ELEVATING **DATA EXPERIENCES**

HEURISTICS FOR **DATA EXPERIENCES**

The Data Experience (DX) critique framework was developed to provide a more structured and consistent methodology for critiquing data visualization design with a human-centered focus. The DX critique framework leverages existing heuristic frameworks and human-centered design techniques, along with principles from cognitive science and accessibility. These were then extended to address unique aspects of Data Experience and Data Visualization design.

The DX critique framework is divided into separate parts covering six design pillars, which are based on stages of the DX design process.

Each assessment consists of two main steps.

Study

Activities and questions that help you to understand the current DX design, and to identify the visual elements and design choices in the current product.

Evaluate

A set of critique-al questions to guide you in considering the strengths and weaknesses in the current DX design, through the lens of human-centered Data Experience heuristics.

DATA EXPERIENCE DESIGN PILLARS

These DX design pillars build on each other, working as a useful gauge of a product's DX design maturity.

Products that are earlier in their DX design maturity journey will likely have weaknesses or opportunities related to the Information Architecture pillar, or even the Purpose pillar. Addressing opportunities related to those initial pillars will yield more impactful improvements to the Data Experience.

Conversely, starting out by skipping ahead to a later pillar, such as Data Representation or Visual Hierarchy, will likely lead to less impact on the DX if there are significant weaknesses in the product's Information Architecture, or if the purpose of the product is still ill-defined.

PILLAR 1 **PURPOSE**	What key business questions can be answered with this data product?	▸ Audience ▸ Key business question ▸ Analytical tasks ▸ Information needs
PILLAR 2 **INFORMATION ARCHITECTURE**	How are information elements structured and organized to support user flow(s) for completing the analytical tasks?	▸ User task flow ▸ Content structure ▸ Navigation ▸ Orienting information
PILLAR 3 **DATA REPRESENTATION**	How are numbers translated into abstractions (aggregations), and visual forms? How do these data representation choices support or hinder the purpose and analytical tasks?	▸ Chart forms ▸ Visual encoding attributes ▸ Axis scale ▸ Aggregation & level of detail ▸ Chart-level visual elements, including gridlines, axis lines & labels,mark labels, reference lines
PILLAR 4 **VISUAL HIERARCHY**	How are content elements (data + non-data elements) visually organized and styled to communicate the flow and architecture of this product?	▸ Typography hierarchy ▸ Visual priority of page elements with layout position, size, color ▸ Visual grouping of page elements with proximity, white space, alignment, enclosing containers
PILLAR 5 **INTERACTIVITY**	What can users do with the default display? How do these interactions support or hinder the purpose and analytical tasks of this product?	▸ Interactive functionality for exploring data, including data-driven interactions, filters, search, or other customization options ▸ Visual cues and feedback to communicate changed state(s)
PILLAR 6 **CONTEXT**	How does additional content, visual formatting, or functionality provide supplemental information? How do these supplemental elements support or hinder the purpose and analytical tasks for this product?	▸ Text elements, including annotations & explanatory text ▸ Contextual information to add meaning ▸ Animation ▸ Visual metaphor

ELEVATING **DATA EXPERIENCES**

DATA EXPERIENCE HEURISTICS

The DX critique framework includes 16 human-centered Data Experience heuristics[1].

The heuristics are grouped into 5 broader categories of DX design outcomes.

These DX design outcomes and heuristics are focused on aspects of the Data Experience from the users' perspective, and allow us to more consistently measure strengths and weaknesses in the design of our data products.

[1] The 16 heuristics were selected after reviewing heuristics and related concepts from other well-established frameworks (listed below). Most of the heuristics in our final list appear in multiple frameworks. However, a few are unique or have a slightly different definition or scope, so that they could fit better to some of the unique aspects of data products that go beyond the more general aspects of user experience.

For a detailed mapping of the DX heuristics and their sources, see appendix A.

- 10 Usability Heuristics for User Interface Design.
- Usability 101: Introduction to Usability
- The Development of Heuristics for Evaluation of Dashboard Visualizations
- Web Accessibility Quick Checklist for Designers.
- Information Architecture Heuristics: A Checklist for Critique
- User Experience Design
- Stanford Guidelines for Web Credibility
- First Principles of Interaction Design

FINDABLE Users can easily find their way, as well as locate and discover information and functionality	
NAVIGATE	Fi[1]
PAGE STRUCTURE	Fi[2]
LOCATE	Fi[3]
LEARNABLE Users can easily learn how to use the system and how to interpret the information	
CONSISTENCY	Le[1]
MATCH MENTAL MODELS	Le[2]
RECOGNITION OVER RECALL	Le[3]
FEEDBACK	Le[4]
HELP	Le[5]
FOCUSED & CLEAR Users can focus on what is most important and most meaningful to their analysis	
LIMIT DISTRACTION	Fc[1]
DIRECT ATTENTION	Fc[2]
FLEXIBILITY	Fc[3]
PRODUCTIVITY	Fc[4]
TRUSTED Users trust the data and their interactions with the system	
PREDICTABLITY	Tr[1]
ERROR PREVENTION & RECOVERY	Tr[2]
CREDIBILITY	Tr[3]
VALUABLE Enables users to answer key business question(s) or complete analytical task	
VALUABLE	Va[1]

PILLAR 1 **PURPOSE**

A well-defined purpose is the foundation and starting point of Data Experience design.

All other elements of the DX design are judged against the product's purpose, so a well-defined purpose is necessary in order to evaluate all remaining elements.

For that reason, critiquing this pillar is a little different than all of our other DX design pillars.

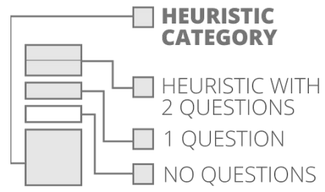
Critiquing this pillar requires stepping back from looking at the data product, and instead looking at how key information about the data product has been defined.

A well-defined purpose for a data product should include these elements:

- Audience
- Key business question (KBQ) or analytical task
- Follow up questions or related tasks
- Information audience will need in order to answer the KBQ or complete the analytical task(s)

HOW TO READ

This chart shows how many questions apply to each of the heuristics. Use these to guide your understanding of how each pillar can impact the Data Experience.



THE VIZ CANVAS

All these elements of a data product's purpose can be documented with the Viz Canvas.

A completed Viz Canvas can then be used to critique the purpose pillar: whether the definition of the product's purpose is specific and focused enough to proceed with evaluating the remaining Data Experience design pillars.

Note that your data product may have several target audiences. Complete a separate Viz Canvas for each audience.

PROJECT NAME	

1 AUDIENCE

Who will use this viz? What do they already know about this topic? Are they experts or generalists? What is their data literacy level? How much time will they spend viewing or interacting with this viz?

2 PURPOSE

Why will they want to use this viz? What key business question(s) do they need to be able to answer? Are there any follow-up questions?

3 OUTCOME

Why do they want to answer these questions? What decisions, activities, actions, or other changes will this viz support? Is there a threshold that determines what action should be taken? (budgets, levels of risk)

4 MEDIUM

Where will they use this viz? Online vs print? Phone vs desktop vs projector? Will it be static or interactive? Will it be a self-service dashboard or a presentation? What size of screen or page will users consume this on?

5 DATA

What information can help your audience answer their key question(s)? How will it help them to answer their question(s)? What data elements & source(s) could provide this information? What is the quality of the available data (completeness, life expectancy, and freshness)?

STUDY

To critique the Purpose pillar, you will need one item.

Review required items:

- Completed Viz Canvas

Start by reviewing the current Viz Canvas to understand the purpose of the data product as currently defined.

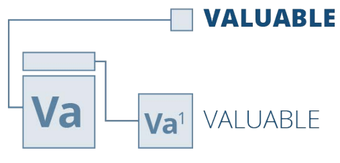
Based on the Purpose and Outcome sections of the Viz Canvas, answer these questions:

- What is the key business question, problem or job task?
- What follow up questions would enable users to answer the key business question?
- Why do they want to answer these questions? What will they do with the answers?

EVALUATE

Evaluate the product's Purpose pillar with these critique-al questions.

1. Is the purpose focused and specific to a key business question, problem or job task? **Va¹**
2. Are the outcomes actionable or related to a specific decision or job task? **Va¹**



PILLAR 2 **INFORMATION ARCHITECTURE**

STUDY

To critique the Information Architecture pillar you will need these items.

To understand strengths, weaknesses, and opportunities in the current design, begin by reviewing the Information Architecture.

Review required items

- **Completed Viz Canvas** with a well-defined key business question

Define the product level structure with an Information Architecture map

- List each page in the product
- Describe the purpose, key business question, or main tasks for each page in 1-2 sentences
- For each page, are there any likely follow-up questions to the main key business question?
- Are there any navigation relationships between pages? What would trigger or cause users to navigate to the next page?

Define the page level structure with a wireframe of each page

Each wireframe should identify:

- What are the main content sections, or groups of content?
- What information does each section provide?
- What is the relative importance of each section? **Note:** some (or all) sections may have equal visual importance

Define the key task flows with a wireflow diagram

Using the page-level structure (page wireframes) and product-level structure (Information Architecture map) of the current design, describe the most common task flow(s): what steps do users need to take to answer the key question or complete the analytical task with the current design?

EVALUATE

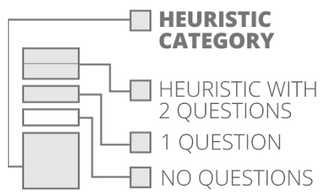
Evaluate the product's Information Architecture pillar with these critique-al questions.

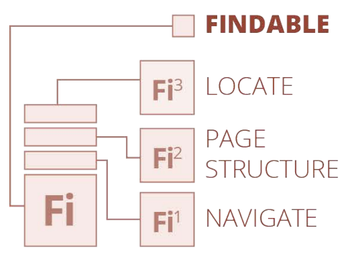
Note: You may not need to consider every question for every data product. These questions are simply meant as guides to help you consider key aspects of Information Architecture from a human-centered perspective.

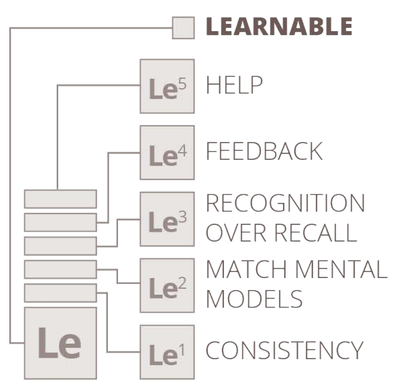
1. Flow: what steps do users need to take to answer the key question or complete analytical tasks with the current design?	
1.1 What are the strengths and weaknesses in how this flow supports the task(s)?	Va¹ Fi¹ Fi²
1.2 How might it be streamlined or enhanced to better support the task and reduce cognitive friction?	Fc³ Fc⁴
1.3 How might it be streamlined or enhanced to help users focus on what's most important and not be distracted by less relevant information?	Fc¹ Fc² Fc⁴
2. Does navigation provide flexibility to move between different levels of overview, and zoom, in a way that fits well with the users' analytical flow?	Fc³ Fc⁴
3. On each page: can users easily understand where they are, and what information is and isn't available?	
3.1 Are there clear visible cues to communicate users' path to the current view?	Fi¹ Le⁴
3.2 Do similar elements look and behave consistently across screens and states? (Orienting information, navigation menus)	Le¹
4. Can users easily scan the page and locate information elements?	Fi² Fi³
5. Do language and symbols (icons) match users' language and mental models?	Le²
6. Are language and symbols (icons) used consistently?	Le¹
7. Are instructions or help available, in close proximity to where it is most applicable?	Le⁵
8. How might elements that communicate supporting information or available functionality be integrated with users' flow? (To minimize memory load without cluttering the view)	Le³
9. Is information about the data source, recency, and scope communicated clearly, accurately, and consistently?	Tr³

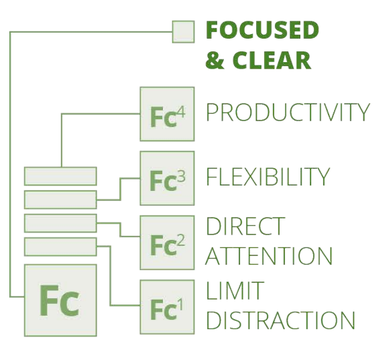
HOW TO READ

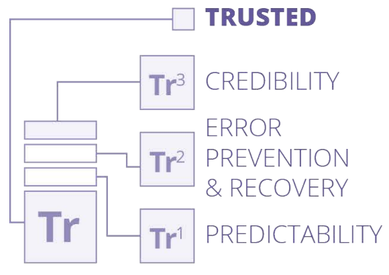
This chart shows how many questions apply to each of the heuristics. Use these to guide your understanding of how each pillar can impact the Data Experience.

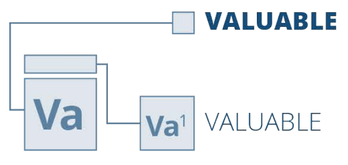




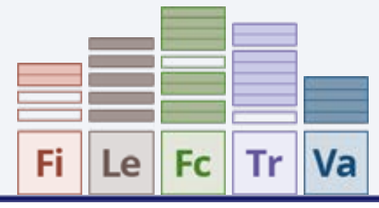








PILLAR 3 **DATA REPRESENTATION**



STUDY

To critique the Data Representation pillar you will need these items.

Review required items

- **Completed Viz Canvas** with a well-defined key business question
- **Information Architecture documentation:** Information Architecture map, wireframes for each page, and wireflow (page wireframes combined with task flows)

To understand strengths, weaknesses, and opportunities in the current design, begin by reviewing each chart and describing what is being visualized.

Unit of analysis
What entities or things are being measured (such as sales transactions, cardholders, widgets)?

What is being measured?
A quantitative value, such as sales amount or count of transactions. There may be a primary measure as well as supplementary measures.

Unit of aggregation
What entities or dimensions are used to group the unit of analysis (such as transaction status, region)?

Facets
Are any additional dimensions used to show more detailed facets of the data?

EVALUATE

Evaluate the product's Data Representation pillar with these critique-al questions.

Note: You may not need to consider every question for every data product. These questions are simply meant as guides to help you consider key aspects of data representation from a human-centered perspective.

1. How does the information in each chart relate to the key questions or tasks? — Va¹

2. What are the strengths and weaknesses of the **data abstraction** choices? (unit of aggregation, aggregation methods, supplemental facets)

   2.1 Do the data abstraction choices provide valuable insight? — Va¹

   2.2 Is there any unnecessary detail included that adds noise or distracts from the signal? — Fc¹

   2.3 How could data abstraction choices potentially lead to inaccurate interpretation? — Tr²

   2.4 How might the data be abstracted to better emphasize the most important pattern or attribute of the data? — Fc²

3. What are the strengths and weaknesses of the visual encoding in answering the key questions?

   3.1 Are there alternative encodings that would be more effective for answering the key questions? — Va¹

   3.2 Is any unnecessary visual detail included that competes for attention without adding significant value? (On each data mark or on chart-level visual elements like gridlines) — Fc¹

   3.3 How could visual encoding choices potentially lead to inaccurate interpretation? — Tr²

   3.4 How might the data be presented to more effectively prevent error or inaccurate interpretation (Visual encoding choices, axis scales, labeling) — Tr²

4. How might additional visual encodings be used to present additional information and context?

   4.1 To help users gain a more nuanced or complete picture — Fc⁴ Tr²

   4.2 To help users focus on important data points, patterns, relationships, or other insights — Fi³ Fc²

   4.3 To help users make accurate comparisons, and understand scale & magnitude of numbers — Fc⁴ Tr² Tr³

   4.4 For charts that use more than one visual encoding attribute, does it add valuable information? Does it hinder the user's ability to perform their task in any way? — Va¹ Fc⁴

5. What are the cognitive steps required to decode the meaning of each data point and to complete the visual search task? How might these steps be optimized for the visual search task? — Fi³ Fc⁴

6. How are new users supported in understanding how to decode the data representation?

   6.1 How might instructions, hints, or visual cues be integrated with users' decoding or visual analysis flow? — Le³ Le⁵

   6.2 Is visual language used in encoding and language used in text elements both internally and externally logical? (Consistently used to represent the same thing, and matching users' mental models) — Le¹ Le²

7. How is excluded (filtered) and unknown data communicated to users? How is the scope of the data, specific to a page or page state, communicated? — Le⁴ Tr³

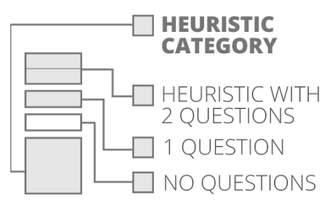
Visual search tasks
Use categories from the typology developed by Brehmer & Munzner:

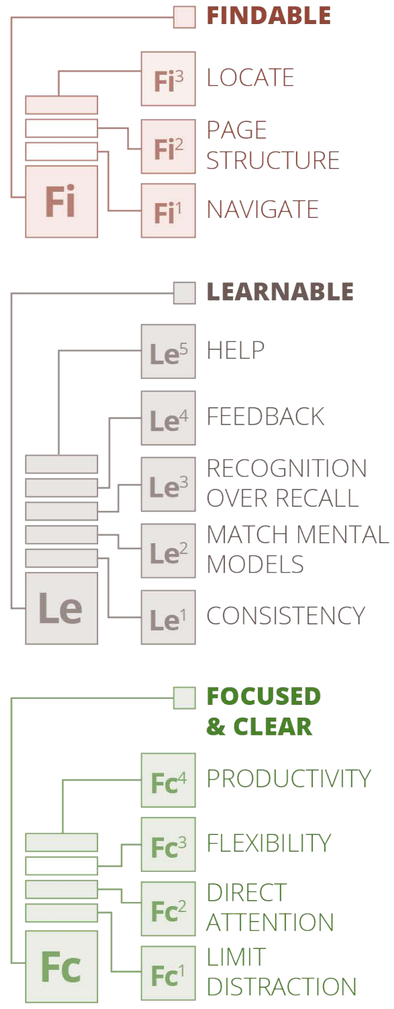
- Lookup
- Locate
- Browse
- Explore
- Identify
- Compare
- Summarize

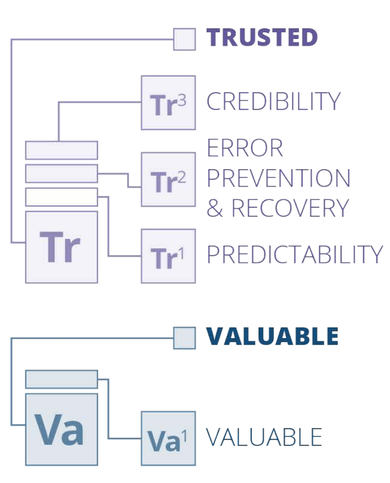
From: A Multi-Level Typology of Abstract Visualization Tasks

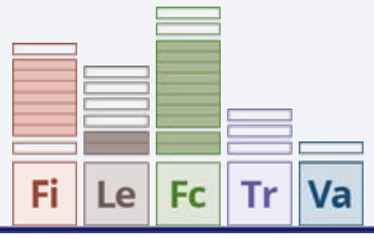
HOW TO READ

This chart shows how many questions apply to each of the heuristics. Use these to guide your understanding of how each pillar can impact the Data Experience.









PILLAR 4 **VISUAL HIERARCHY**

STUDY

To critique the Visual Hierarchy pillar you will need these items.

Review required items

- **Completed Viz Canvas** with a well-defined key business question
- **Information Architecture documentation:** Information Architecture map, wireframes for each page, and wireflow (page wireframes combined with task flows)

To understand strengths, weaknesses, and opportunities in the current design, begin by reviewing the visual hierarchy of each page.

Look at each page in the current design

Do any sections, charts, or other elements of the page draw your attention first?

Look at the wireframe of each page

Rank the relative visual importance of each section in terms of the current visual hierarchy of the design (which sections draw more or less attention)?

Note: Some sections may have equal visual importance

EVALUATE

Evaluate the product's Visual Hierarchy pillar with these critique-al questions.

Note: You may not need to consider every question for every data product. These questions are simply meant as guides to help you consider key aspects of Visual Hierarchy from a human-centered perspective.

1. On each page: is the relative importance of each text element visually clear?

   - 1.1 Are more important text elements formatted for higher visual priority? (Page title, section headers) — Fi², Fc²
   - 1.2 Are less important text elements de-emphasized? (Axis titles, labels) — Fi², Fc¹
   - 1.3 Are text elements with a similar function or similar level of importance formatted consistently — Le¹
   - 1.4 Is there enough contrast between different levels of the typography hierarchy for users to quickly and easily be able to discern the difference? — Fc²
   - 1.5 How might text formatting be used to more clearly communicate visual priority? (Size, weight, color) — Fi², Fc²

2. On each page: which sections, charts, or other elements of the viz draw attention most and least?

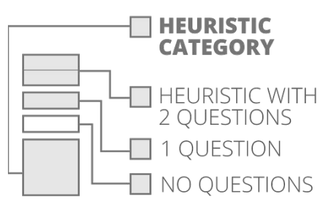
   - 2.1 Do these correspond to the elements of the viz that should draw the most or least attention? (Based on the key business question and users' analytical task flow) — Fi², Fc²
   - 2.2 Are there any elements that could be de-emphasized to reduce visual clutter? — Fc¹
   - 2.3 Are elements with a similar level of importance formatted with consistent design treatment? — Le¹
   - 2.4 Is there enough contrast between items with a different level of importance, for users to quickly and easily be able to discern the difference? — Fc²
   - 2.5 How might design treatments be used to more clearly communicate visual priority? (Layout position, size, color) — Fi², Fc²

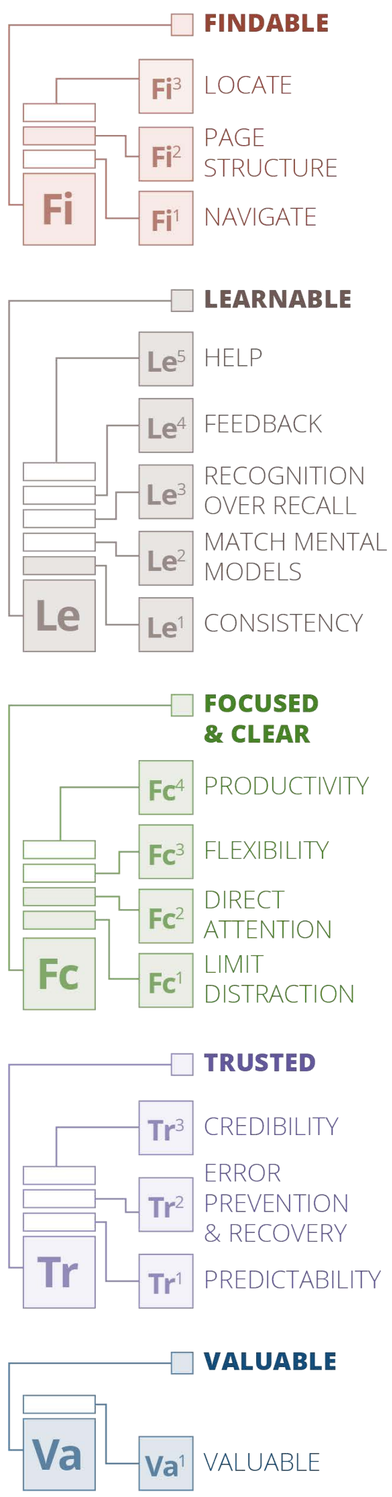
3. Which charts or elements of the viz belong to a related grouping? Are these visual relationships communicated clearly? — Fi², Fc²

4. How might design elements be used to more clearly communicate visual relationships? (Proximity & white space, alignment, enclosing containers) — Fi², Fc²

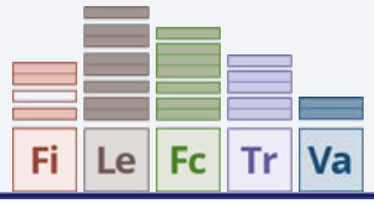
HOW TO READ

This chart shows how many questions apply to each of the heuristics. Use these to guide your understanding of how each pillar can impact the Data Experience.





PILLAR 5 **INTERACTIVITY**



STUDY

To critique the Interactivity pillar you will need these items.

Review required items

- **Completed Viz Canvas** with a well-defined key business question.
- **Information Architecture documentation:** Information Architecture map, wireframes for each page, and wireflow (page wireframes combined with task flow

To understand strengths, weaknesses, and opportunities in the current design, begin by reviewing the available interactive functionality in each page, in relation to the key business question and user task flows

How does available interactive functionality fit in with users task flow(s)

How is available interactive functionality communicated?

How is available interactive functionality triggered by users?

EVALUATE

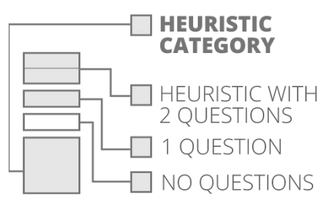
Evaluate the product's Interactivity pillar with these critique-al questions.

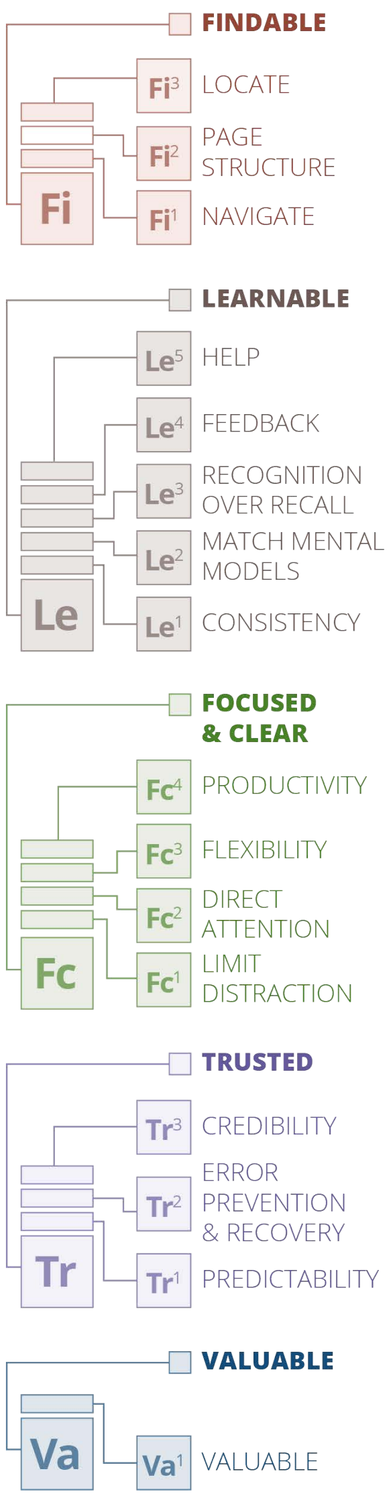
Note: You may not need to consider every question for every data product. These questions are simply meant as guides to help you consider key aspects of interactivity from a human-centered perspective.

1. Are the available interactive features a good fit for the audience and type of Data Experience (DX)? (Is it primarily an explanatory or exploratory DX?)	Va¹
2. What are the strengths and weaknesses of the available interactive features?	
2.1 In supporting users to answer their key question or tasks	Va¹
2.2 In providing additional context to help the user correctly interpret the display	Le² Fc¹
2.3 In preventing or reducing errors in insights drawn from the display	Tr²
2.4 In helping users to learn how to read, interpret, or interact with the display	Le⁴ Le⁵
3. Can users easily discover and understand what interactive functionality and options are available?	Fi³ Le³ Tr¹
4. Is similar or recurring interactive functionality presented consistently?	Le¹
5. Does similar interactive functionality behave consistently? (Click vs. hover)	Le¹
6. Are selections or other actions easy to reverse? Can users clear all actions to revert back to the original view?	Fc³ Tr²
7. Is the scope of interactive functionality clearly communicated, both before and after it is triggered? (Does it impact one chart vs. all charts on page?)	Le³ Le⁴ Tr¹
8. How might interactive features provide users the ability to customize the display for more meaningful or advanced analysis?	Va¹ Fc³
9. How might interactive features be used to provide flexible and data-driven ways to zoom in and out to different levels of detail? (Within pages and between pages)	Fi¹ Fc¹ Fc³
10. How might interactive features be used to enable searching for specific data points, patterns or relationships?	Fi³ Fc² Fc⁴
11. If interaction requires data input, can users clearly understand how this data will be used, stored, and protected?	Tr³

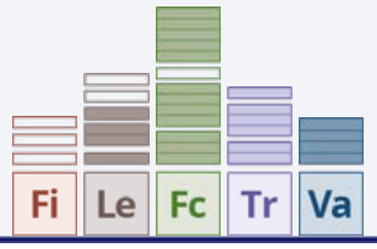
HOW TO READ

This chart shows how many questions apply to each of the heuristics. Use these to guide your understanding of how each pillar can impact the Data Experience.





PILLAR 6 **CONTEXT**



STUDY

To critique the Context pillar, you will need these items.

Review required items

- **Completed Viz Canvas** with a well-defined key business question
- **Information Architecture documentation:** Information Architecture map, wireframes for each page, and wireflow (page wireframes combined with task flows)

To understand strengths, weaknesses, and opportunities in the current design, begin by reviewing how supplemental information and visual encodings are used on each page, in relation to the key business question and user task flows.

How do supplemental or context-related elements fit in with the users' task flows?

Supplemental or context-related elements could include:

- Annotations, titles, and explanatory text
- Animation
- Color

EVALUATE

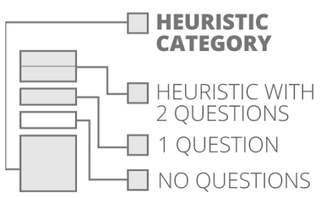
Evaluate the product's Context pillar with these critique-al questions.

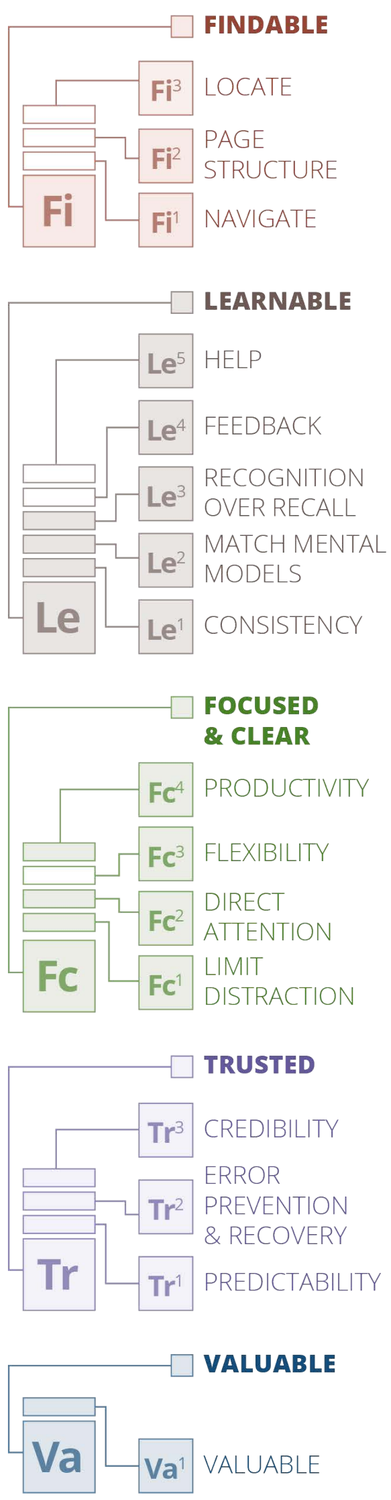
Note: You may not need to consider every question for every data product. These questions are simply meant as guides to help you consider key aspects of the contextual layer from a human-centered perspective.

1. How might we spark users' curiosity? (With additional data elements, visual encodings, or interactions)	Va¹ Fc⁴
2. Could any other layers of meaning be added to improve the data experience? (Using data elements, visual encodings, interactions)	Va¹
3. Metaphor	
3.1 How could metaphor be used to make the numbers more relatable or understandable?	Le² Tr²
3.2 Are there any visual metaphors being used that could clash with audience's existing mental models?	Le² Tr¹ Tr²
4. Text elements	
4.1 Do titles and explanatory text help users to understand the available content & functionality, and how to use it?	Va¹ Tr¹
4.2 How might annotations be used to help users focus on important data points, patterns, relationships, or other insights?	Fc²
4.3 How might annotations be used to provide users more details on demand?	Fc¹
4.4 If annotations are being used, how do they help users in answering their key business question? Do they distract, or add unnecessary cognitive load?	Va¹ Fc¹
5. Animation	
5.1 If animation is used, how does it help users in understanding or interpreting the data, or changes in the data? Does animation distract, or add unnecessary coginitive load?	Fc¹ Fc² Fc⁴
5.2 Can animation be easily controlled by users? (Started, stopped, speed control)	Fc⁴
5.3 How might sequencing or gradual build-up of narrative be used to help users focus on important data points, patterns, relationships, or other insights?	Fc²
6. Supplementary color usage	
6.1 How is color used to help users understand how to interpret color encoding? (Labels, legends, text elements)	Le¹ Le³
6.2 How might color be used beyond data encoding to direct attention or support users in their analytical tasks?	Fc² Fc⁴
7. Is there meaningful context provided for accurate comparisons? For understanding scale & magnitude? For understanding complex KPIs or underlying business logic?	Fc⁴ Tr² Tr³

HOW TO READ

This chart shows how many questions apply to each of the heuristics. Use these to guide your understanding of how each pillar can impact the Data Experience.





APPENDIX A

HEURISTIC FRAMEWORK
MAPPING

The matrix table below shows how the 16 heuristics and 5 categories from Visa's Data Experience Critique Framework map to heuristics from other heuristic frameworks. This matrix is meant to show general overlap of concepts. All frameworks are listed in the references section (on the next page), which can be consulted for more detailed definitions of each heuristic.

VISA DATA EXPERIENCE CRITIQUE FRAMEWORK	USABILITY HEURISTICS[1]	QUALITIES OF UX AND USABILITY[2]	DASHBOARD HEURISTICS[3]	WEB ACCESSIBILITY CHECKLIST[4]	INFORMATION ARCHITECTURE HEURISTICS[5]	USER EXPERIENCE HONEYCOMB[6]	GUIDELINES FOR WEB CREDIBILITY[7]	INTERACTION DESIGN PRINCIPLES[8]
FINDABLE					Findable Communicative	Findable		Discoverability
NAVIGATE				Navigation and wayfinding	Communicative			Explorable interfaces Visible navigation
PAGE STRUCTURE			Spatial organization	Structure and semantics				
LOCATE			Orientation	Navigation and wayfinding				Discoverability
LEARNABLE		Learnability			Clear Useful Learnable	Usable		Learnability
CONSISTENCY	Consistency and standards		Consistency and standards	Predictability and consistency	Learnable			Consistency
MATCH MENTAL MODELS	Match between system and the real world		Match between system and the real world	Language and readability				Consistency (with user expectation) Use of metaphors
RECOGNITION OVER RECALL	Recognition rather than recall		Recognition rather than recall		Communicative			Anticipation Discoverability Visible Navigation
FEEDBACK	Visibility of system status		Visibility of system status	Error prevention and states	Communicative			Autonomy (keep status information up to date and within easy view) Latency reduction
HELP	Help and documentation		Recognition rather than recall	Error prevention and states	Credible			
FOCUSED & CLEAR								
LIMIT DISTRACTIONS	Aesthetic and minimalist design		Aesthetic and minimalist design/ remove the extraneous (ink)		Clear			Simplify
DIRECT ATTENTION								
FLEXIBILITY	Flexibility and efficiency of use User control and freedom		Flexibility and efficiency of use User control and freedom		Useful Controllable			Autonomy Explorable interfaces
PRODUCTIVITY	Flexibility and efficiency of use	Efficiency	Flexibility and efficiency of use		Useful	Usable		Anticipation Efficiency of the user Fitts's law

APPENDIX A

VISA DATA EXPERIENCE CRITIQUE FRAMEWORK	USABILITY HEURISTICS[1]	QUALITIES OF UX AND USABILITY[2]	DASHBOARD HEURISTICS[3]	WEB ACCESSIBILITY CHECKLIST[4]	INFORMATION ARCHITECTURE HEURISTICS[5]	USER EXPERIENCE HONEYCOMB[6]	GUIDELINES FOR WEB CREDIBILITY[7]	INTERACTION DESIGN PRINCIPLES[8]
TRUSTED								
PREDICTABILITY				Predictability and consistency	Learnable			Consistency (with user expectation)
ERROR PREVENTION AND RECOVERY	Error prevention Help users recognize, diagnose, and recover from errors	Errors		Error prevention and states	Controllable			Explorable Interfaces (make actions reversible) Fitts's law
CREDIBLITY					Credible	Credible	Make it easy to verify the accuracy of the information on your site Update your site's content often	State (make clear what you will store & protect the user's information)
VALUABLE		Utility Satisfaction			Valuable	Useful Valuable		

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NOTES

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