms such as business analytics, decision support, and corporate performance management to describe BI. For clarity and consistency, we're only going to use the terms BI or Business Intelligence throughout this eBook.

This eBook is packed with information you need for selecting and implementing a BI and Self-Serve Reporting Solution in your mid-size business, department or whole enterprise. This is for everyone who wrestles with creating reports or who plans to implement Business Intelligence.

CHAPTER 1:

Making the Case for Self Service Reporting & BI: Why You Need It



Why does your company need Business Intelligence and Self-Serve Reporting?

After working with dozens of companies who have gone on to implement BI solutions, we have found these common pain points.

If one or more of the following apply to you, your company will benefit from a Business Intelligence and Self-Serve Reporting solution.

- ✓ Getting at the information you need is difficult: it's spread across different systems, spreadsheets and sites. This makes it difficult for you to self-serve and get the information you want quickly. Sometimes, you just can't get the information you need.
- ✓ Bottlenecks form around key individuals with the technical skills to extract data and turn it into meaningful information. These people get maxed out. Delays form, and risk is increased.
- ✓ Because reporting is manual, it's infrequent or arrives late. You get January's sales figures in mid-February. You find out a key product line is selling fast, several weeks after it started to happen. You get management information monthly or quarterly, not weekly or daily.
- ✓ Lots of people in your organization spend time manually producing reports – downloading data into Excel, manipulating it, and then e-mailing it out. It's costly and error-prone. Those people could be spending time managing, selling, cutting costs, or servicing customers.
- ✓ Turning raw data into useful information is difficult, as it requires the application of business rules and complicated processing. Maybe calculating true gross margin involves applying sales and supply side rebates or factoring in delivery costs – which makes analyzing it a manual task for finance or IT staff.

- ✓ You have data in multiple places – several ERPs, different functional systems, or some data held in spreadsheets. What you need is one, always up-to-date, version of the truth.
- ✓ The reporting tools you do have are difficult to use and require technical expertise. This means business users can't self-serve.
- ✓ Because managers have to "invent" and manipulate their own management information, they can arrive at different conclusions. This can cause conflict.
- ✓ You have hundreds of reports. They're in different places, owned by different people. Most are rarely or never used, yet someone has to maintain them all. Despite all of these reports, finding the information you need is difficult.

A well implemented Business Intelligence and Self-Serve reporting solution solves these issues.

Actions:

- ❑ Review the list of pain points and compare these against your own experiences.

CHAPTER 2:

Defining Your Analysis and Reporting Requirements

So you've identified that BI can help your business. Now you need to define your data analysis requirements.

Need sales information? Want to monitor supplier performance? Keen to understand HR data, or customer payment performance?

You'll need to define three things, and doing this is one of the most important parts of any business intelligence project.

What are the three things?

1. Facts

The business events you want to analyse. Invoices, stock positions, orders, goods receipts, payments, asset valuations. In short, whatever business events you want to be able to report on.

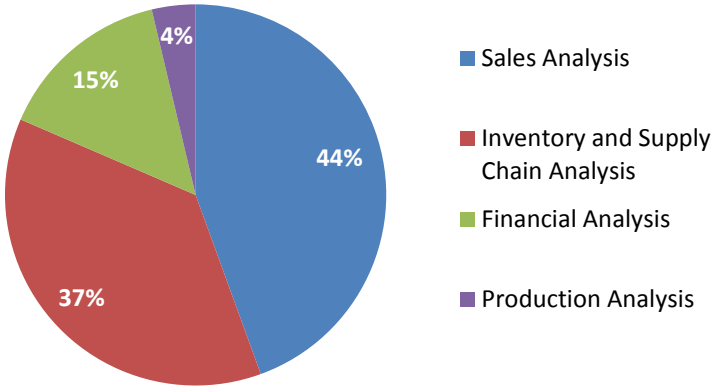
2. Measures

These are the *numbers* you'll want to analyse and report. Revenue, gross margin, cost, payment days, stock value. Some measures will be fairly simple. Others will be more complicated. In calculating gross margin, for instance, you may need to take cost and rebate calculations or currency into account.

3. Dimensions

The business entities you'll want to "slice and dice" your reports by. Customer, Product, Date, Territory/Country, Sales Representative, Supplier. Each dimension will need all the attributes you may want to analyse. A Product dimension, for instance, will need Product Code/SKU and Name or Description. However, you may also likely want to include information like Product Group, Category, Unit of Measure or Colour.

To make things simple, you may want to bite off "areas" of analysis and reporting, aligned by functional business area. So focus in on Sales related analysis as a project, then maybe Finance.



Source: Matillion Customers By Analysis Area, Jan 2013

Here at Matillion we work with specific industry verticals. Because of this we have a pretty good idea of what facts, measures and dimensions customers in a particular industry and company size will need.

We deliver Matillion BI in functional modules such as Sales Analysis, Inventory and Supply Chain Analysis, Production Analysis and Financial Analysis which contain these assets, and which we then customize to our clients' requirements as part of our implementation process.

You can define your own "modules" or areas of analysis as part of your BI project.

Action points:

- ❑ Define the Facts, Dimensions and Measures you need to satisfy your reporting and analysis requirements.
- ❑ Consider breaking down your implementation into functional, bite-size chunks aligned to business functions.

The next chapter will show you how to select BI technologies that perfectly fit your company needs.

CHAPTER 3:

Choosing the Right BI Tool: Factors and Features to Consider

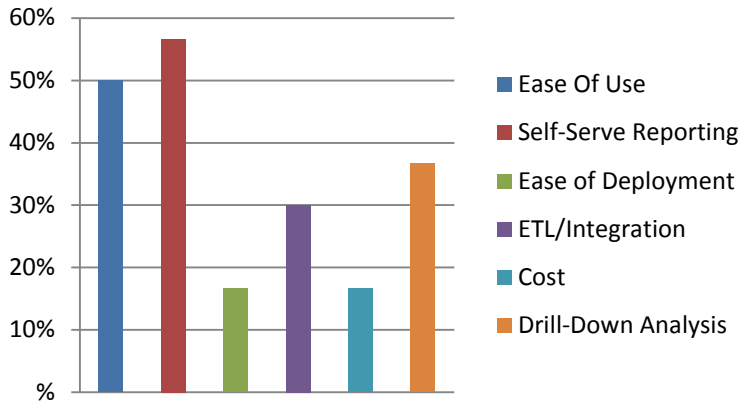
To help you select the BI technology that is right for you, examine the features on offer from each tool you look at. Below are the non-negotiable features that good BI tools should offer.

1. Self-Service Reporting

This is the #1 feature that our customers tell us is most important to them. The ability to access a report, filter using drop-downs etc, and view the data you need easily. 90% of the time, this is what the average business user needs.

2. Drill-down Analysis

Want to explore your data even further? Drill down into top selling products or different customer sectors? You need drill-down analysis and features such as group, pivot, slice and drill-through.



Source: Matillion Customer and Prospect Survey 2012
Most Important Features/Considerations

3. Data Visualization

Want to spot trends, identify gaps or communicate visually? Data visualization lets you do all these through graphs and charts. By making information easily digestible to everyone, data visualization can foster a better decision-making process.

4. Dashboards

At-a-glance, situational awareness for a given user or role. Combine information from a variety of sources and present it graphically.

5. Report Scheduling

The ability to define a report then have it sent automatically to a user or group on a schedule by e-mail. This isn't the most glamorous part of a BI solution, but our usage statistics from Matillion show that it is, interestingly, the most heavily used.

6. Office Integration

If your finance staff love Excel, why fight against the tide? Why not integrate Excel into your BI strategy as a front-end option?

7. Mobile Support

This used to be a "nice to have" add-on. Now it's a must-have feature. Executives on a holiday, managers at meetings with suppliers, and sales guys out in the field. Have their reports and dashboards delivered through mobile devices.

8. Security

Controlling who sees what with a BI solution is important. Security options can restrict access to particular areas, or right down to individual rows and columns of data.

There are a number of types of Business Intelligence and Self-Serve reporting solution available that will deliver some or all of the features you need. Here's how the choices break down.

1. Enterprise BI Solutions

These are highly capable and scalable BI technology suites, the likes of which include Cognos (IBM), Business Objects (SAP), Hyperion (Oracle), and Microstrategy.

Pros: Very scalable, to the largest businesses. Every feature you could ever want and more.

Cons: They're expensive and complex to implement and run. Complex tools don't suit all business users, and do not get adopted.

2. Data Visualization Tools

These are cool tools that lets you visualize data on graphs and dashboards. Tableau and Qlikview are examples.

Pros: They're really powerful graphically, and make great looking, complex dashboards and data visualisations.

Cons: You need to install them on individual PCs as they're client-server tools. They don't always have all the basic reporting capabilities such as scheduling, printing and self-serve report creation. Creating new reports is not an end-user activity.

3. Report Tools

These are products designed for basic reporting tasks such as formatting data into printable reports. Crystal Reports is an example.

Pros: They're cheap and effective for printing reports.

Cons: They're not BI tools. They can't analyze and drill-down into data. Creating reports is time-consuming and highly technical – an IT task.

4. Cloud BI Tools

Web-based solutions you buy on a software-as-a-service (SaaS) basis and access securely over the internet. Matillion belongs to this category.

Pros: Reduced risk of implementation because you "pay as you go". Typically designed to be easy to use. No hardware or software required. Web-based, accessible from anywhere. Usually faster to implement than traditional alternatives.

Cons: Some cloud-based BI tools are just that, tools that happen to be in the cloud. They may still require hard work such as data integration. Some customers have security/reliability concerns about Cloud, although this typically isn't the case nowadays.

5. Home Grown BI

Using Microsoft Excel and Microsoft SQL Server to hand-crank business intelligence.

Pros: Little capital outlay.

Cons: It can take a long time to implement and get value. True cost is usually higher than proper BI solution. Lack of essential features e.g. security, self-serve reporting, scheduling, web-based interface, mobile support. Ties up technical resource in your team maintaining the solution.

6. ERP Packaged BI or Reporting Functionality

Pros: They're designed to work with your existing ERP or core system.

Cons: They *only* show data in your ERP or core systems, ignoring data in other parts of your business. Often inflexible and difficult or expensive to modify.

Which of these is right for your company?

If you're a 50,000-employee company, then an enterprise solution makes sense. If you're a business analyst mining complicated data for spotting trends, then a data visualization tool sounds perfect.

If you're looking for something fast and easy to deploy and maintain, then a cloud-based BI solution can deliver results.

Action points:

- ❑ Review the features you need and prioritise them.
- ❑ Evaluate the types of BI solution available, and shortlist those most suitable for your needs based on your requirements, budget, timescales and attitude to risk.
- ❑ Compare your list of required features against your BI vendor shortlist.

CHAPTER 4:

Data Integration: Why It's a Critical Part of Business Intelligence

photo credit: naoK via photopin

Integrating your data into your Business Intelligence and Self-Serve reporting solution is easily the most complex and time-consuming part of a BI project.

The way we deliver integration for our customers at Matillion is on a fixed-price basis, because this type of work can easily take longer and cost more than the customer initially expects. This protects them from risk.

Your BI strategy must include consideration for integrating company data into your BI and Self-Service reporting solution.

So when planning your BI and Self-Serve Reporting project, it's important to consider:

1. Where your data is – on what servers, what technologies, and where geographically.
2. What data you need to extract (the work you did in 'Defining Your Analysis and Reporting Requirements' is key here).
3. How the data needs to be simplified, in order to make it useful and easy to use.
4. What calculations and business rules you need to apply to turn raw data into useful information.
5. How information needs to be joined together e.g. when analysing sales, you may want invoices joined to customers, products and sales representatives.

How do you achieve this technically?

At Matillion we use an ETL (Extract, Transform and Load) layer, which we think is a pretty good choice. There are ETL tools available from companies like Microsoft, IBM, Talend, or one comes as part of Matillion BI.

You could also consider building manual data extracts programmatically, although this will usually take longer and be less maintainable and flexible.

Another important Data Integration consideration is whether or not to use a Data Warehouse.

In our opinion, a Data Warehouse is key to a successful Business Intelligence implementation. They allow you to join data together from different sources, and put it all it into one place – one version of the truth.

You can organise your data to make it easy to work with. You can apply rules and calculations to the data before it enters the Data Warehouse, meaning when you come to report on it, the answers are already there. Finally, you can use business rules and other techniques, to "clean up and enrich" data – plugging gaps, fixing problems and adding value.

The data warehouse then, becomes a useful, up-to-date, accurate repository of information, rather than silos of disjointed data which requires processing in order to make it useful.

So consider carefully if you need a data warehouse, and factor this into your decision making process for a BI solution.

Action Points:

- ❑ Identify where your data is located and how it is stored.
- ❑ Develop a plan and select a technology to integrate your data into your chosen BI/self-serve reporting tool.
- ❑ Evaluate the benefits of a Data Warehouse for your organization, and decide if you need one as part of your BI solution.

CHAPTER 5:

Data Quality:
Garbage In, Garbage out

Data quality and "GIGO" (garbage in, garbage out) is one of the top concerns that customers raise with us in advance of Business Intelligence and Self-Serve reporting projects.

"My data quality is poor."

"We have different formats, codings and descriptions across different areas of our business."

"Data is inconsistent or duplicated across or even within systems."

At Matillion, we talk a lot about BI and data quality being "chicken and egg".

Here's a few things to consider, and perhaps reassure yourself with, in terms of the GIGO issues associated with BI projects:

1. Based on the dozens of implementations of business intelligence we have done here at Matillion, we know that implementing a BI solution *improves* data quality. The visibility of all your data in one place, that is easy to analyse and drill-down into, and allows you to spot data quality problems and then fix them. Quality issues that were previously buried, stick out.

2. BI technology, specifically ETL and Data Warehousing, can help improve the quality of data, using rules. Here are some useful examples of this: you can merge codings and descriptions that have been entered with variation, into one neat coding; if you have data embedded in your product/customer codings, this can be derived; and you can "embellish" neat and tidy "meta data" onto source data.

3. There is almost *always* enough structure in underlying data to get started. ERP and core systems require a level of structure to work, and this can be capitalized on. So while you may not have the perfect product or customer grouping on Day One, you will be able to tick the key, basic boxes, then use BI to help you improve data quality over time.

The key takeaway when considering data quality and GIGO in the context of a BI solution is:

- ✓ Everybody worries about data quality and may start off by thinking it's a reason they *can't do* a Business Intelligence and Self-Serve Reporting project.
- ✓ Almost always, this isn't the case, and the BI project itself will a) be possible, and b) will *improve* data quality, both immediately and over time.

Action Points:

- ❑ Evaluate your reporting and analysis requirements and assess your data quality to support these requirements.
- ❑ Consider beginning to improve data quality now, even if it's just on a spreadsheet e.g. Get a list of all of your customers, define some key groupings (sector, end-user type, size), send this list to your sales team and get them to correctly categorise each customer. You can merge this data in as part of your BI project later.

CHAPTER 6:

Implementing a BI Project: Costs and Expectations

"We are already seeing benefits with the speed and simplicity of the analysis tools".

Paul Holliday, Financial Director, Henry Colbeck Limited

Traditionally, Business Intelligence and Self-Serve reporting projects have been expensive and time consuming to implement. According to Gartner, 70-80% of BI projects fail.

Thankfully, it doesn't have to be like this anymore. At Matillion, for instance, we deliver business intelligence projects with cost-effective, fixed price implementation and a single, all-inclusive monthly subscription that includes support and ongoing changes. The implementation process has been designed to be low-pain and fast, so we can deliver an effective, enterprise quality, Business Intelligence and Self-Serve Reporting project in a few weeks.

If you are considering an on-premise (i.e. non-Cloud) BI solution, here's some information that may help you quantify costs and timescales:

1. You can estimate the ancillary costs (installation, hardware, consultancy, support, staff etc) at between 300-700% of the license cost that you budget for, depending on the size and scope of your project. So if you're looking at a £20,000 spend on software, you should plan to spend £60,000 on everything else. With £100,000 on software it could be £300,000 - £700,000 by the time you've fully implemented the system.

2. Some of the above costs may be taken internally – the cost of dedicating your staff or taking onboard skills to run the software.

3. Implementation and maintenance will represent 60-70% of the total annual cost of your BI solution, in an on-premise model.

4. Average on-premise Business Intelligence projects take 12-24 months to implement.

5. Self-serve, cloud-based BI delivers approximately 60% lower support costs than traditional solutions.

BI can deliver quantifiable benefits, even in traditional, on-premise models. Now that it can be done faster, more cost-effectively and with less effort using, for instance, Cloud Business Intelligence and self-serve reporting, the business case becomes compelling.

75.5% of companies who "substantially outperform their peers financially" also said data analysis was "very important or essential" in their organizations..

Source: "Fostering a Data-Driven Culture", Economist Intelligence Unit, October 2012

- ✓ Faster decision making with better information can translate to direct bottom line impact.
- ✓ Insightful analysis of pricing and margins helps align strategy to execution, and identify areas to grow and areas to back away from.
- ✓ Gap analysis across sales and supply chain can increase revenues and rationalize purchasing.

- ✓ Inventory analysis can reduce stock levels and free working capital.
- ✓ Time saved in the production of manual reports equates to increased employee productivity and/or reduced headcount requirements.

According to Nucleus Research, Business Intelligence and Self-Serve Reporting delivers Return On Investment (ROI) as follows:

Level 1 – Report Automation

- ✓ Cutting our manual report production, saving time, and reducing errors.
- ✓ Average ROI 188%

Level 2 – Tactical BI

- ✓ Leveraging analytics to improve decision making, rather than just saving time.
- ✓ Average ROI 389%

Level 3 – Strategic BI

- ✓ BI deployed across most of the organisation, and is used to align daily operations with the goals of senior management.
- ✓ Average ROI 968%

You can also build into your business case the non-cost benefits associated with Business Intelligence and Self-Serve reporting:

- ✓ Increase frequency and reduce delay in management reporting.
- ✓ Reduce reliance on key individuals for the production of reports, reducing bottle-necks and risk.
- ✓ Reduce errors and improve consistency.
- ✓ Turn valuable data, buried in systems, into useful management information.
- ✓ Deliver high quality management information to managers, employees and even customer or suppliers, helping align strategy to execution and improve visibility.

The list of benefits is long, but the key is to evaluate the cost and non-costs benefits to your organization: in improving decision making, reducing wasted time and delivering the smarter, clearer picture you need to make your company as strong, adaptable, and successful as it can be.

Action Items:

- ❑ List the key financial and non-financial benefits to your organization of improving reporting and delivering self-service business intelligence.
- ❑ Estimate what you spend today on the creation and distribution of management information e.g. hours spent x fully laden employee cost.
- ❑ Estimate the tacit improvements you could make by, for instance, cross-selling more effectively, reducing inventory levels, streamlining suppliers, or reducing debtor days.

Checklist

Use this checklist to help you successfully evaluate, plan and implement Business Intelligence in your company.

1. Identifying The Requirement – Why You Need BI?

- ❑ Review the list of pain-points in this e-book and compare these against your own experiences.
- ❑ Identify if a BI and Self-Serve reporting solution would help your business.

2. Selecting The Right Solution

- ❑ Evaluate the types of BI solution available and shortlist those most suitable for your needs based on your requirements, budget, timescales and attitude to risk.

3. Defining Your Analysis and Reporting Requirements

- ❑ Define the Facts, Dimensions and Measures you need to satisfy your reporting and analysis requirements.
- ❑ Consider breaking down your implementation into functional, bite-size chunks aligned to business functions.

4. What Features Do You Need?

- ❑ Review all the features you need and prioritise them.
- ❑ Compare your list against your BI vendor selection.

5. Integrating with your systems and data sources

- ❑ Identify where your data is located and how it is stored.
- ❑ Evaluate the benefits of a Data Warehouse for your organization and decide if you need one as part of your BI solution.
- ❑ Develop a plan and select a technology to integrate your data into your chosen BI/self-serve reporting tool.

6. Evaluating Data Quality and "Garbage In/Garbage Out" Strategy

- ❑ Evaluate your reporting and analysis requirements, and assess your data quality to support these.
- ❑ Consider beginning to improve data quality now.

7. Building a Business Case

- ❑ List the key financial and non-financial benefits to your organization of improving reporting and delivering self-service business intelligence.
- ❑ Estimate what you spend today on the creation and distribution of management information e.g. hours spent x fully laden employee cost.
- ❑ Estimate the tacit improvements you could make by, for instance, cross-selling more effectively, reducing inventory levels, streamlining suppliers or reducing debtor days.

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http://bit.ly/matillion-demo

If you're interested in improving your access to management information, request a custom demo of Matillion's cloud business intelligence software.

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