Progress Telerik

A Quick Guide to Expert .NET Reporting Tools

Learn how to beautifully present any analytical and business data

EBOOK

Contents

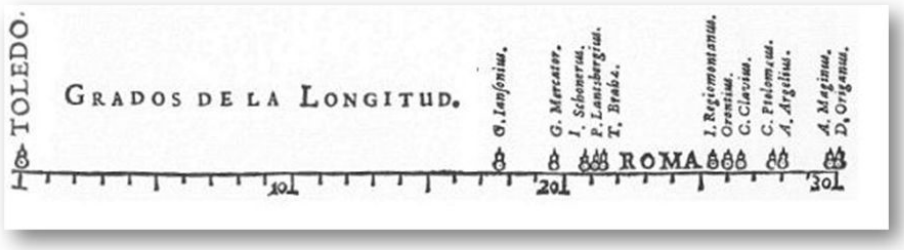
Introduction

Clear and accurate reporting tools play a pivotal role in any business decision today. As organizations strive to become more data-driven, vivid presentations offer a powerful vehicle to harness and understand information. However, visualization as a tool is not new. For centuries, visualizations have been helping people make sense of data and complex notions, and tracing back the origins of visual storytelling will hopefully provide a solid foundation for choosing an expert reporting tool.

A Brief History of Data Visualization

In 1644, Michael Florent van Langren, a Flemish astronomer, is believed to have provided the first visual representation of statistical data. It was a one-dimensional line graph that showed the twelve known estimates at the time of the difference in longitude between Toledo and Rome. The graph also linked each estimate to the name of the astronomer who provided it. What is notable here is that while Van Langren could have provided this information in a table, it is the use of the graph that visually displays the wide variations in estimates.

The First Graph - 1644



Michael Florent Van Langren

Then, in the 18th century, we observe the beginning of thematic mapping. This period also gave us William Playfair, widely considered the inventor of many of the most popular graphs we use today (line, bar, circle, and pie charts). Many statistical chart types, including histograms, time series plots, contour plots, scatterplots, and others were invented during this period.

At the beginning of the 19th century and continuing today, we continue to see dramatic and interesting developments in data visualization. From one and two-dimensional maps and charts to multidimensional presentations of big amounts of data. There has been tremendous development strongly supported by advancements in technology.

Data visualization is a general term that describes any effort to help people understand the significance of data by placing it in a visual context. Patterns, trends, and correlations

that might go undetected in text-based data can be exposed and recognized easier with data visualization tools.

Today's data visualization tools, also called reporting tools, go beyond the standard charts and graphs used in the earlier periods. They can display data in more sophisticated ways such as infographics, dials and gauges, geographical maps, heat maps, and detailed bar, pie, and other charts. This is due to the advancement of digital information in today's business environment.

Business processes and people are moving information at incredible speeds thanks to the adoption of digital information. This has forced businesses to adopt digital workflows to exchange information quickly. An example of this might be a stock brokerage or bank transactions are done all digitally with the only bottleneck being data transfer rates.

An organization like a bank or an accounting firm or any other company which uses data for business decisions requires reporting tools that meet specific criteria to operate these high-end digital workflows. A proper reporting solution is of the utmost importance to ensure streamlined processes and accurate information is delivered.

It is safe to say that we are living in a Golden Age of data visualization. This brief history and the state of the current times affirms that behind any smart business decision lies a significant amount of data visualized in the best possible way. Because of this, a complete set of reporting tools is critical for well-designed and optimized data visualization.

Choosing a Reporting Solution

Presently, there are many automated reporting tools on the market, offering a variety of functionalities. It can be hard to navigate them all and choose the best option. In assessing the best reporting tools, the following criteria are a good place to start:

1. Presentation
2. Powerful
3. Productive
4. Pliable
5. Performant
6. Price

The first step in a reporting process is deciding on the presentation. It goes without saying that, to present something beautifully, it should be easy and intuitive to create. For example, designing a report with a drag-and-drop, what-you-see-is-what-you-get (WYSIWYG) approach is simpler and users enjoy it more. It is also expected to apply uniform styling and it should not take programming wizardry.

During the presentation workflow, there usually comes a time to connect to data. After all, this is the power of any report. Good reporting solutions connect to many data sources and data types. Powerful reporting solutions stand out with the ability to manipulate data to meet presentational needs.

After creating the presentation, it is time to deliver and this needs to be very productive—fast, efficient and with minimal effort. This is because the report is expected to be seen in the most possible ways. Stakeholders want to be able to view reports across different platforms like web and desktop. Additionally, reporting workflows may require pliability in delivery as the report may need to be consumed simultaneously as a presentation and a data source.

To meet the powerful presentation criteria, the underlying reporting engine should also be performant. A major expectation of a reporting engine is to integrate with and/or build a variety of line-of-business (LoB) applications to deliver reports. The ability to create these applications extends the reporting solution.

As with any solution, the benefits should outweigh the price. At a minimum, the solution should meet the previous criteria. However, it should still provide enough extensibility allowing the end user to build whatever solution they choose. These 6 Ps—Presentation, Powerful, Productive, Pliable, Performant and Price—are the cornerstone of choosing an expert reporting solution.

The Expert .NET Reporting Tool: Telerik Reporting

Progress® Telerik® Reporting offers a complete feature set for report creation, styling and interactivity. The intuitive Standalone Desktop, Web and Visual Studio Integrated Report Designers ensure “pixel-perfect” presentation with sophisticated features like conditional formatting, report books with table of contents, custom interactive actions, PDF security, private fonts, continuous paper printing and much more. This enables report designers to easily create complex reports from anywhere.

Powerful data connectivity is achieved at design time in data source components with no-code report item bindings that can bind to several sources simultaneously. This includes Microsoft SQL Server Analysis Services cubes, ADO.NET data sources, relational databases, business objects, ORMs and XML. Programmatic data binding at runtime is also supported. Productive developers can also quickly integrate reports in responsive HTML5/JS, Angular, React, Vue and ASP.NET web apps (Blazor, ASP.NET Core, ASP.NET MVC and ASP.NET Web Forms), as well as desktop apps (WPF, WinForms and UWP), enabling a deliver-anywhere experience.

Expanding on the deliver-anywhere experience, Telerik Reporting includes pliable reports that can be easily exported to more than 15 formats. The supported formats include DOC, XLS, PDF, PPT, image, CSV and more. All of this is made possible by the modern and performant reporting engine. Furthermore, Progress® Telerik® Report Server builds on everything that Telerik Reporting offers by accommodating large enterprise scenarios with distributive and collaborative functionality as a turn-key solution. I will unroll the topic of turn-key solutions some paragraphs below.

To summarize, Telerik Reporting enables simple presentation design with powerful control over the data from anywhere. It empowers developers and designers with a productive and pliable workflow, which is supported by the performant reporting engine, to deliver reports everywhere. And it does all of this at an affordable price for an organization of any size.

Presentation: Report Creation, Styling, Interactivity and Organization

The presentation in a complete reporting solution is understood as tooling that is suitable for any user on any platform. A report designer provides a graphical interface where developers or users can define data sources, datasets and queries, layout positions for different data fields, using a set of data items like Crosstab (for pivots), Table, Graph (for charts), Map, Choropleth and interactive features, such as parameters and sets of reports that work together. The report designer is the heart of reporting tools that provides a guided flow for report creation and styling.

Report Creation

The designer should be easily accessible and intuitive, requiring minimal training to use and should work across different form factors. The designer tool's job is to abstract the complexities of designing a report. By providing numerous styling capabilities, such as conditional formatting, CSS-like styling and countless wizards, it helps users create complex report layouts, style reports beautifully, manipulate data and build visually appealing presentations. Generally, there are different types of report designers grouped by platforms.

In Telerik Reporting, there are three report designers across desktop and web-based platforms. The desktop designers include the Standalone Desktop Report Designer and the Visual Studio Report Designer. It also comes with the full-featured Web Report Designer. These are available with every Telerik Reporting license. While each has the same functionality, they do provide different benefits to the end user.

Desktop Report Designers

Desktop Report Designers are generally self-contained applications or tooling that is used with an Integrated Development Environment (IDE). These also target different users. The self-contained application targets power users and the IDE tooling targets developers who need advanced capabilities like hooking into the report processing lifecycle.

Telerik Reporting includes two variants of the desktop designer: The Standalone Desktop Report Designer and the Visual Studio (VS) Report Designer. Choosing between the designers relies upon the needs of the report and the preferences of the report author or developer.

Standalone Desktop Report Designer

The Standalone Desktop Report Designer enables end users to start from scratch with easy drag-and-drop design or by choosing from the huge library of pre-defined templates. It allows them to create, design, edit, preview, save, export and print reports seamlessly and without any code.

A report designer gets distributed with every installation of Telerik Reporting. The standalone tool is fully featured for creating and editing declarative report definitions. It is distributed to end users as a self-contained executable, named **Telerik.ReportDesigner.exe**.

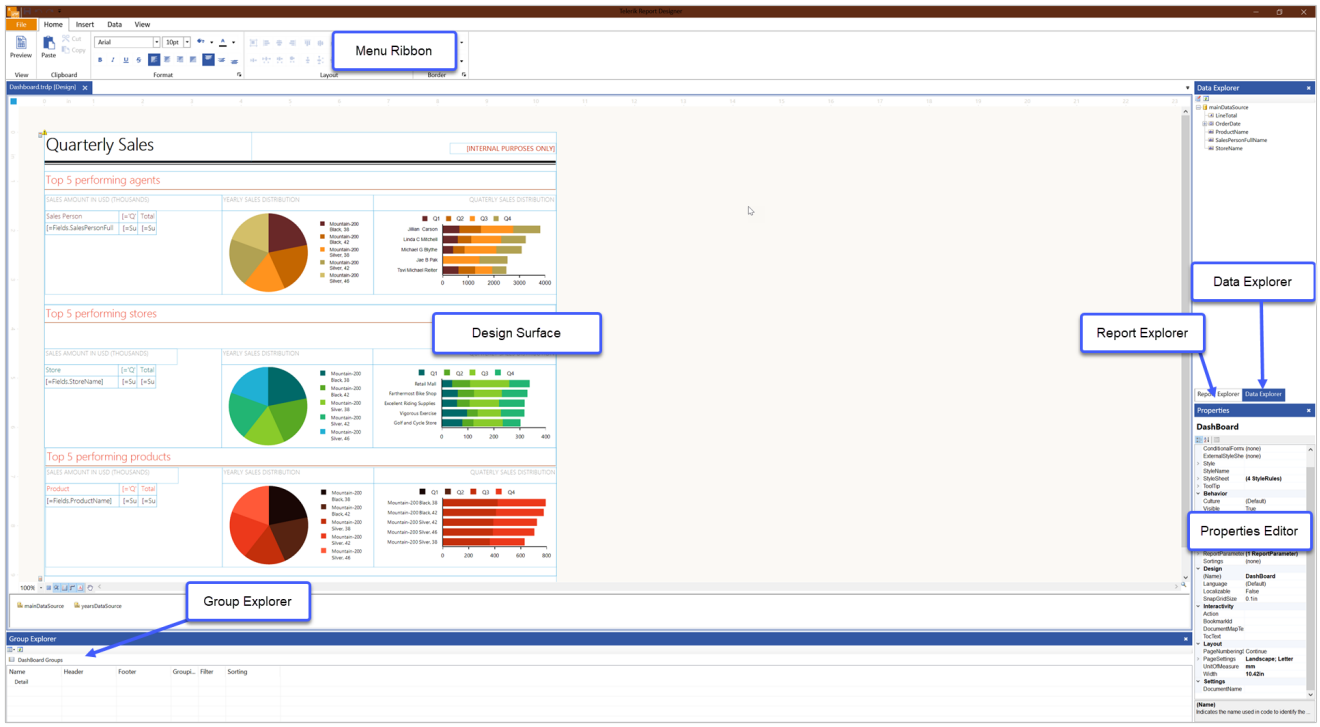
The Standalone Desktop Report Designer offers a complete feature set for editing reports (.trdx and .trdp files) and report books (.trbp files). The interface offers a ribbon bar with

multiple tools for layout, formatting, insertion of various report items, data sources addition and viewing options. It also offers dedicated contextual editing based on the currently selected report item.

The Standalone Desktop Report Designer also has extensibility options from its configuration file, so that custom user functions and business objects can be accessed while working with the report. In the case that more customization is needed, then the IDE designer is more suitable.

Every report designer starts in the Report Design Surface, the heart of the designer, bringing the visual representation of the report and all its child items, enabling pixel-perfect item movement and resizing. It displays visual cues like snap lines, item offsets from the parent bounds, overlapping warnings and more. There are many important Graphical User Interface (GUI) areas of the design surface.

One area of the designer is the Report Explorer. It provides a visual tree representation of the parent-child relationship for all items, where the report item itself as a root item. Another important area is the Data Explorer. It lists the available fields, including the calculated fields, and allows easy drag-and-drop behavior to insert new data-bound text labels in the report. The designer also includes classical Visual Studio style Properties Grid area, allowing a granular setup of extensive report-creation APIs.



Visual Studio Report Designer

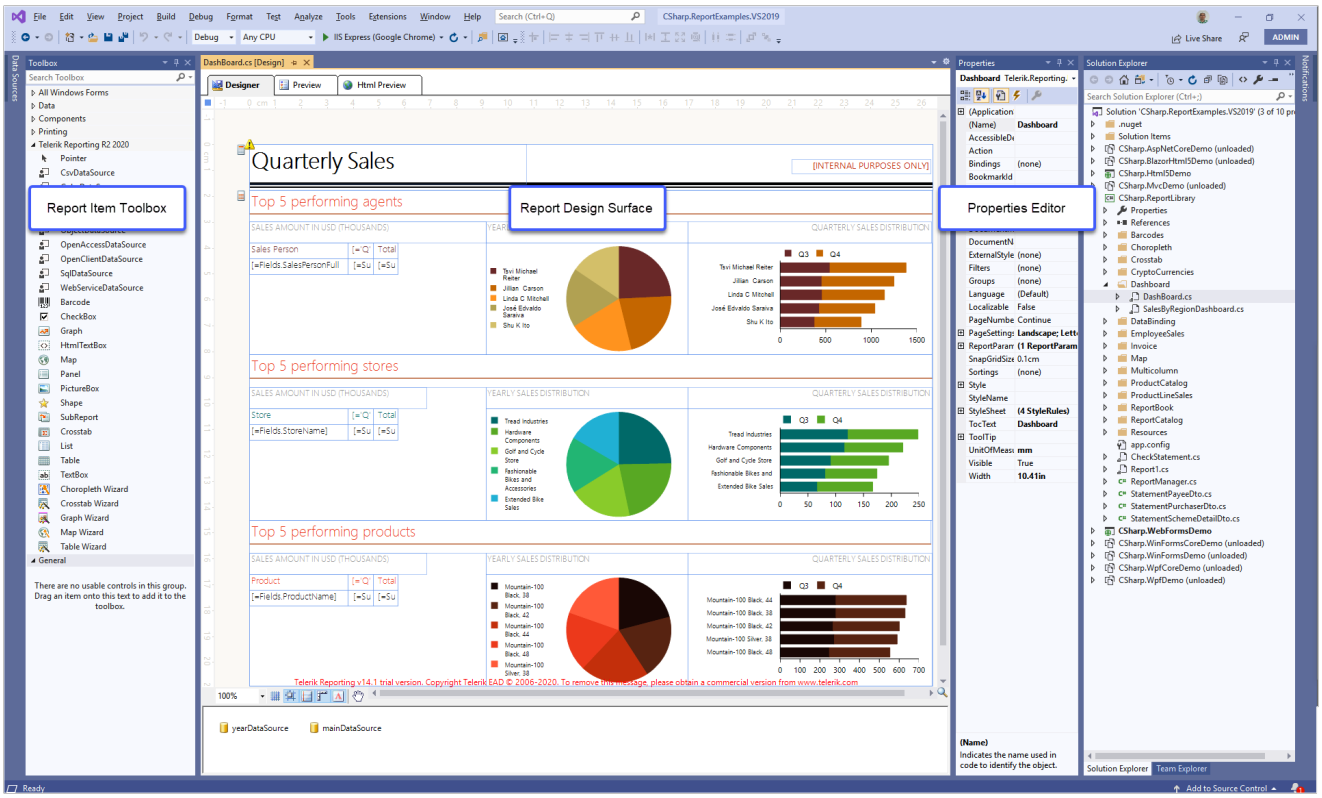
The Visual Studio Report Designer is a tool fully integrated into the famous IDE with a WYSIWYG design surface, New Item support, Properties Grid integration and three dedicated tool windows. This makes it a full-featured tool for creating and editing compiled (CS or VB) report definitions. It gets integrated into the existing Visual Studio instances on the developer machine from the Telerik Reporting product installer as a Visual Studio Extension (VSIX) package.

The designer offers to start a new report, using various templates and setups like a band, table, crosstab and label reports. These templates will guide the user through adding data sources and creating the report. The designer also exposes all the necessary tools for editing compiled reports, report books and project level reporting data source components.

Desktop designers are relatively similar in visual appearance and functionality. The exception here is that, when using the Visual Studio Report Designer, the source code is also visible, which enables hooking into specific events for Report Items to slightly alter the Report Processing Lifecycle. It is also easier to create and distribute Custom User Functions, allowing for more complex calculations.

The main window of the Visual Studio Report Designer is the Report Design Surface. Like the Standalone Report Designer, it provides a visual representation of the report and all its child items. It also displays the visual cues like snap lines, item offsets from the parent bounds, overlapping warnings and specialized tools for a table, crosstab and map data items. The difference is the additional design editor areas are dedicated windows.

One of the dedicated windows of the designer includes the Report Explorer. It provides a visual tree representation of the parent-child relation, with the report item itself as a root item. Another dedicated window is the Data Explorer. It lists the available fields, including the calculated fields, and allows easy drag-and-drop behavior to insert new data-bound text labels in the report. The Group Explorer window resembles the hierarchy of the data item groups and provides easy access to their properties. The designer also includes classical Visual Studio style Properties Grid area allowing the granular setup of extensive report creation APIs.



The window editors offer granular Style, Conditional Formatting, Grouping, Style Sheets alternation and many more. Upon edit, the report author may run the handy built-in report preview functionality to make sure the intended layout is achieved. A recent useful addition is the Upgrade Wizard that can be accessed from the dedicated Telerik menu. This updates the Telerik Reporting assembly references and other versioned resources when a new Telerik Reporting product version gets installed and the project is opened.

Web Report Designers

The idea of a Web Report Designer is to deliver the same report authoring experience as the Standalone Desktop Report Designer, only through the web. This allows anyone to edit a report and access it from anywhere. It is designed as any existing Software-as-a-Service (SaaS) reporting solutions.

Web Report Designer offers easy-to-use layout for a fine-grained WYSIWYG functionality. It features most functionalities of Desktop Report Designers and adds more. A big benefit is enabling developers and report authors to bring report editing functionality to their end users right from their web applications.

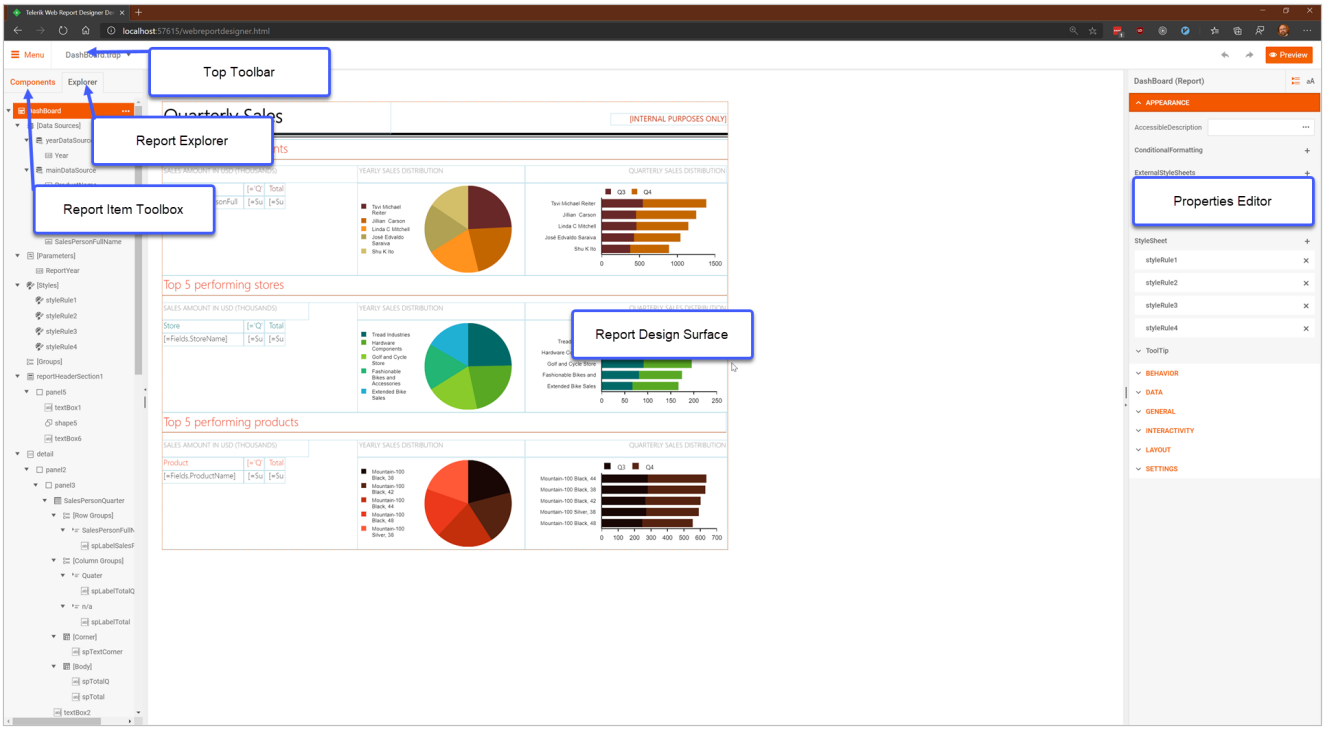
Web Report Designer

Web-based Report Designer, or simply Web Report Designer, is the next-gen tool to deliver report editing capability to end users without their having to leave the web application. Unlike other report designers, it is a control, a jQuery widget, so that it can be fully integrated into any web application. The vision for it is to provide the next level of user experience editors so that less-technical end users feel comfortable with it. With this designer, users may create and edit declarative report definitions (.trdx and .trdp files) and report books (.trbp files), which can also be used in the Standalone Report Designer.

Architecturally, the Web Report Designer relies on a web service backend that retrieves and saves the report definition. It is fully customizable so that reports can be saved in a database or storage of choice. The web service is implemented into a .NET Core or .NET Framework Web API controller. The client-side jQuery widget is built using the Progress® Kendo® UI widgets. The widget exposes options, determining the initially loaded report, its behavior and its view. Having this architecture, the designer gets easily deployed to the end user as part of the web application.

The designer implements a rich feature set for creating and editing reports. The workbench offers a top toolbar area with carefully chosen functionality to make it simple and guiding for the end user. The central area of the designer displays the Report Design Surface, providing the visual representation of the report and all its child items.

The Report Item Toolbox tab on the left alternates with the Report Explorer tab. The former lists all available report item templates and data source templates that the user can add to the report. The latter provides a visual representation of the parent-child relationship for all items already part of the report, including the report item itself as a root item. It also incorporates the available data sources, each with a list of the available fields, including the calculated fields. On the right, the designer includes a user-friendly Properties Editor that displays custom, easy to use editors for each item property of the currently selected item.



In reviewing all three report designers included with Telerik Reporting, it shows a consistent design experience across each platform. With each designer, there is a design surface that fully embraces a drag-and-drop, WYSIWYG philosophy and includes sections for the Report Item Components, a Group Explorer, Data Explorer and the Report Explorer. The platform availability of each designer enables the ability to create a report anywhere. Another important facet for presentation is the styling experience.

Report Styling

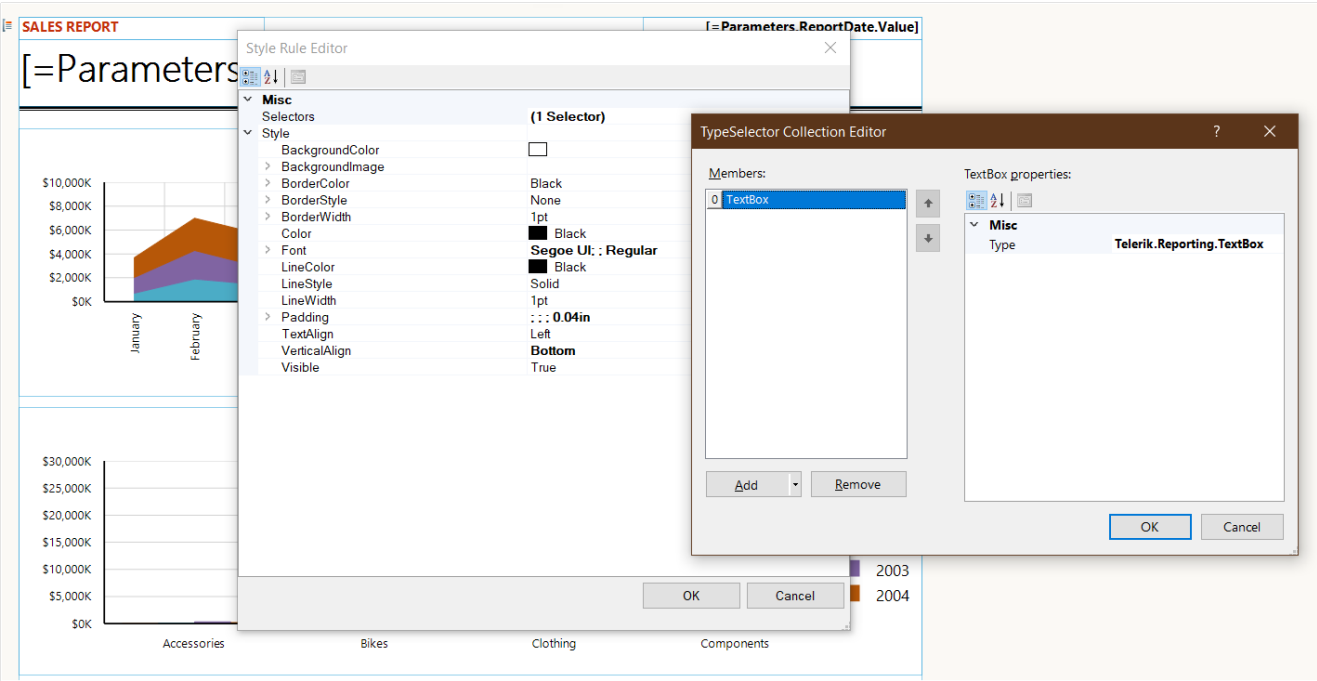
When choosing a reporting software solution, it needs to be feature-rich and flexible enough to author reports quickly and consistently. This makes report styling one of the core features of a report designer. Concepts like interactivity, actions, and organization also complement the styling experience.

Because of this, a report designer can provide numerous styling capabilities to display data in many ways. Each reporting solution may have a different design philosophy. Some may be more intuitive than others and some may be more granular, offering even more complexity.

Report styling is one area where Telerik Reporting shines as a reporting solution. Specific design decisions have been made with styling simplicity in mind. For instance, imagine styling a report that contains hundreds of report objects—it would be painstaking to change the style for each object individually.

Styling Experience

Styling consistency is maintained across reports by using a Stylesheet and Selector approach. In this way, styling is applied to each report item with the designated selector. Furthermore, by using data-bound items like maps, charts, crosstabs, and sub-reports, users can present interactive report decks and other elements like dashboards, reports by region, invoices, inventory reports, barcode reports and much more. This data-bound styling is possible because of conditional formatting and data-driven styling features like bindings.



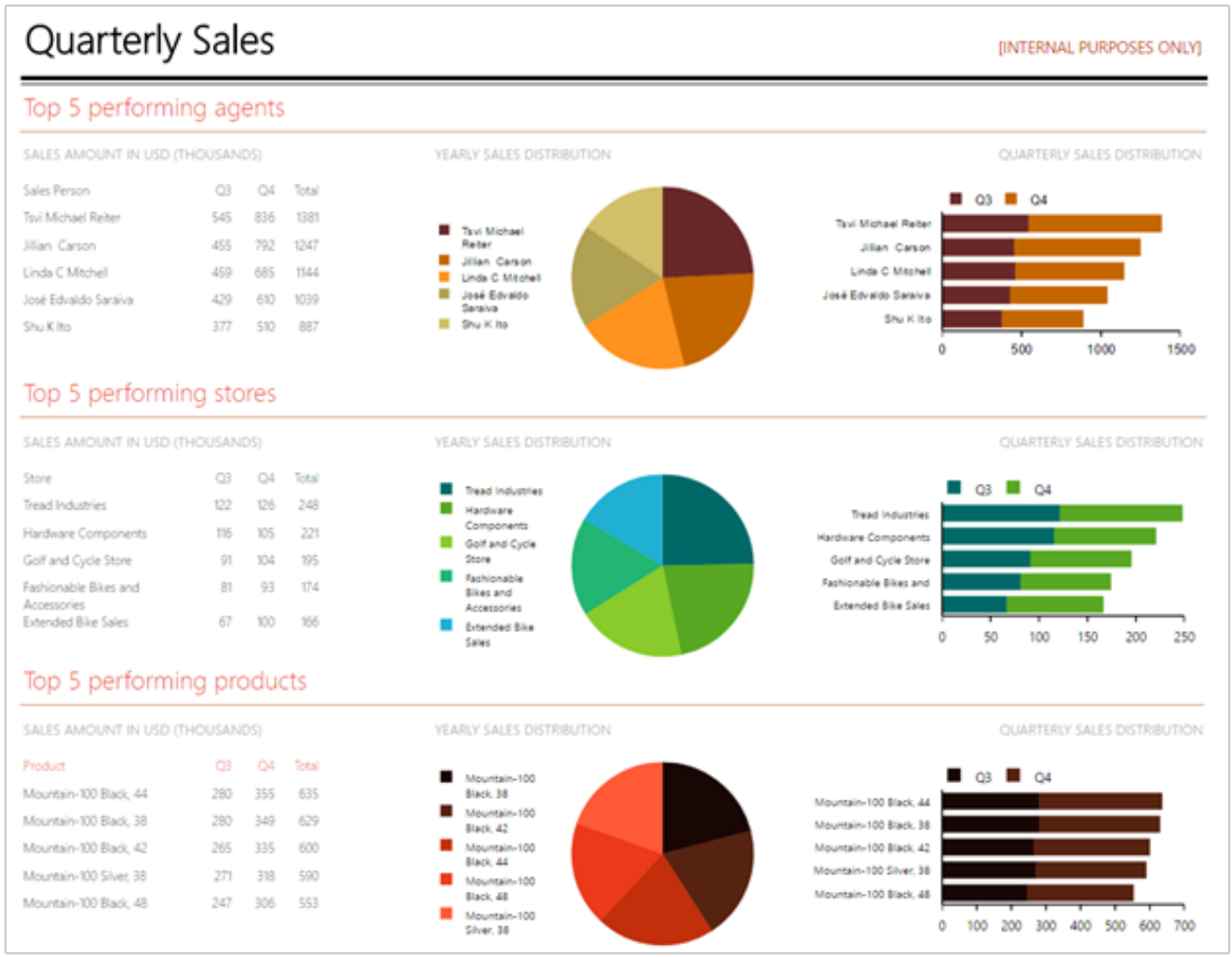
Granular and Reusable Styling: Every Designer's Dream

The built-in styling model, which is very similar to cascading style sheets, provides fine-grained and reusable customization of report elements with specially designed editors. With the cascading style sheet mechanism, all aspects of the report elements' style can be defined. These include fonts, borders, alignments, colors, background colors and more. Styles can then be assigned by using selectors, such as type, attribute, style name and descendent. Telerik Reporting automatically applies the assigned style to the selector according to their precedence to the targeted report elements.

For further reuse, the rules can be exported to a portable stylesheet XML file that can be shared between reports. Thus, all future reports' styling will be consistent and, in most

cases, will only need the appropriate style name to be set or a small inline style change to be made. If a change to report styling is required later, change only the portable stylesheets and all the reports will have a new style. This enables theme-like styling throughout with shared stylesheets.

In a real-world example, a report designer might add a style to the report's style sheet with a TypeSelector of TextBox. That style will be inherited and applied to all textbox report items in the report. If the report designer chooses only the textboxes in the page header to have a thicker border, they can use a Descendant selector as well. Additionally, a StyleSelector with a special background can be assigned that style to targeted textboxes. Of course, later all those selectors and styles can be reused for other reports with an external stylesheet.

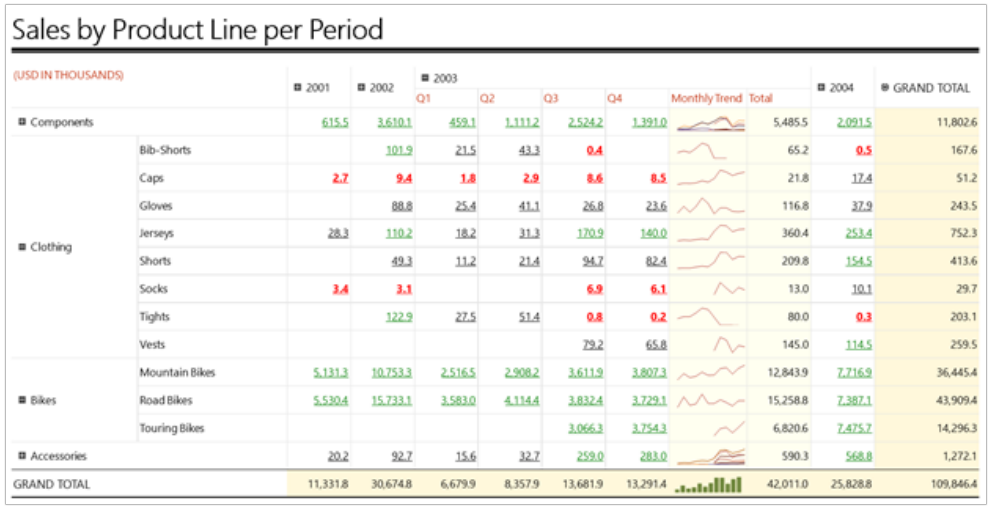


Data Driven Styling: Data and Styles in Union for Great Reports

Another must-have for styling in reporting solutions is conditional formatting. Conditional formatting dynamically styles report items based on pre-defined rules that use report data or functions. With conditional formatting in Telerik Reporting, the visual appearance of the report can change based on the conditions in the report data without any coding or events. It could be applied to any report item, including sections and the report itself.

Conditional formatting contains a collection of formatting rules that are evaluated in the order they are defined. Each rule has an associated style that changes the styling characteristics (e.g. background, colors, text style, general style, etc.) when the rule is fulfilled. To make styles conditional, a condition is defined using an expression, operator and value. The expression can be a data field from a data source or a complex expression with multiple fields and sophisticated calculations. The operator can be a simple comparison operator but can also include “like” and additional operators. The value can be a literal value or again an expression definition. When the condition is met, the rule is fulfilled and the style is applied.

The example below shows that positive numbers could be displayed in green and negative in red or the background colors could change from the report data. Conditional formatting is especially helpful when changes in styles need to be made in line with the pre-defined rules and loaded data.



Sales by Product Line per Period

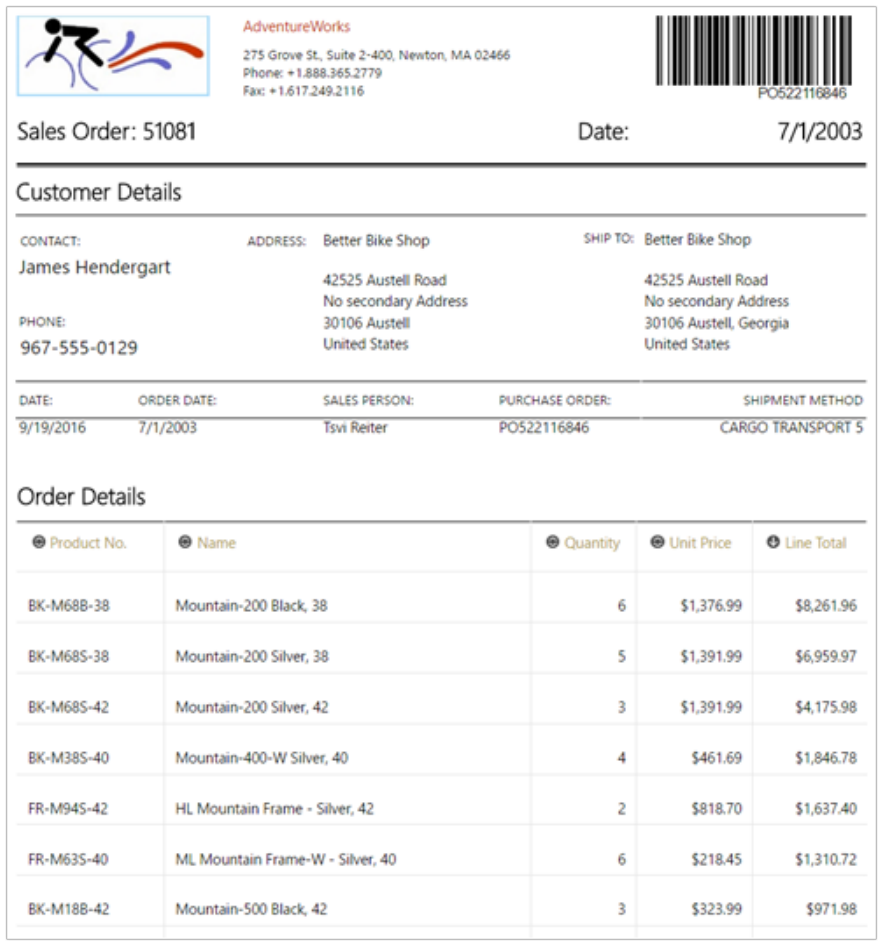
(USD IN THOUSANDS)		2001	2002	2003						2004	GRAND TOTAL
				Q1	Q2	Q3	Q4	Monthly Trend	Total		
Components		615.5	3,610.1	459.1	1,111.2	2,524.2	1,391.0		5,485.5	2,091.5	11,802.6
Clothing	Bib-Shorts		101.9	21.5	43.3	0.4			65.2	0.5	167.6
	Caps	2.7	9.4	1.8	2.9	8.6	8.5		21.8	17.4	51.2
	Gloves		88.8	25.4	41.1	26.8	23.6		116.8	37.9	243.5
	Jerseys	28.3	110.2	18.2	31.3	170.9	140.0		360.4	253.4	752.3
	Shorts		49.3	11.2	21.4	94.7	82.4		209.8	154.5	413.6
	Socks	3.4	3.1			6.9	6.1		13.0	10.1	29.7
	Tights		122.9	27.5	51.4	0.8	0.2		80.0	0.3	203.1
	Vests					79.2	65.8		145.0	114.5	259.5
Bikes	Mountain Bikes	5,131.3	10,753.3	2,516.5	2,908.2	3,611.9	3,807.3		12,843.9	7,716.9	36,445.4
	Road Bikes	5,530.4	15,733.1	3,583.0	4,114.4	3,832.4	3,729.1		15,258.8	7,387.1	43,909.4
	Touring Bikes					3,066.3	3,754.3		6,820.6	7,475.7	14,296.3
Accessories		20.2	92.7	15.6	32.7	259.0	283.0		590.3	568.8	1,272.1
GRAND TOTAL		11,331.8	30,674.8	6,679.9	8,357.9	13,681.9	13,291.4		42,011.0	25,828.8	109,846.4

Bindings: More Data-Driven Styling

A very powerful approach to styling can be accomplished with expression bindings. These are used to modify any expressible property in the report. Expressible properties are properties that integrate with the Expression editor. They are widely used when designing reports and provide great flexibility to control the content, style and report behavior.

An expression is evaluated while the report is being processed and can return a new property value from related data or items. This simple binding between the report item properties and an expression is accomplished by adding binding expressions to the binding collection editor. Bindings are priceless when the goal is to alter both the style and the report layout or modify the data during processing.

One of the most frequent use cases for expression bindings is accessing data from a parent or child element. This is possible because the entire report is declaratively defined as a tree structure. More specifically, the structure facilitates obtaining a parent- or child-element's data to style a related item. Since this happens during processing, it enables designers and developers to modify the report and/or its data without any custom event programming.



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PO522116846

Sales Order: 51081 Date: 7/1/2003

Customer Details

CONTACT:	ADDRESS:	SHIP TO:
James Hendergart	Better Bike Shop 42525 Austell Road No secondary Address 30106 Austell United States	Better Bike Shop 42525 Austell Road No secondary Address 30106 Austell, Georgia United States
PHONE: 967-555-0129		

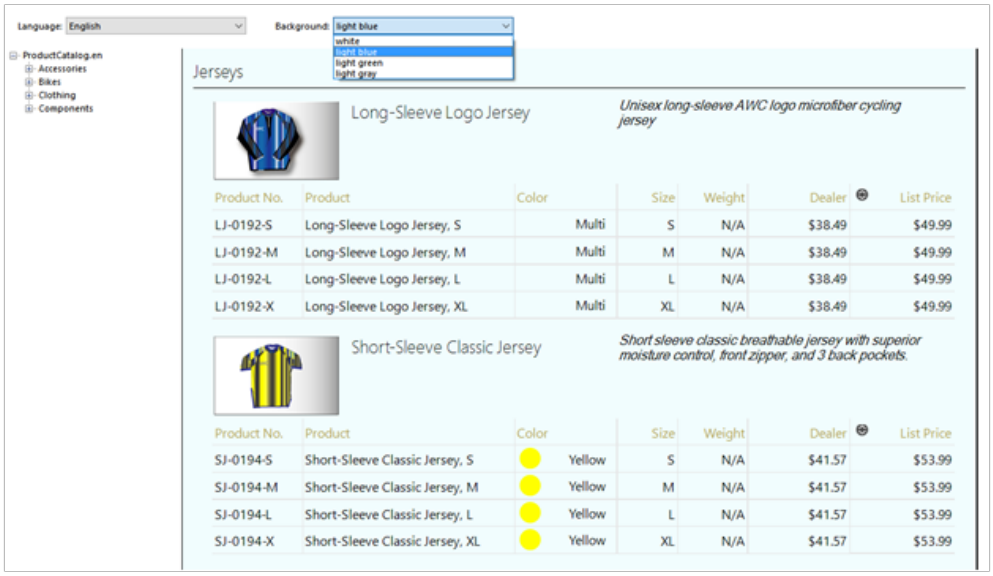
DATE:	ORDER DATE:	SALES PERSON:	PURCHASE ORDER:	SHIPMENT METHOD
9/19/2016	7/1/2003	Tsvi Reiter	PO522116846	CARGO TRANSPORT 5

Order Details

Product No.	Name	Quantity	Unit Price	Line Total
BK-M68B-38	Mountain-200 Black, 38	6	$1,376.99	$8,261.96
BK-M68S-38	Mountain-200 Silver, 38	5	$1,391.99	$6,959.97
BK-M68S-42	Mountain-200 Silver, 42	3	$1,391.99	$4,175.98
BK-M38S-40	Mountain-400-W Silver, 40	4	$461.69	$1,846.78
FR-M94S-42	HL Mountain Frame - Silver, 42	2	$818.70	$1,637.40
FR-M63S-40	ML Mountain Frame-W - Silver, 40	6	$218.45	$1,310.72
BK-M18B-42	Mountain-500 Black, 42	3	$323.99	$971.98

Full Control Over the Report Theme

What if a user requires multiple styling options for their on-demand preferences? This is possible with the help of Bindings and Report Parameters. It is as simple as predefining the Report Parameters values and binding the desired style(s).



Adding Interactivity

Interactivity is important for reporting because data can be shaped in different ways, which can then be used to answer different questions. This makes Interactivity difficult because it can be described in infinite ways. However, in the context of a reporting solution, available report actions and report organization are used to create different report styles.

Telerik Reporting includes adding interactive actions that allow users to perform specific events within a report. It also enables users to organize reports like books, also known as Report Books, or in the form of master-detail reports. Many of the actions and organizational capabilities are complementary and offer unique properties.

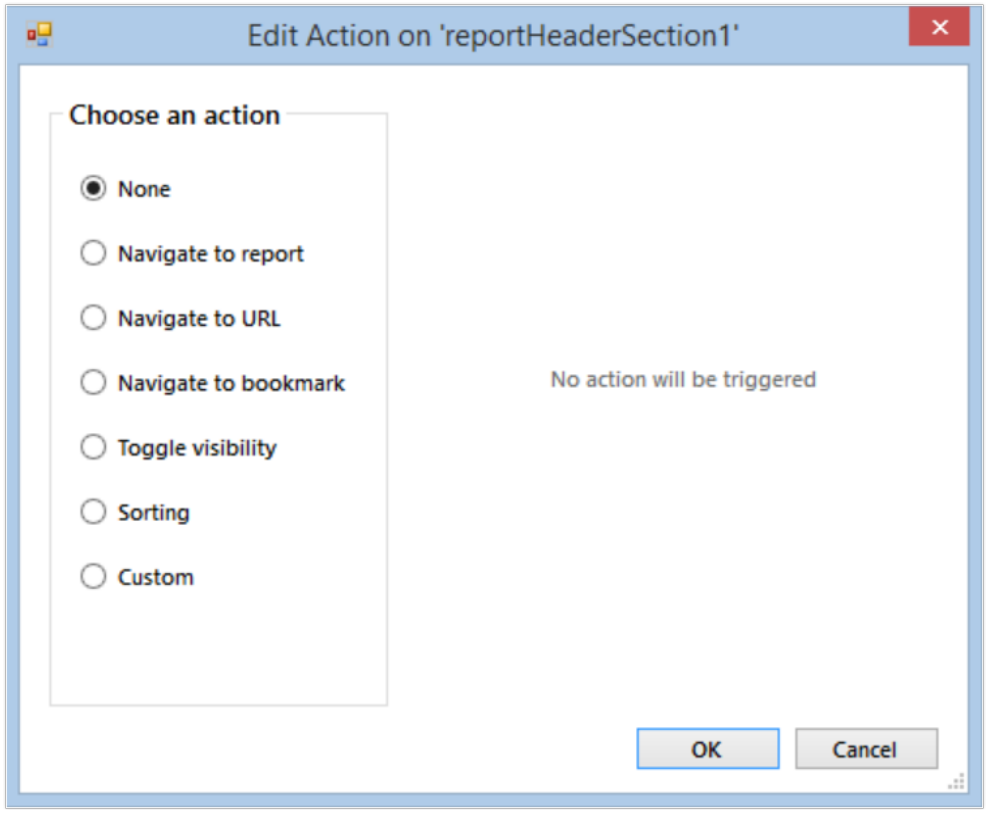
Actions in Reports

Actions could be defined in reports, allowing users to open web pages, other reports, jump to a bookmark or drill down to detailed data. Actions are meant to be a non-processing step.

The Telerik Reporting report engine supports the following action types:

- **Navigate to Report:** Drill through from one report to the other
- **Navigate to Bookmark:** Jump to areas within the same report
- **Navigate to URL:** Navigate to an external web page
- **Toggle Visibility:** Show or hide items within the same report
- **Sorting:** Sort items like the Table, Crosstab or Graph
- **Custom:** An action that contains a collection of parameters to be evaluated during report processing

The actions are defined using the Edit Action dialog. After the action on a report item is defined, a user clicks the report item and the specified action takes place. This can help shape the appearance of the report by linking multiple well-designed reports or systems together. This is especially helpful when used with the various capabilities for report organization.



Other stylistic actions are also possible in Telerik Reporting. For example, a table's header or row can be frozen to enable navigating a large data set in an interactive report. Furthermore, tooltips can provide custom descriptions for elements when a user hover over them.

Organizing Reports

Organizing reports helps create a style or format of the report. For example, when reading Shareholder Prospectus versus a 10K/Q. The style of the reports is generally different, but they are an aggregation of many elements.

Telerik Reporting supports Report Books with a Table of Contents element that allows printing or displaying many reports in a single file. There are different reasons to use a Report Book:

- Combine multiple reports into a single document for preview, print and export
- Combine multiple instances of the same report with different settings for preview, print and export
- Need each report to start on a new physical page or sheet in an Excel workbook
- Need each report to have different page settings like size and orientation

Also, using a Report Book offers a Word-like presentation of data-driven reports, which is evident with the Table of Contents (ToC). Each report can have its own ToC and the Report Book Table of Contents (TOC) provides a summary/overview of all the reports in each Report Book. The Report Book TOC gathers all the TOC entries in all the report book reports and displays them together in a single TOC, which can be positioned at the beginning or the end of the Report Book.

Report organization coupled with actions make interactivity an essential part of any reporting solution. Adding a consistent and simple styling experience makes Telerik Reporting a breeze for Report designers. Improving on the presentational aspect of Telerik Reporting is delivering powerful data behind the report anywhere.

Powerful: Full Control Over Data

The power behind any report is the data. The complete reporting tool gives developers full control over their data. It should make use of the most popular data sources like OLAP cubes, databases, Excel, XML and business objects to compile the reports they need.

The Telerik Reporting Engine can retrieve data from many different data sources with most of them requiring no programming experience. Once the data is available, features like grouping, filtering, sorting, aggregating and parameterizing help shape the data in many ways using an intuitive expression editor.

Data Sources

Telerik Reporting covers a wide array of data sources to meet different needs. The most used data source is the SQL Data Source, which covers the most popular database engines. The following is a list of available data sources:

- **SQL Data Source:** Works with Microsoft SQL Server, MySQL, Oracle, OLE DB, ODBC, Postgres, Microsoft Access or any database with an ADO.NET provider
- **CSV Data Source:** Works with a Comma-Separated Values as an embedded source or local file
- **Web Service Data Source:** Works with Web Service Data in JSON format
- **JSON Data Source:** Works with data in JSON format as an embedded source or local file
- **Object Data Source:** Works with a .NET object model in C# or VB.NET. Allows displaying data created in the middle tier
- **Entity Data Source:** Works with ADO.NET Entity Framework
- **Cube Data Source:** Works with a Microsoft SQL Server Analysis Services OLAP Cube
- **Open Client Data Source:** Works with OpenEdge AppServer ABL Procedures

In addition to the most popular database engines, Telerik Reporting ships with approximately twenty free ODBC DataDirect drivers for different databases. This makes the data source connection options endless.

In Telerik Reporting, the purpose of the data source is to specify declaratively how to retrieve the data but the source itself does not contain any data. This provides the most powerful control over the data. It is an abstraction for reading data into a report to shape the data as desired.

Data Manipulation

The need to shape data is a requirement for any report. Over the long tenure of data analysis, many ways to shape data have been discovered. These include filtering, sorting, aggregating and parameterizing. Other important abilities necessary to shape the data are expressions and calculations.

Telerik Reporting includes many of the well-known data shaping features but extends upon these with an intuitive expression editor. Additionally, the data retrieved can be altered with calculated fields, which is an enormous feature as some calculated fields can be taxing when performed on a server.

The most popular data items—the Report as a SubReport, Table/Crosstab and List—support standard data shaping functionality. Parameterization can be used in the Report, Data Source and expressions.

- The SubReport item consists of multiple horizontal sections, one for each part of the report. For example, data and text in the report header section render at the beginning of the report, data and text in the page header section render at the beginning of each page, and data and text in the page footer sections render at the end of each page. In the middle of the report are the report groups and the detail section. The report groups are always nested and display data for each value in the group, which is determined at runtime. The detail section displays at run time one row for each detail item in the report data source.

- The Table item has a fixed number of columns and displays detail or grouped data by rows. The Table expands down the page as needed. Detail data can be displayed, row by row, or grouped by creating row groups. Row groups can be nested or adjacent. Each row group displays a dynamic row down the page for each value in the group, which is determined at run time. Static rows for labels or totals can also be added.

- The Crosstab item is derived from the Table item and displays data grouped by rows and columns. A Crosstab has at least onerow group and onecolumn group. The Crosstab expands across the page for column groups and down the page for row groups. The Crosstab cells display summary and aggregate values scoped to the intersections of the row and column groups. Nested groups and adjacent groups can also be used to present complex data. The number of rows and columns in a Crosstab depends on the values for each group, determined at run time. Static rows for labels or table totals or specific group totals.

- The List item is derived from the Table item and contains one row that repeats for each value in the data source and displays data in a free-form format. An example for using a list would be to design a form or display both a table and a chart. With a List, it is possible to arrange text boxes anywhere in the list to create a layout.

- Report Parameters are used for various purposes like specifying, filtering, sorting and grouping data, connecting related reports and as an argument to a function.

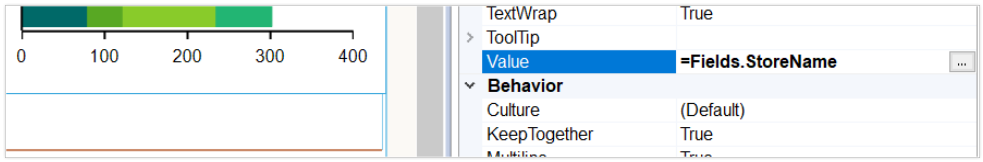
Since the above items are data items, in addition to data manipulation, they can also be used with the Expression Editor and calculated fields.

Intuitive Expression Editor

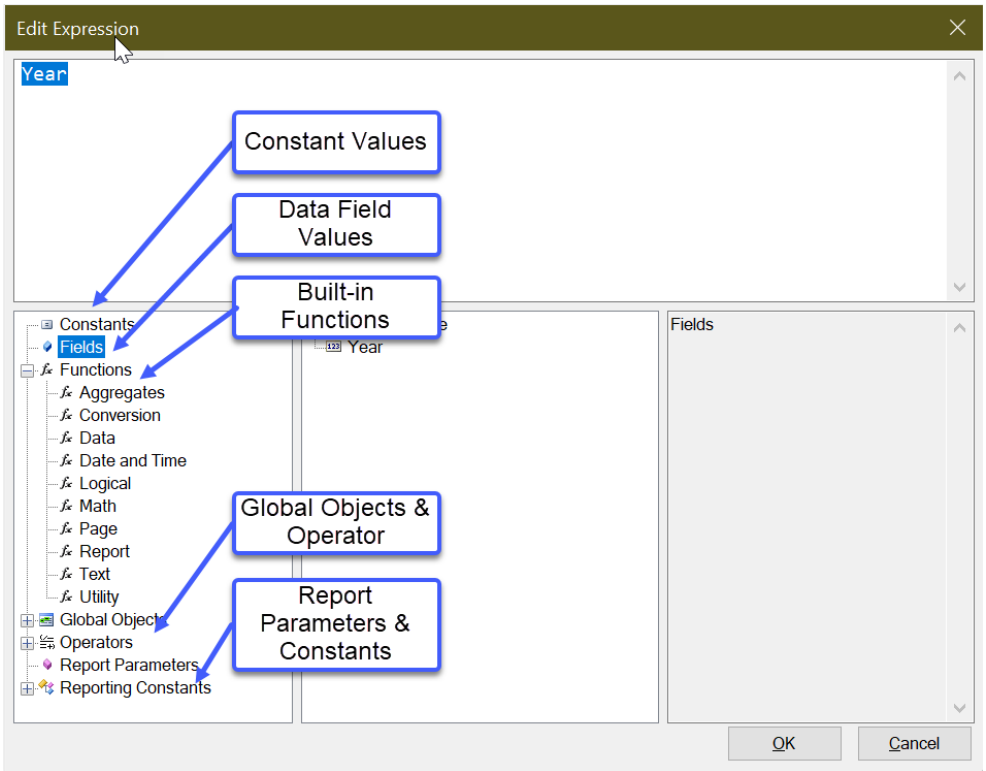
Expressions are widely used while designing reports to retrieve, calculate, display, group, sort, filter and parameterize the data in a report. One major example of an expression editor is Microsoft Excel. It demonstrates how expressions provide great flexibility to control the content, style and behavior of reports.

Expressions in Telerik Reporting use the built-in scripting language and are saved in the report definition. When the report runs, the report processor evaluates the expressions and substitutes the expression results for the property values. In Telerik Reporting, expressions can include a combination of constants, operators and references to fields from the data source, parameters from the report, built-in functions and even to external or custom code. This is all handled by the easy-to-use Expression Editor.

Any item or property in the report designer that supports an expression includes use of the editor. This presents a graphical way to create expressions. To open the Expression Editor when a property is selected, a small ellipse will appear, indicating it supports expressions.



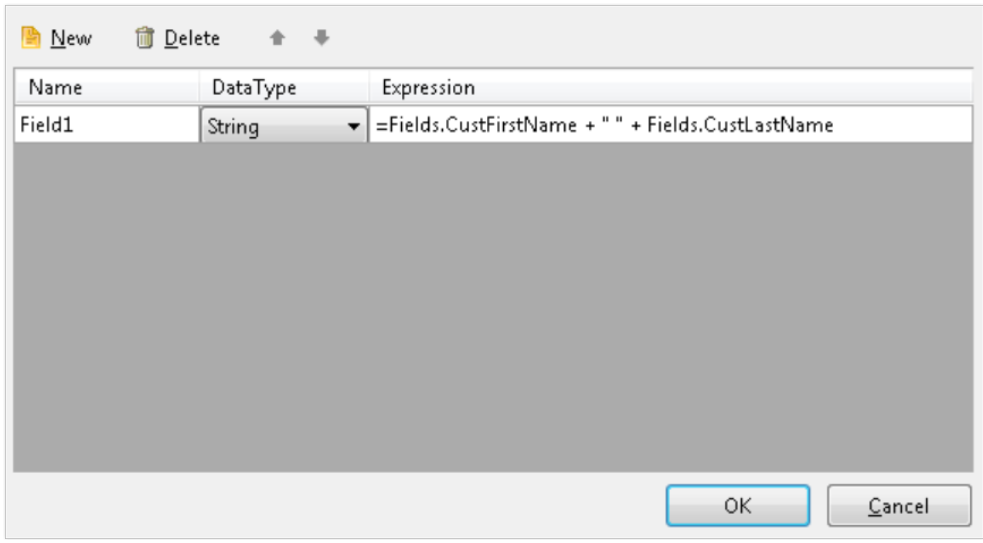
After opening the Expression Editor, a host of items become available. These include constant values, built-in functions, logical operators, report parameters and more.



A very powerful aspect of the Expression Editor is access to the data source fields. This makes calculated fields especially helpful.

Calculated Fields

Calculated fields can be used to create new values that do not exist in the data source. For example, a calculated field can represent a new value, a constant, an expression value, a user-defined function, a report parameter or an existing field that is converted to a different datatype.



The screenshot above illustrates how to create a new data field, presenting a person's full name. A calculated field pulls the information from the First Name and Last Name columns in the database and combines it. The new field values will be available in the report anywhere the full name data is needed.

The powerful Expression Editor also allows the use of report parameters in calculated fields.

Parameterization

Parameterization is a common topic among database administrators (DBA). However, to the less DBA–inclined, it might be unusual. The most common use of parameters is for filtering. The item or items that are being filtered would be distinguished by the parameter value.

Parameters may contain single or multiple values. Parameter values can be a static list of values or a dynamic list, tied to a data source. Other usage of report parameters includes filtering data retrieved from the database with expressions to directly provide a value. This can also be accomplished in a data item for filtering, sorting or grouping criteria.

To summarize the power of Telerik Reporting, leveraging functionalities like built-in function expressions, calculated fields and report parameters to shape data in many ways across the most popular data sources gives report designers and developers full control over their data.

Productive: Viewing Reports in Any Desktop or Web Application

After designing the report presentation, connecting and shaping the data, then comes the need to deliver the report to an audience. The productivity of a reporting solution lies in its ability to deliver a report anywhere—the more places a report can be delivered, the more value it provides. For example, report stakeholders may be viewing the report in a custom application or on a mobile device through a web browser.

With Telerik Reporting, a developer or report user can utilize the report engine dedicated APIs for each specific report implementation. This is considered Embedding the Reporting Engine. It may require programming the report design, processing and rendering the report. Alternatively, and for convenience, many Report Viewers are included with Telerik Reporting.

Report Viewers are UI components for displaying the report document produced by the report engine in an application. Report Viewers can support various technologies like HTML5/JS, Angular, React, Vue, Blazor, ASP.NET Core, ASP.NET MVC, ASP.NET Web Forms, WPF, WinForms and UWP. Using the report viewers, the reporting tool might be integrated (i.e. embedded) with any web and desktop application created with the supported technologies.

Embedding Reports

When embedding reports, the main purpose is to produce a report document using the report engine. This is achieved by embedding the report engine in an application or hosting the report engine remotely and exposing the APIs as a service.

Embedding the Report Engine

Desktop applications are commonly referred to as monolithic applications. They are essentially self-contained and may connect to the Internet or not. Everything that the end user needs is delivered with the desktop application. This is the most beneficial scenario to embed the report ending.

In Telerik Reporting, .NET desktop applications like WPF and WinForms are most known for embedding the Report Engine. These types of applications also support hosting the report engine remotely. The idea is to build and deploy a self-contained application that can deliver reports. These reports could be designed in any of the designers or defined programmatically at runtime. Additionally, the monolithic application could connect to the Report Engine remotely as well.

Hosting the Report Engine Remotely

Many of today's applications use multiple systems that are connected via the Internet. In general, the client or frontend is the user-facing application, the middle tier is the business or service layer and the backend system is the database layer. This describes a simple Service Oriented Architecture, or SOA for short. It can be thought of as a tiered application and is most common among line-of-business applications. Today's modern applications use a Representational State Transfer (REST) API to communicate with client-heavy applications that achieve the same architecture, just with different technology.

Telerik Reporting fits nicely into many different types of applications. For example, the Reporting Engine can be embedded in a monolithic applicationor delivered as a service through a SOA or a REST API. Telerik Reporting Services has two implementations: The REST Service and the Windows Communication Foundation (WCF). Presently, the most widely used service is the Telerik Reporting REST Service. It uses the power of ASP.NET's Web API and delivers reports over the internet to any client application.

Limitless Report Viewers

To deliver everywhere means that reports can be viewed as they were designed with pixel-perfect rendering on any device. To this end, it is important to have many customization options and intuitive report viewing, exporting and readers. Nearly every device has a web browser that will work with an HTML5-based Report Viewer.

Telerik Reporting includes a variety of report viewers and each contains the same capabilities. The list of report viewers includes Plain HTML5/JavaScript, Angular, React, Vue, Blazor, ASP.NET MVC, ASP.NET Core, ASP.NET Web Forms, WPF, WinForms,

Silverlight and UWP. Because the Report Viewer is based on HTML5 and JavaScript, a successful experiment allowed building it into a Xamarin application. It works like a native application in iOS and Android. This is what it means to be limitless.

Customizable Report Viewers

Out of the box, Telerik Reporting supports theming in WPF and our web-based viewers. This is because the WPF Report Viewer uses the UI for WPF framework and the HTML5 Report Viewer uses the Progress® Kendo UI® framework.

Intuitive Report Viewers

Report viewers in Telerik Reporting can quickly change the view to print layout and back with the click of a button. This allows seeing what the report would look like if printed. Also, Continuous Scroll is the default experience in our report viewers that enables scrolling through pages. This proves to be a better experience than using a combination of scroll and button clicks. Furthermore, each of our report viewers comes with a Search in Reports Dialog that includes expected features like match case and exact match.

Support for Accessibility

Progress® Telerik® has implemented all well-known standards for accessibility in its desktop and web-based viewers. This enables report designers to build accessibility-compliant Reports without hassle. Accessible interfaces include keyboard support and dynamically generated descriptions that can be read by a screen reader, plus localization for international support.

Succinctly, Telerik Reporting can deliver reports across all platforms. The report can be embedded in a desktop application or delivered over the internet through a web browser backed by a REST or WCF application. The report recipient will also enjoy the added flexibility when using the included Report Viewers, which will expand on the delivery of a report with more capabilities.

Pliable: Unlimited Delivery Capabilities

Expert reporting solutions should not only deliver reports anywhere, but also in different formats. This is known as rendering the report. Rendering helps flexibly meet the requirements of the report stakeholder. A suitable example would be an accounting department that uses a custom-built application to process their financial reports and export them to PDF files in a shared drive.

In Telerik Reporting, it is possible to export reports in more than 15 formats - Microsoft Excel or CSV to further manipulate the report data, archive it in PDF format or forward it via email. It also supports exporting to RTF, MHTML and images, plus printing as handouts and paper archives.

Rendering

As popularity about a report grows, it comes as no surprise that it will also need to be viewed in different ways. Particularly, many stakeholders choose to view a report in PDF or Word formats. Others may want it as an image to be displayed on a large screen around the office. Additionally, accessibility is important for inclusion as technology has evolved to enhance everyone's life. This prompts the need for many rendering options with support for accessibility as well.

With Telerik Reporting, each of the export options falls under three types of renderers: data, logical page and physical page renderers. The data renderer is the CSV format and can be used as a data source for other reports. The logical page renderer is for free-flowing pages so the page can adapt to the size of the screen. The physical page renderer is for printed media when the page is more restricted.

Export Options

A successfully designed report is optimized for the chosen renderer(s). There are 15+ export options in Telerik Reporting, including RTF, image, DOCX, both XLS and XLSX, and PDF. These are enabled by default and, interestingly, a common question is how to limit the number of export options. Depending on the renderer selected, certain rules apply when rendering the report. This informs how items fit together on a page and is determined by a combination of the following factors:

- Rendering rules
- The width and height of the report items
- The size of the report
- The width and height of the page
- Pagination rules for the renderer

Accessibility

Telerik Reporting includes additional features for the PDF/UA export that will produce a PDF document with additional metadata and structural elements that meet ISO 14289-1 standards. Elements include tagged contents, description for media items, annotations, and the document title and natural language.

In reviewing pliability, deliver everywhere also means to deliver in many different formats at the request of the report stakeholders. The available renderers and export format in Telerik Reporting make it the most pliable reporting solution. It means a report is only bound by the technological limitations of the chosen export format. Understandably, to support presenting powerful data, flexibility and productivity, a reporting solution needs to also be performant.

Performant: Modernization and Line-of-Business Solutions

Generating large and complex reports that contain rich graphics can be resource-intensive and difficult to manage. It is crucial to have a performant and modernized report engine that can build the report with minimal memory and processor usage. The report engine in a complete reporting tool is powerful enough to be easily configured and flexible enough to meet different business requirements.

Business requirements can include features like publishing, exporting, collaborating and sharing the reports. Design decisions that promote future proofing and modernization are paramount for meeting these specific requirements. Ultimately, when considering a reporting solution or any software solution, the technology must work and, most importantly, people must enjoy using it.

Telerik Reporting has been designed with modernization and line-of-business applications at its core. In its 15+ years of existence, new features are continuously added to adapt to

modern requirements. These additions to support newer technologies are also evident in a Progress® Telerik® Report Server deployment.

Futureproofing

As technology improves, performance expectations grow higher. To keep up with the pace of change, using the latest technology is essential. This is known as futureproofing, or simply ensuring that the technology will be viable in the future. Futureproofing includes upgrades, modern features and technical support.

.NET Core is the next iteration of the .NET Framework and will replace it altogether. This means that the existing full framework will transition to maintenance status with version 4.8 and will only receive security updates.

Telerik Reporting is built on the .NET Framework, however, currently offers .NET Core Support. Significant and careful design decisions have been made to support the concept of futureproofing. With Telerik Reporting, a reporting team can enjoy the benefit of always staying technically relevant and modern.

Modern

No software should be restricted to a single platform. Recently, video game developers have been adding the ability to save game state across platform. Reporting developers, stakeholders and designers should enjoy this benefit as well. There should be no limit to how to view and build their reports.

To fully support multi-platform, with the use of .NET Core, Telerik Reporting can be used in Linux, macOS, and Docker Containers out of the box. This means any cloud provider that supports these platforms (e.g. Microsoft Azure) also works with Report Server. Furthermore, with the use of the HTML5 Report Viewer, the Reporting REST Service and the Web-based Designer, reports can be designed and delivered anywhere. Today, many of these technologies are the standard across modern development teams.

Line of Business Solutions

For LoB or enterprise reporting, turn-key solutions are great as they can support larger teams that might have limited headcount to build out a custom solution. The idea is to purchase a pre-built and packaged solution, deploy it and customize it as needed. This approach is safer and more predictable than building a custom solution since marketed solutions are already tested and likely support a wider set of functionalities to scale the project.

Telerik Report Server is delivered with similar expectations. Report Server adds value to Reporting and it is a server-based reporting platform that provides comprehensive report management functionalities. It provides centralized storage for the reports and various ways to organize and preview them. It is flexible, customizable and scalable.

Flexible

Generally, the most bothersome characteristic of turn-key solutions is the lack of flexibility. Problematic items usually include installation requirements and licensing. The issue with installation is that it should not require a beast of a server to run. Furthermore, there should not be hidden licensing fees for extra services or unorthodox support practices buried in the license.

Installation

Installation with Telerik Report Server is through a Windows installer that automatically creates a separate website with its own application pool in Internet Information Services (IIS), which is Windows Server Web Server.

Telerik Report Server works with 32-bit or 64-bit servers and the only processing limitation is the amount of RAM installed on the machine. Report Server can also be used with any browser that is HTML5 compliant, which includes popular browsers like Chrome, Edge, Opera, Safari and Firefox.

Support

Telerik's Support policy is designed to provide the highest quality technical support experience. This applies to all products. As an example, many of the issues related to using Report Server are environmental. In such circumstance, an engineer can aide the server administrators by using remote web assistance. Additionally, all support plans include a 24-hour response time with thorough documentation available on the web. This is just one of the many features available for Telerik Support plans.

Collaboration

Collaboration can be difficult to manage across large teams. Nowadays, everyone has a cloud drive to shares files with other users, which is why a reporting tool is also expected to foster collaboration. Additionally, users may fear their work will be overwritten or lost.

Every Telerik Report Server installation includes the Standalone Report Designer. It can be launched directly from the server to begin editing reports. The tool offers full integration with the server-specific operations like Lock, Save and Publish, which enable the multi-user collaboration without collisions on a single Report Server instance.

To enable report design collaboration, the report designer gets accessed from end users by downloading the executable from the Report Server web manager application. If the client browser supports the ClickOnce deployment technology, the designer gets installed on the client machine, adding better OS integration.

At the time of writing, the Web Report Designer is also included with Report Server further to expand its collaborative capabilities. It is enabled experimentally but will soon become the primary report designer. This means report designers will be able to edit reports anywhere, using any modern browser.

Customizable

Customizing packaged software is proverbially difficult to do. There are many ways customization could be implemented in a turn-key solution. One common practice is using white labeling to add specific branding. This is typically found in packaged software that is resold or reused. Another common feature for customizing packaged software is providing a RESTful API. This is used in a client-server scenario and allows client applications to perform the same functions as the packaged software.

Telerik Report Server includes many customization options like branding, report delivery, custom authentication and a REST API for use with custom client applications. With these customization options, Report Server could look and feel as if the hosting company built it.

Branding

Companies heavily invest in branding and naturally aim to extend their brand to as many places as possible, including any technology, tool and third-party software they use. A common request of teams using a turn-key solution is the ability to change the branding of the deliverable.

Telerik Report Server supports White-labeling. This includes changing the logo, favicon, link color, accent color and selected color. Even when launching the Standalone Report Designer from the server, custom branding is honored with the selected color and accent colors.

Report Delivery

It goes without saying that the purpose of a report is to deliver it. In Report Server, this is accomplished using scheduled tasks. A task ca be scheduled to deliver a report in any of the 15+ export formats with parameterization. The task manager includes custom email templates for internal and external users.

REST API

All the actions available in Report Server are also exposed to a RESTful API. This enables developers to use the functionality inside their own applications. The API includes Create, Read, Update and Delete (CRUD) operations for Report Server resources, such as users, reports, categories and data connections.

Scalable

As application use grows, so does the deployment of the software—this is just the natural progression of software. Teams get trained and eventually skilled in using applications, which makes scalability a prerequisite for successful enterprise solutions.

Backup, Restore and Web-Farm Support

In addition to system requirements, IT departments want easy backup and restore processes along with web-farm support. The issue occurs when different versions are in use across different teams, which is never a welcomed scenario. Backing up and restoring each team becomes a literal nightmare.

For Report Server, there are two different storage models. The first and most basic is file storage and it could target a shared network drive, a folder in the Report Server application, or another folder on a different drive. The second is using an external source like MSSQL Server or Redis. A web-farm environment would use the latter but all support Storage Backup.

Shared Data Sources

Scalability is also closely related to usability. A good example of usability is reports that embed the connection string, unifying the access to the same connection string across

all reports. A poor example of usability is a reporting team that has over 400 reports on a single server deployment.

Report Server uses Shared Data Sources. This means that the connections are shared among the reports hosted by the server instance. For example, an accounting department could have one primary connection string to the CRM records and several ancillary connections to different accounting information systems they work with. The key point is each report on the Server could have access to the connections.

Concluding performance, Telerik Reporting supports the modern technologies which provides additional multi-platform benefits. The decisions to support modern technologies ensure future-proof software. This is illustrated in Report Server which is a flexible, customizable, and scalable Line-of-Business application.

Price: Reporting Solution Value

The value of a complete reporting solution requires a logical assessment of how the solution meets organizational requirements and understanding whether the solution will work when building or buying.

Building vs. Buying

Choosing an expert reporting solution requires evaluating whether to build or buy. Build of buy is essentially a comparison of what type of solution is most effective: turn-key solutions that are readily available on the market, custom solutions developed in house or cloud-deployed solutions. When it comes to turn-key solutions, it is critical to assess whether each one meets the needs of the business organization. Telerik Reporting is flexible and extensible enough to deliver pixel-perfect reports in each deployment method. Below is a comparison of each method's advantages and disadvantages.

Turn-Key Solutions

Turn-key solutions are packaged software that is hosted on either a virtual or bare-metal server. The cost is usually the price for the license and, if using a hosting provider, the price for hosting. Report Server is the turn-key option for Telerik Reporting.

Report Server works exceptionally well with this scenario because it delivers everything that is needed within the application. In a turn-key scenario, a solution that has low resource requirements and is easy to update is a common goal. Choosing Report Server alleviates the high resource requirement and complex management tasks.

Report Server adds significant value to reporting teams that require a collaborative environment. Reports can be designed locally in the Standalone Report Designer, published to the server and shared across teams. In this method, each report designer grabs the latest version, updates the report and publishes the changes. This is usually a desirable process in large enterprises without a dedicated development team.

Custom-Developed Solutions

Custom-developed solutions give developers full freedom to create exactly what is needed. Custom solutions start with a blank slate and can be added to an existing application. The cost usually entails the hourly rate of the developers, working on the project during and after release, the license and any hosting, if using a hosting provider. Alternatively, the cost to develop before the release can also be invested and used as a revenue generator later.

Telerik Reporting Engine can be embedded into any .NET application. An additional benefit here is the many Report Viewers that deliver reports to any form-factor. This adheres to the Edit Anywhere and Deliver Everywhere capability.

It also offers the flexibility to implement the desired features without waiting for another company to decide if the feature is a priority which is the case in some turn-key solutions. This option provides the most rewards for a reporting solution to meet almost every end user requirement.

Cloud Solutions

Cloud solutions have become quite popular recently and for a good reason. They bid an alternative to expensive and complex server hosting and infrastructure. There are three patterns for cloud-deployed solutions: Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS). Reviewing the three cloud patterns—SaaS, PaaS, and IaaS—will help inform a better decision whether to build or buy a reporting solution.

Software as a Service

SaaS is a fully hosted and managed service delivered via web and/or mobile applications. A company using SaaS generally would not be responsible for hosting and maintaining the infrastructure or the software. The licensing model is usually Pay-per-User (PPU) on monthly or yearly intervals and the application is already deployed. Since everything is managed by the service provider, the end users can reap all the benefits of the latest and greatest features and do not have to hire a team to manage it.

The Telerik Reporting and Telerik Report Server Licensing Model allows it to be included or integrated with a SaaS solution. Digital agencies trust Telerik Reporting because it can be packaged with their software and will not cost per user or even by report run. The exception to report processing costs is if Telerik Reporting is deployed using the PaaS or IaaS cloud deployment, models which include some processing charges.

A notable disadvantage of using a SaaS solution for a reporting solution is that rollout and adoption can be painstaking. Each SaaS solution is developed by a team of individuals with different UX and development philosophies. This means that not every SaaS solution will work with every other software. A way around this is to hook into the API, if one is provided, and integrate the systems.

Platform as a Service

Platform as a Service is a fully hosted and managed platform delivered via a platform provider. A PaaS exposes nearly everything needed at the software level to deliver a custom-developed solution. The licensing model is usually Pay-as-you-Go (PAYG) and includes data-in, storage and virtual core usage. New services are delivered at astounding rates because the platform providers manage the infrastructure and can deliver these services through custom development. To lower up-front costs, projects can be developed locally, which does not require the use of the platform until later in the release cycle. Still, this requires no hosting or management costs other than the team developing and deploying the software.

Telerik Reporting's Report Processing Engine can be hosted remotely to allow some infrastructure to be located off platform, which can circumvent potentially high processing costs. This is a true pleasure in a PaaS application as it can be integrated into an on-premises, SaaS or IaaS application simultaneously.

Many choose to deliver a PaaS solution because of their strong development team and the added benefits of custom-developed solutions. One concern that surfaces in a PAYG scenario is that costs can be less manageable due to spikes in processing. Period that typically entail higher usage can drive higher costs. A specific example would be during an operational event like quarterly or year-end reporting.

Infrastructure as a Service

Infrastructure as a Service is essentially a virtual machine managed by a company and hosted by a platform provider. This scenario offers full control over the virtual server. Frankly, it is a server rental. A company is responsible for keeping the server up to date but does not have to host the machine, which can save on storage space. If the server is going to run at 100% uptime, then the cost can be predictable and simpler with a packaged solution. Simply put, there is little abstracted away from the teams performing the deployment. In addition, failover is managed by the IaaS provider to ensure their uptime service level agreement (SLA).

Telerik Report Server includes a REST API that can be integrated with PaaS or SaaS applications. In addition, this also enhances the benefit of hosting on premises or in an IaaS environment. It provides the most cost-effective and flexible approach for delivering reports in a turn-key solution.

A disadvantage occurs when integrating a packaged reporting solution. It can feel locked into features that were chosen by the software vendor. Additionally, there is a need to lower the resource requirements for hosting the application.

Each organization has different business requirements. Telerik Reporting and Report Server are flexible enough to empower a reporting team to edit reports anywhere and deliver everywhere. This flexibility is also extending in a turn-key, custom-developed or cloud solution.

Conclusion

One final consideration that does not fit in any of the 6Ps is understanding the difference between reporting solutions and business intelligence (BI). Most notably, BI is not a reporting solution. These are different things that serve different purposes. To elaborate, reporting communicates what HAS happened and BI tries to build on that by adding what CAN happen. Alas, not everything that can happen will happen. That is not to discredit BI, it is useful, but these tools are useful for different purposes.

In conclusion, this document presented a six-step framework to aid the analysis of whether a solution will meet the expert needs of an organization. Telerik Reporting is a natural fit for today's business demands with its report designers that are consistent and easy to use on any platform. The number of data sources and data manipulation options empower designers and developers to create beautiful and interactive visualizations while effortlessly supports their work process. Developers, designers and stakeholders alike can achieve greater productivity and flexibility when delivering reports anywhere using the Report Viewers or any export format. This is all backed by the modern and future-proof Reporting Engine. The engine also drives Telerik Report Server, which can be used in any large enterprise scenario or as a custom developed solution or integrated with a cloud solution.

Get Started Today

Take our reporting tools for a spin—try out the latest versions today with a FREE trial.

Try Telerik Reporting

Telerik Reporting is a complete, lightweight, easy-to-use and powerful .NET reporting tool for web and desktop applications that supports: ASP.NET Core, Blazor, ASP.NET MVC, ASP.NET Web Forms, HTML5, Angular, React, Vue, WPF, WinForms. With Reporting tool any developer or reporting user will be able to create, style, view and export rich, interactive and reusable reports to attractively and beautifully present any analytical and business data. The reports can be added to any web and desktop business application through report viewer controls. The ready reports can be exported to more than 15 formats.

Try Telerik Report Server

Telerik Report Server is an end-to-end report management solution which helps transform raw data into actionable business insights and then stores and distributes these insights within the business. Report Server comes bundled as a lightweight web application that can be downloaded and run on user local web server. Once its installed, it enables the company to store all reports in a single server-side repository. It comes packed with a variety of line-of-business features like report scheduling, data alerts and e-mail notifications, user management, authentication and authorization and rebranding functionality.

Tried Telerik DevCraft?

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