

# Reporting 101

## Understanding the Why, What, and How of Reporting Solutions

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### Introduction

There is no question about it: global economic times are tough right now. Businesses are faced with increasing pressure to find ways to optimize their operations and “tighten their belts” to continue delivering value and making a profit. Surviving these times and continuing to grow your business requires that you fully understand the way your business is operating. It requires that you have the right information at the right time to make important business decisions.

The key to delivering that information to business decision makers in a timely fashion is reports. Reports are something everybody has heard of before, and they are ubiquitous in most business environments. Usually, the term “report” is used to describe any document or display that contains data, but when you start talking about “reporting,” a report has a more specific definition that can sometimes be difficult to understand.

In this quick introductory look at reporting, we'll try to clearly establish what a reporting solution is, how reports differ from documents, why you should adopt a reporting solution for your organization, and how Telerik Reporting is the perfect fit for delivering the business critical reports you need.

### Why are reporting solutions important?

With the advent of modern computer workflows, most businesses are collecting tons of “information” about their operations. Research, however, shows that most of this information fails to deliver any real value to the business because it is not being transformed into “knowledge.”

Taking data from simple “information” to “knowledge” requires analytics, or the application of some understanding of the data to highlight issues, trends, and changes in the data that are relevant to business decisions. This is one of the primary roles filled by reporting solutions. Reporting solutions- via the reports they generate- encapsulate the rules required to understand business information and turn it in to knowledge.

Businesses that don't engage in this process are literally leaving money on the table and failing to maximize the effectiveness of their business. In a recent InformationWeek article on the state of business intelligence- another encompassing term for “reporting solutions”- the magazine reveals that some companies are even using reporting to help drive business success by exposing to employees reports tied to incentive pay. The reports aggregate key business performance metrics and employees can easily track their impact on business performance through well designed and easy to access reports, driving them to record performance. Failure to adopt a reporting solution means that your business is not only losing money due to missed opportunity, but you're also wasting money ex-

pending more effort than you should creating and recreating reports for different users in different environments.

### What can I do with reporting solutions?

Within the “reporting” space, reports are primarily concerned with transforming business data into a format that enables business analysts to understand the condition of the business and make informed decisions based on that condition. While simple reporting can be done with tools like data grids, reporting solutions offer much more flexibility and power to present data wherever it’s needed- be that in a Windows application or a web application.

By logically combining reporting objects, organizations receive unprecedented ways to view their business performance and to analyze the information in the most efficient manner. Reporting gives the ability to create reports containing any number of report objects - charts, cross tabs, and lists, as well as non-reporting components such as styling, images, and text. These objects allow you to create fairly simple data views such as invoices and inventory reports, or more advanced data dashboards. Their true power however lies in the ability to add calculations for creating forecasts, to filter data in order to see the organization’s performance for a particular period of time, and even to conditionally format data to highlight the most important information.

### How do reporting solutions work?

All reporting solutions ultimately put information (data), layout (report definition), and analytics (logic) in one place to produce a report, which can be reviewed in a Windows or web environment, and exported to various document formats (such as PDF, Excel, and Word).

A report, in the context of reporting solutions, is a *report definition* (see Fig. 1). The *report definition* specifies the connections to the data source, as well as the layouts and styles used to present the data. Layouts define the structure and rules of the data representation, and styles define how data will look once retrieved.

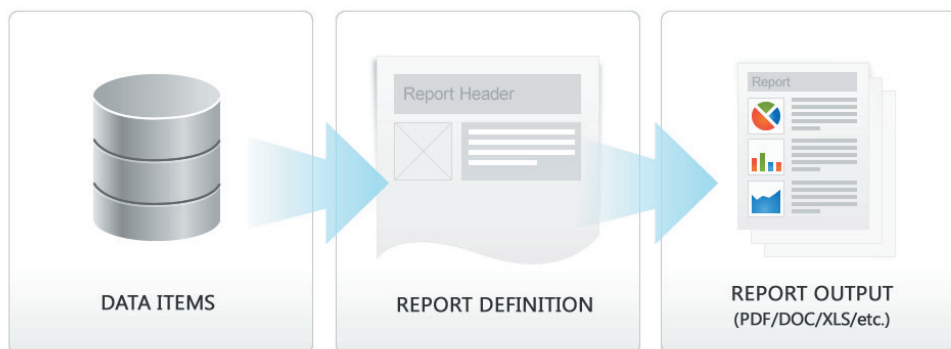


Fig 1: Data Items are fed to reports and then output to static documents

The report definition does not deal with data directly, because data is not live. The report has to be processed and rendered in order to view data. The report definition is simply a template, a static layout which rarely changes, and which (much like templates) has the characteristic to produce content with consistent look and feel across all report sections.

Although reports do not work with data directly, the report author has to have good knowledge of the data, as well as the tools to create nice looking and helpful reports. Here is where the reporting solution comes in – it deals with the report layout, styling, and report processing. The layout and styling are created in a special tool, called report designer, to produce the report template, which is filled with data during the report rendering process to produce the final report. The report can be run at any time and it will show the latest state of the data stored.

Another perspective on how reporting solutions work is to view the report as a **repeater**. Like repeaters, which are used to display a repeated list of data, a report displays data by applying “rules” (or “templates”) to the data and then rendering that data in a layout that’s ultimately designed to be printed. Also like repeaters, individual data items rendered in a report *cannot* be altered. The templates are defined and then applied to all data items the same way (see Fig. 1).

### Report characteristics

A report can generally be characterized as having these qualities:

- Its layout is based on a set of “rules” and those rules are consistently applied to data pulled from a data store (such as a database, collection of business objects, XML files, etc.)
- Its layout (or “template”) is created first with no data, and then data is automatically added to the report at “run time” (or at the point the report is viewed)
- Its data is pulled from a data store based on some type of query. That is, the data in the report is the result of a data query and it is not added manually by designers or users when the report is designed
- Its layout is “paper oriented,” or designed with printing in mind. That means page breaks, page margins, and page sizes are all considered when design and rendering a report.
- It can apply analytics (or “expressions”) to the data to make the data easier for business users to consume

### What *isn't* a report?

Sometimes it helps to understand what a report *is* by also understanding what a report *is not*. It's easy to confuse the reports that reporting solutions generate with other types of business reports, and even documents, so it's important clarify what a generated report is not designed to do.

Generally speaking, a report is not:

- **A Word or Excel document.** Unlike reports, documents are “snapshots” of static data. They are sources of data and not consumers of data. Once the report renders, its static output becomes a document! Figure 2 below helps illustrate this concept.

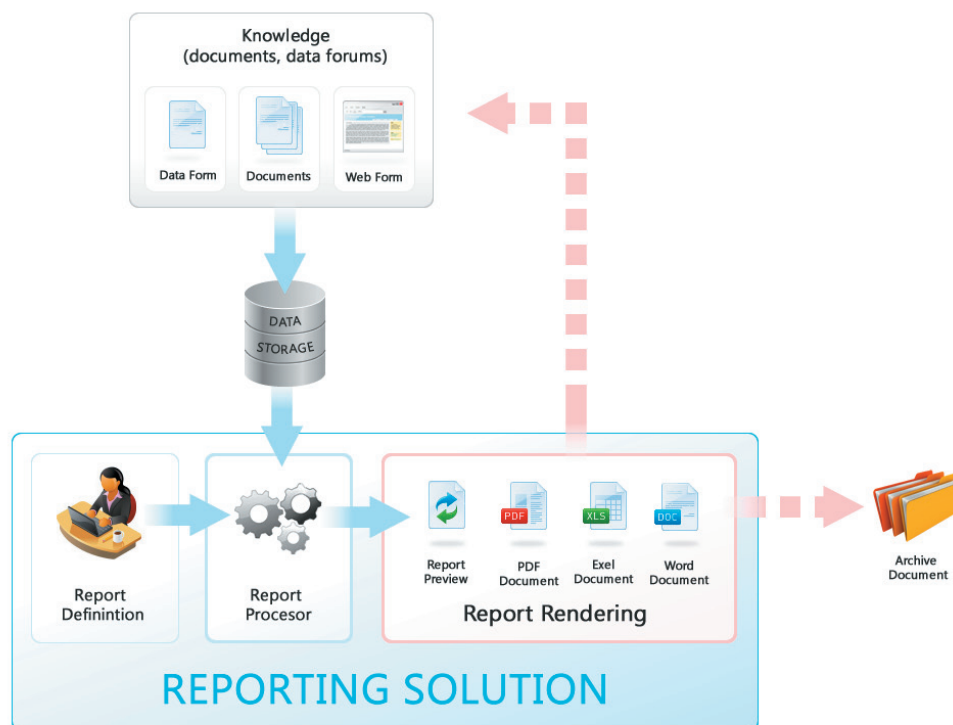


Fig 2: Data flows to reports and then exports to static documents

Documents can be produced many ways, including:

- Manually (in a program like Word or Excel)
- Automatically (with a program like a documentation creator or PDF creator)
- By a reporting tool!

A document is the final static output of a report and it is a read-only perspective of the source data.

- **Intended to be a flexible page designer.** A report *can* be very flexible and render many types of report items (for instance, tables, charts, barcodes, images, shapes, and text), but it will render those items according to the report definition. You cannot, for instance, insert an item in one place on a report page unless you intended to insert that item on every page in the report in the same place.
- **A data grid.** Data grids, while great tools for displaying data, do not offer the analytics that reports do and they are not designed in a “paper oriented” manner. Data grids are also hard to move between environments (such as windows and web applications), unlike a report definition that can be shared between many environments.
- **A report does not require every page be manually “designed”** (as you would do with a Word document). A report instead uses template rules and renders data according to those rules on every page of the report.

To summarize, reporting solutions define the queries that are used to retrieve data, as well as the layouts and styles (report definitions) used to present the data into a report.

### How do I add reporting to my project?

So, if you accept that reporting is important, the key is finding a reporting solution that easily adapts to your business and does not disrupt your existing business processes. You need a tool that is both powerful and easy to use so that the cost of implementing reporting does not outstrip its value to your business.

The best way to add reporting to your projects is Telerik Reporting, a full-featured reporting solution from the .NET tool experts at Telerik. Not all reporting solutions are created equal, though, and Telerik’s unique approach to reporting makes it easier than ever to start transforming business data in to knowledge with little to no learning curve. Among the unique features found in Telerik Reporting are:

- An innovative Visual Studio-integrated report designer that blends the rich layout functions of drawing applications with the power of a report generator
- Easy to use analysis tools that enable you to apply analytics to data without writing any code
- Powerful wizards that can automatically create and design report layouts
- Great flexibility to control the report behavior and connect it to *any* data source in your organization
- Rich report viewers that are easy to add to any WebForms or WinForms application, with full support for exporting to all popular document formats (like Word, PDF, TIFF, and MHTML)
- Simple and affordable licensing

Telerik Reporting makes it easy to add essential reporting functionality to any .NET application. There is no need to continue wasting time manually creating Word or PDF reports, or struggling with HTML to layout your reports for the web. With Telerik Reporting, you can have rich, visual reports that are easy to add to any ASP.NET or WinForms application designed and deployed within minutes of getting started.

Reporting is an essential activity found in all successful businesses, and Telerik Reporting is the essential tool you need to build and deliver your reports. Experience is the best proof, though, and free trials of Telerik Reporting are available to make that possible. Download the trials, discover the how easy it is to create reports, and begin delivering the value reporting provides to your business today!

Download Telerik Reporting free trial today