

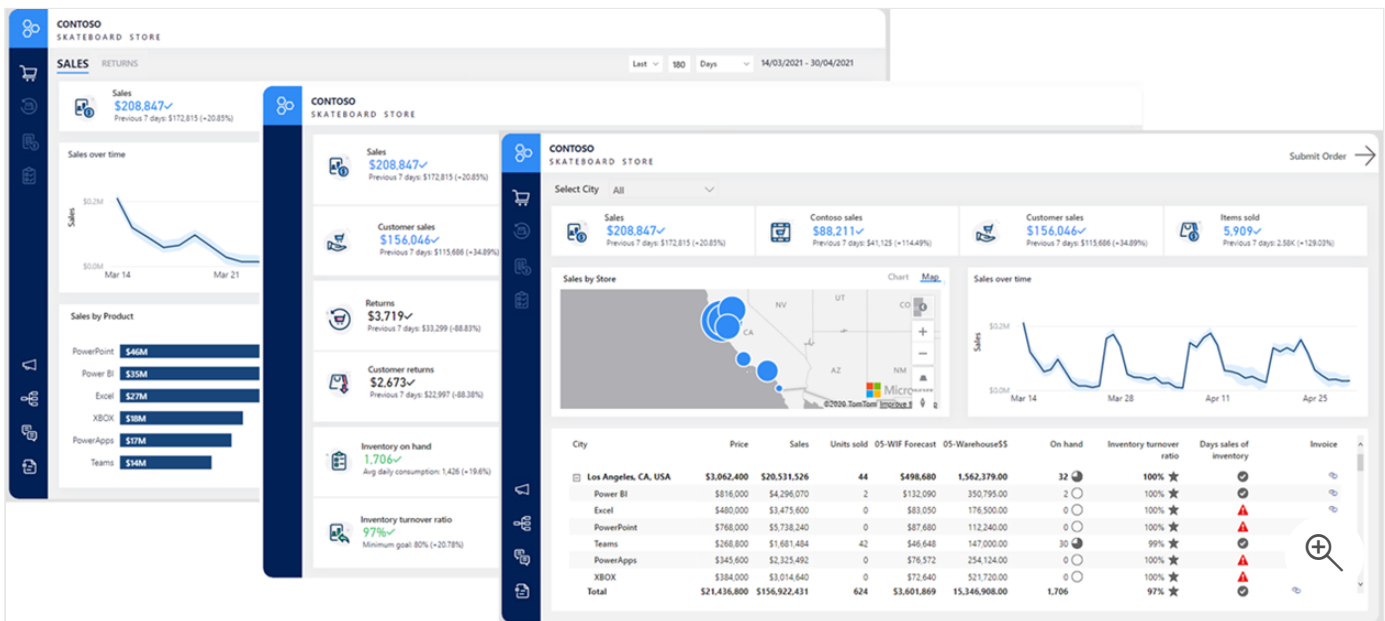
Introduction

3 minutes

As with any project, a good starting point when designing reports is to define clear goals. In your reporting project, those goals should strive to help you determine your reporting requirements for:

- Audiences
- Report type
- User interface requirements
- User experience requirements

This module uses a scenario concerning the Contoso Skateboard Store company, which specializes in direct-to-consumer skateboard sales. To modernize their workflow and gain a deeper understanding of their product sales and inventory management, the company needs to create a set of reports to deliver data to their employees.



Currently, the finance and supply chain divisions operate in vertical silos. These divisions use data differently, which has resulted in many inconsistencies in how they interpret the data when making decisions. These inconsistencies have often led to disagreements and misalignment at the executive level because the numbers don't match.

Also, the company currently consumes this information by using formats that aren't optimized for a modern workforce. Also, employees commonly spend many hours creating improvised reports by using disparate data sources. These reports answer simple questions like "What were our sales in the Los Angeles area last month?" These improvised reports have contributed to a duplication of effort, resulting in an overlapping of reports that might occasionally use different calculation logic over the same data.

The company has committed to developing a new suite of reports to meet the following business requirements:

- Promote a standard view of their data and business logic that is a *single source of truth* across all divisions.
- Ensure reports deliver up-to-date data that is no older than 24 hours for sales and one hour for inventory.
- Create modern sales and inventory reports that can be accessed at any time by their employees, whether they are in the office, working from home, or on the road. Reports are intended for use by finance managers, supply chain managers, and data analysts.
- Design reports that feel natural and are user-friendly.
- Publish reports that have sufficient depth of detail and allow report consumers to discover new insights.
- Apply consistent corporate brand standards.

Next unit: Identify the audience

[Continue >](#)

Identify the audience

2 minutes

Identifying the audience is one of the most important steps in the report design process. It enables the report author to create a final result that can be efficiently used and will meet the needs of the report consumer.

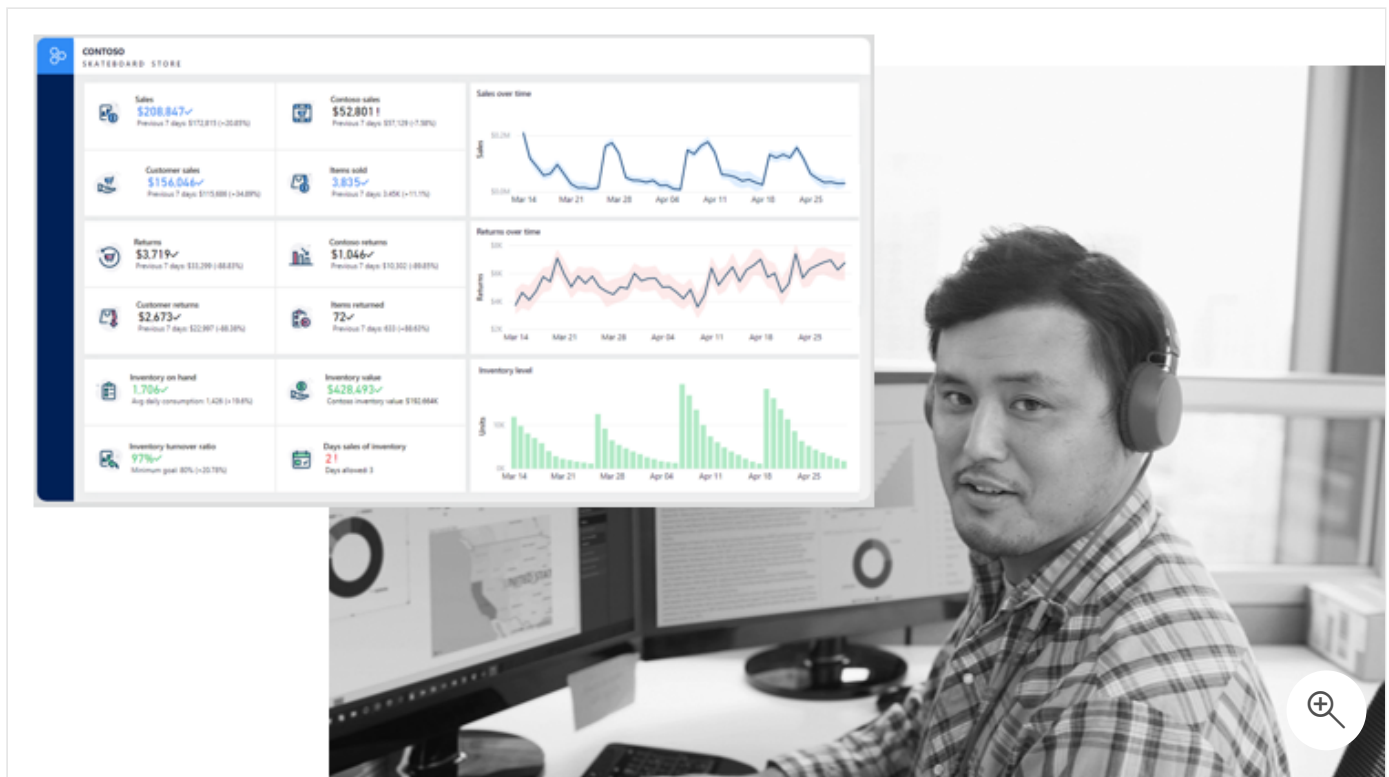
The three broad report consumer audiences are:

- Executive
- Analyst
- Information worker

An **executive** is a person who is charged with making plans and decisions that often involve a medium or long-term focus. Executives are responsible for making the business run smoothly. For example, the C-level executives at the Contoso Skateboard Store would be an executive audience.



An **analyst** is a person who provides guidance to the organization. Analysts can be responsible for a range of tasks, often with goals of determining the effectiveness of business strategies, developing or improving processes, or implementing change. A business analyst (or data analyst) in the sales division of the Contoso Skateboard Store is an example of an analyst audience.



An **information worker** is someone who uses data to help make decisions or take actions. Often, these decisions and actions are operational in that they are done on a daily basis. The inventory manager at the Contoso Skateboard Store, who needs up-to-date information about stock levels, is an example of an information worker audience.

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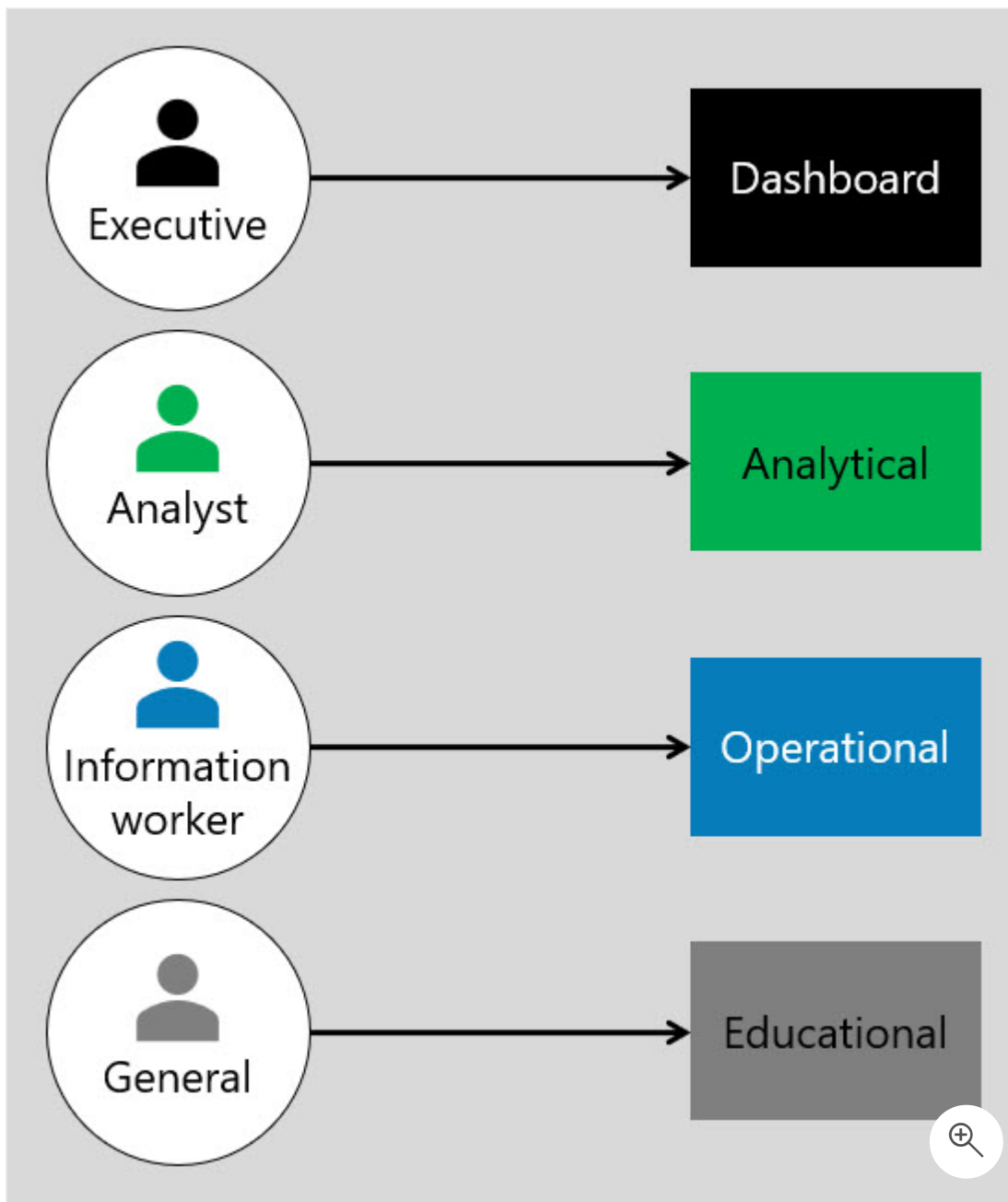
Determine report types

6 minutes

Generally, report design can be classified by report type. Often, a direct mapping between the report audience and the report type occurs. Audience needs can be met by one, or possibly a combination, of four report types:

- Dashboard
- Analytical
- Operational
- Educational

Commonly, executives work with dashboards, analysts work with analytical reports, and information workers work with operational reports.



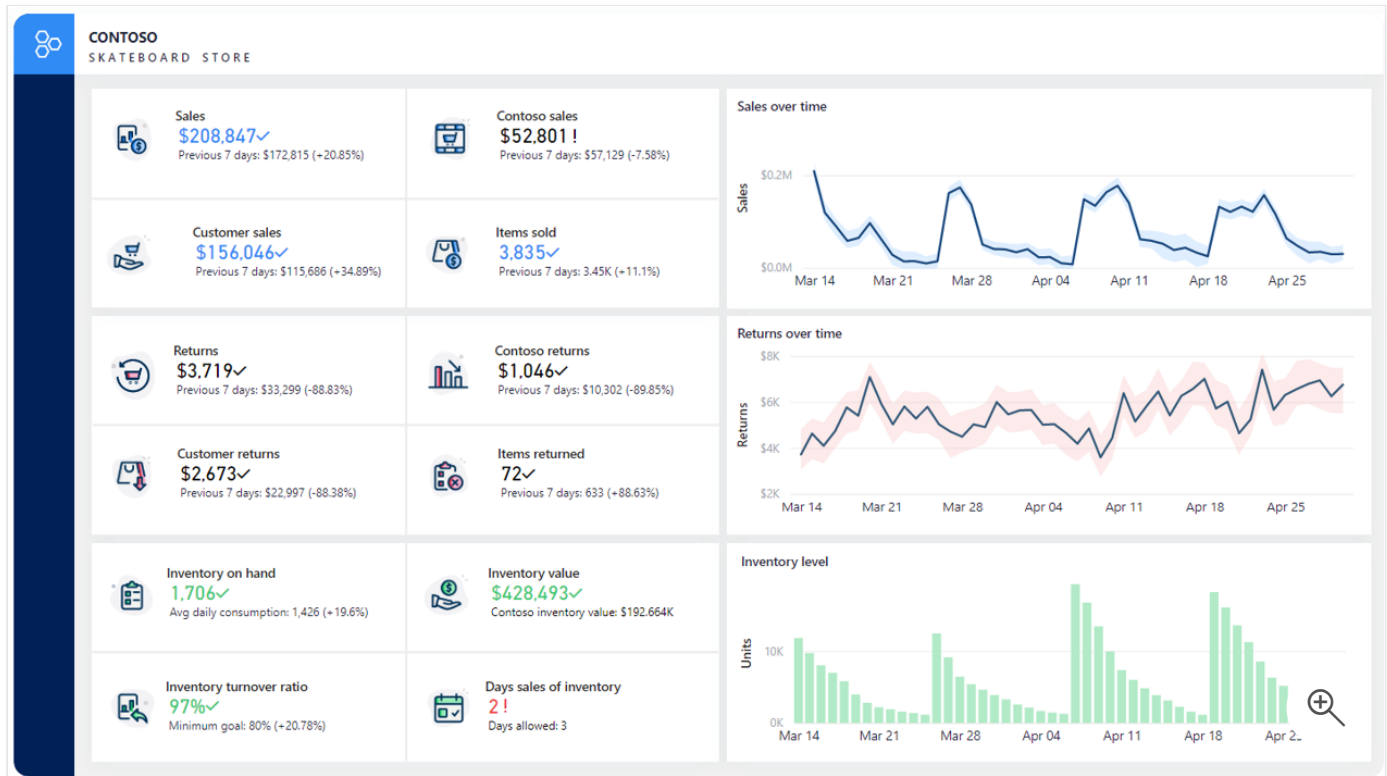
Each report type has a different approach to the user interface (UI) and user experience (UX) requirements. These requirements are described in more detail later in this module.

Dashboard

The primary goal of a dashboard is to interpret the story as quickly as possible. User interactions are limited by insights that are highly curated toward the audience. Report visuals are focused, self-explanatory, and clearly labeled. A dashboard directly communicates the meaning behind the data to minimize misinterpretation or confusion.

A good example of a dashboard is an *executive dashboard*, which often presents high-level metrics that are displayed on a single page. Dashboards help answer questions such as "How are we doing?" or "Are we there yet?"

At the Contoso Skateboard Store, a dashboard is a report that allows users to view several analytics values, targets, statuses, and trends.



Analytical reports

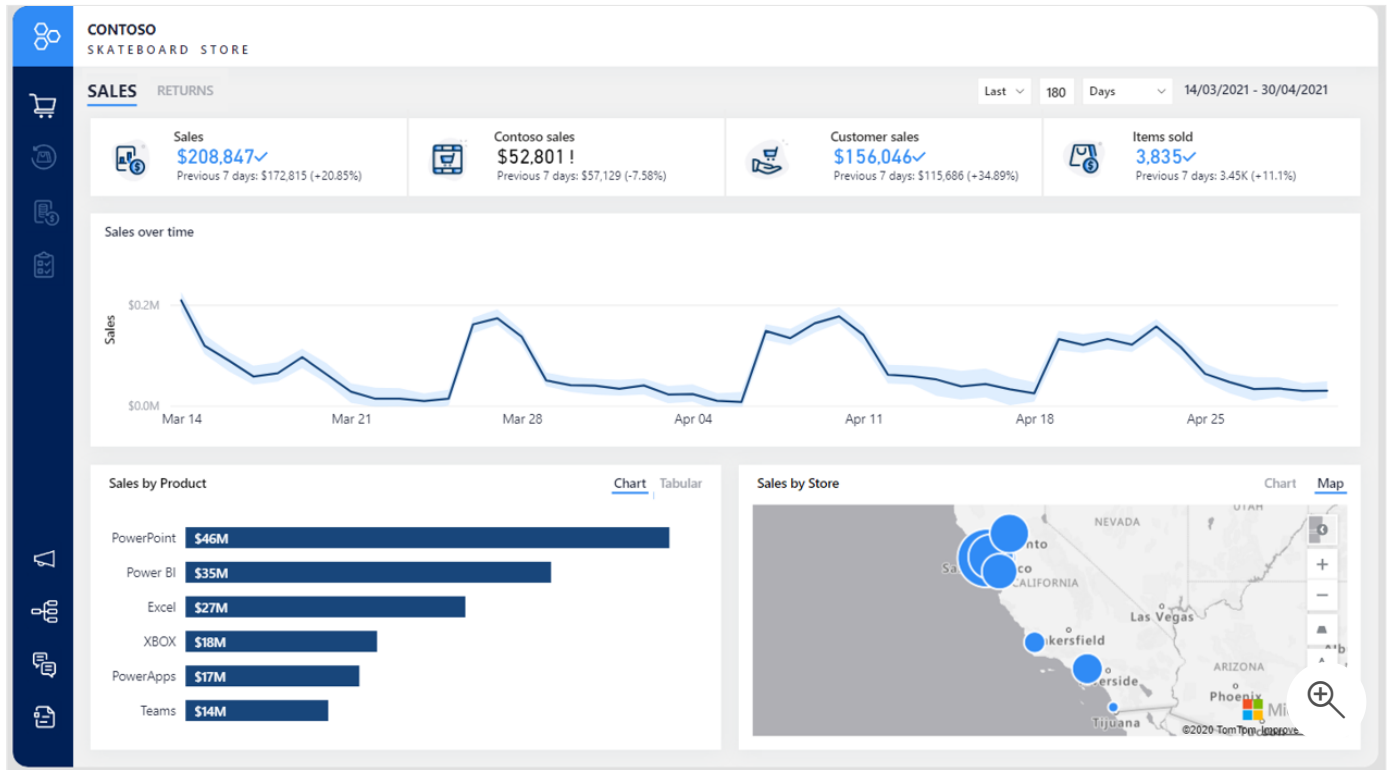
An analytical report is the most common type of report that can serve various report consumer use cases while providing a structured space for analysis.

The primary goal of an analytical report is to help report consumers discover answers to a broad array of questions by interacting with the report and its visuals. Analytical reports often have many slicers to filter report data, and they often contain complex visuals that expose in-depth detail of the data.

Report pages are often expressly designed for interactivity with a focus on UX features. Multiple pathways are often provided for the report consumer to follow, which allows them to explore a topic of interest, share their findings, or return to where they started. Report consumers can remove layers and add context and detail by incorporating interactive features. Common interactive features include drill down, drill through, and tooltips.

A good example of an analytical report is one that extends beyond the "How are we doing?" type of question to answer the "Why did that happen?" or "What might happen next?" type of questions.

An example of an analytical report at the Contoso Skateboard Store would be a sales analysis report that allows drilling into sales revenue from year, down to quarter, month, and day.



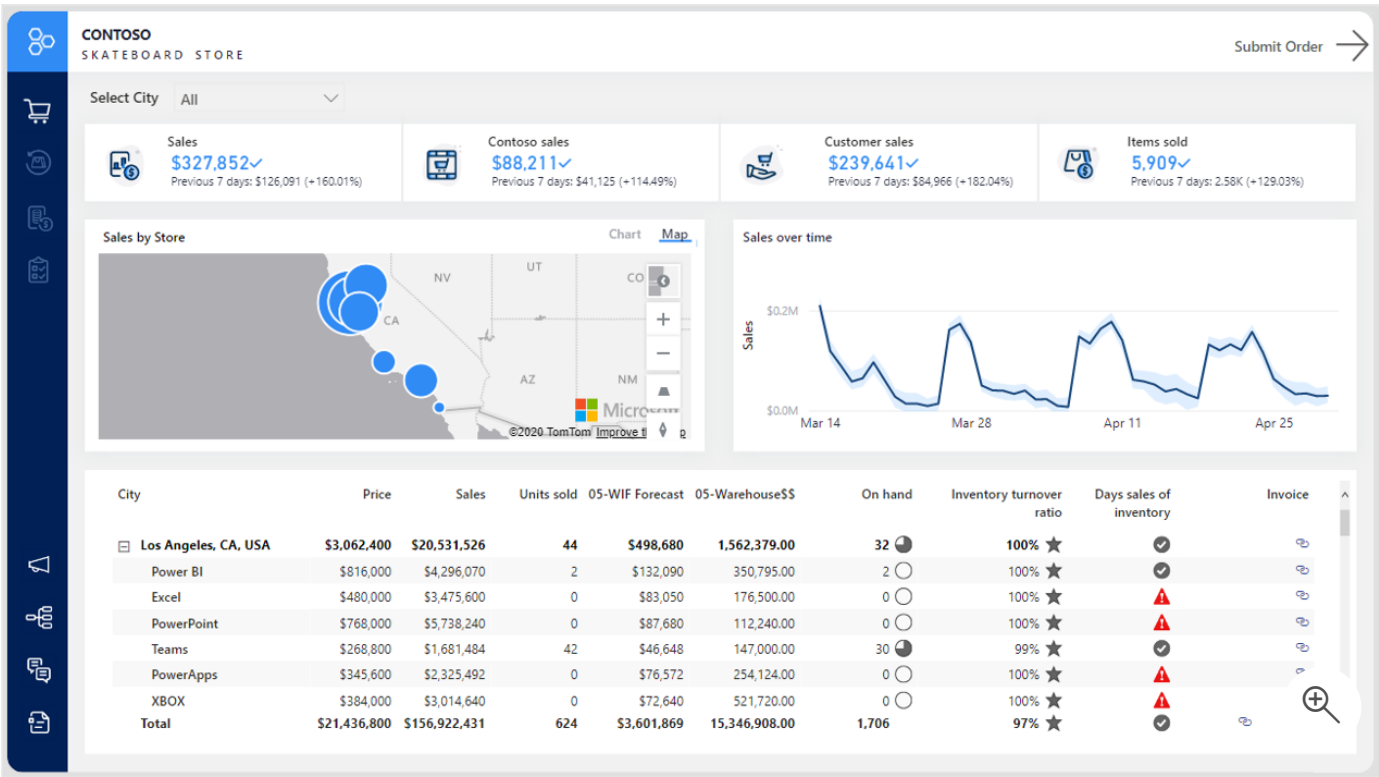
Operational reports

Operational reports are designed to give the report consumer the ability to monitor current or real-time data, make decisions, and act on those decisions. Operational reports can include buttons that allow the report consumer to navigate within the report and also beyond the report to perform actions in external systems. Frequently, operational reports serve as a hub for action that is used by report consumers as part of their daily activity and workload.

This type of report should minimize the number of analytical features to ensure that focus remains on the operation that it's designed to serve. A streamlined user experience is the primary aim for this report type because excessive clicking or illogical flow can lead to high dissatisfaction.

A good example of an operational report is one that allows monitoring of a manufacturing production line. When an unexpected event arises, such as equipment malfunction, a button could allow workers to start a maintenance request.

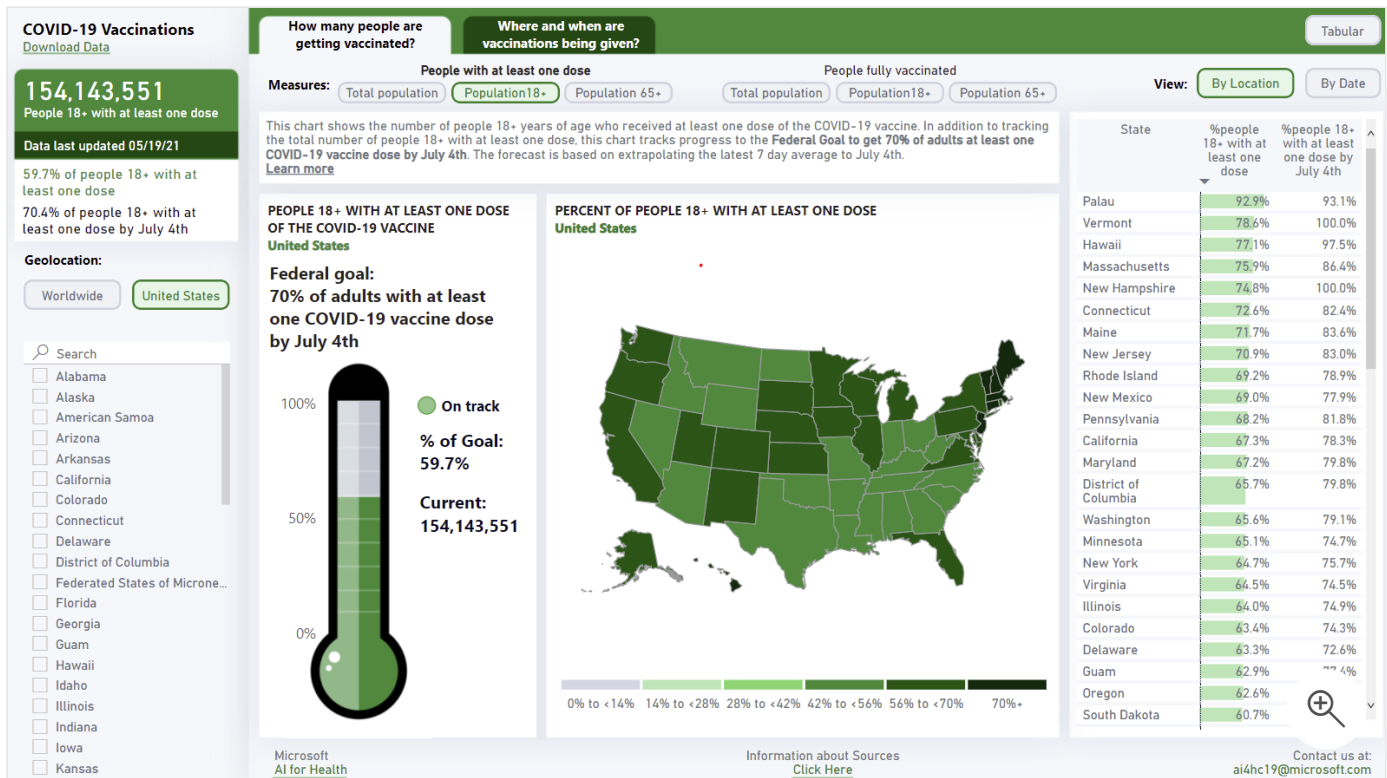
An example of an operational report at the Contoso Skateboard Store would be an inventory report that informs the report consumer of current stock levels, and highlighting low stock levels or back orders. It also includes a **Submit Order** button that allows users to create a purchase order.



Educational reports

Educational reports assume that the report consumer is unfamiliar with the data or context. So the reports must provide clear narrative detail and guidance to help with understanding. This type of report is often used in journalism and by governments to disseminate information to large audiences that have varying levels of understanding of the subject.

A good example of an educational report is one that describes the rollout of COVID-19 vaccination progress and that can be filtered by the home geographic region of the report consumer.



Next unit: Define user interface requirements

[Continue >](#)

Define user interface requirements

6 minutes

UI requirements relate to how reports are consumed and to the appearance and behavior of reports. Aspects to consider include form factor, input method, style and theme, and accessibility.

Form factor

In the context of report design, form factor describes the size of the hardware that is used to open reports, and to page orientation (portrait or landscape).



Generally, today's computers are accompanied by large-sized monitors and, occasionally, multiple monitors. Large monitor screen sizes are ideal for viewing reports in web browsers, especially when they include several visuals or complex visuals by using landscape orientation.

Mobile devices, which are typically used when the report consumer is away from their desk, have a smaller form factor. Phones and tablets display content in portrait orientation by default. Smaller form factors demand a different design approach compared to reports that are designed

for larger form factors. Accordingly, when you design for a smaller form factor, strive for fewer and less complex visuals. Also, visuals should be large to help ease viewing and interactivity.

Mobile devices encompass augmented or mixed reality technologies, allowing head-mounted devices to display reports that are superimposed over the reality of the surroundings.



Occasionally, the design of a report that is intended for a large form factor can be refactored to create a mobile view. The mobile view might contain a subset of visuals from the full-sized report.

Input method

When defining UI requirements, also consider input methods that are supported by devices or applications.

While a computer has a keyboard and pointing device (mouse), mobile devices rely on common gestures, such as tap, double-tap, drag, pinch, spread, or press. Report consumers who are using mobile devices can also use on-screen keyboards, voice control, or barcode and QR code readers. Augmented or mixed reality devices rely heavily on hand gestures or body movement.

Knowing how your report consumers are likely interacting with reports should influence your report designs. Consider the number of visuals that display together on the page, the complexity of visuals, spacing between visuals, and the use of interactive design elements such as tooltips, slicers, buttons, or filters.

When a report is embedded in an application, input can be received programmatically from the application. For example, when the application user opens a page to view history for a specific customer, a filter automatically passes to an embedded report to filter and display sales history for that customer.

Style and theme

UI requirements should also consider style and theme. Strive to design reports with a consistent and distinctive appearance that is determined by a deliberate theme.

The report theme should express your organizational branding or aim to complement it. At a minimum, the theme should include the following elements:

- A brand mark or logo symbol.
- A palette of colors that align to, or complement, organizational branding. The colors should also be sufficiently different so that, when applied to visuals, they provide appropriate contrast when appearing side by side.
- Text settings, including font selection, sizes, and color.

To manage style and theme changes effectively and efficiently, design reports that use images and themes that are stored in a central repository. This approach improves change management: Changes that are applied to the repository can automatically cascade through to reports.

Accessibility

UI requirements should also factor in accessibility. Reports need to communicate to the broadest audience possible. So you should consider how report consumers with no-to-low vision or other physical disability can fully experience the reports.

While you might not be aware of report users with accessibility issues today, it's a good idea to design for accessibility from the outset. Accessibility requirements can influence your report designs in terms of form factor, input method, and style and theme.

To support people with low or no vision, consider using:

- clear and large-sized fonts,
- well-spaced and large visuals,
- sufficiently contrasting colors,
- and intuitive report navigation that can be understood by keyboard and screen readers.

Some physical disabilities can inhibit or prevent report consumers from fully interacting with reports in the way that you intend. When possible, ensure that you offer alternative paths for consumers to follow to achieve the interactive design outcomes. For example, adding alt text to visuals for screen reader support, and setting tab order for keyboard navigation.

Next unit: Define user experience requirements

[Continue >](#)

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Define user experience requirements

2 minutes

UX requirements relate to how reports deliver the expected report consumer needs. To assess user experience requirements, you should consider the audience, report type, and the UI requirements.

Other UX requirements can include:

- Support for interactions, such as:
 - Drill up, drill down, or drill through to details.
 - Navigation within the report or to other reports.
 - Filters or slicers that can be applied to report visuals, specific pages, or all pages.
 - Data export as specific data formats, such as Microsoft Excel or a comma-separated value (CSV) file.
- Support for ad hoc questions to retrieve a response in the form of a data visualization.
- Configuring of data alerts to notify people when specific data values change or exceed predefined thresholds.
- Links to open webpages.
- Actions to open applications, write back data entry values, or trigger workflows.
- What-if analysis that allows the report consumer to modify "what-if" values to understand the consequences of different scenarios. For example, what-if analysis could allow consumers to predict sales revenue based on different consumer demand estimates.
- Page layouts that can extend over multiple pages and are suitable for printing as multi-page documents.
- Printing the report to a physical printer or as a PDF document.
- Subscribing to the report so that it can be automatically delivered as a document on a scheduled basis.

- Adding commentary, feedback, or engaging in a conversation about the report.
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Next unit: Explore report designs

[Continue >](#)

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Explore report designs

8 minutes

The following report allows you to explore different report design outcomes for the Contoso Skateboard Company. The report shows the three factors that you should consider: audience, form factor, and other requirements. Select an option for each factor, and then select **Go!** to reveal a recommended report design.

Tip

You can maximize the report by selecting the double-headed arrow that is located in the lower-right corner. When you're ready to return to the module, select **Escape**.

Possible design recommendations that you can explore include:

- Executive > Browser > None
- Executive > Browser > Print-friendly
- Executive > Phone > None
- Executive > Tablet > None, and others

Embedded report allows you to explore design recommendations:

Next unit: Check your knowledge

[Continue >](#)