

UX ARCHITECTURE FOR DATA COLLABORATION

Stibo Systems Case Presentation

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Outline

- ▶ UX research process
- ▶ Results and observations
- ▶ Information design
- ▶ Interaction design

As a newly hired UX architect, your initial task is to create an outline for the UX work in a project aimed at improving the UX of the **collaboration tooling**¹ in an existing online Excel-like table system.

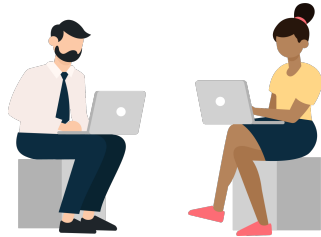
...assume that you have the necessary budget for it.

¹Ida Larsen-Ledet, and Henrik Korsaard. Territorial functioning in **collaborative writing**. CSCW 2019
Ida Larsen-Ledet, Henrik Korsaard, and Susanne Bødker. **Collaborative writing** across multiple artifact ecologies. CHI 2020

UX Research - key questions

Why, how, and when do users collaborate?

- ▶ What are the primary tasks and objectives?
- ▶ What are the different roles and responsibilities in collaboration?
- ▶ How do remote work impact the user experience?
- ▶ What other tools do they use to support the tasks – communication, analysis etc.?



UX Research

Discover

1. Observe collaborative session
2. Contextual interviews
3. Internal/external research
4. Analytics and in-app surveys
5. Workshops

Define

- ▶ Collaborative task objectives
- ▶ Scenarios, personas and user journeys
- ▶ Information concepts and architecture
- ▶ UX quality criteria and KPIs

Discover

Define

Prototype

Evaluate

Integrate

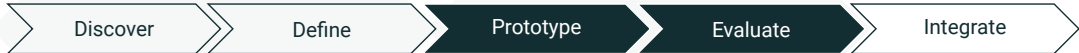
UX Research – iterate where needed

Prototype

- ▶ Collaborative user flow
- ▶ Information architecture and UI design
- ▶ Key UI components and technical features

Evaluate

- ▶ Internal review and testing
- ▶ User feedback (informal/think aloud)
- ▶ Review UX quality criteria and KPIs



Results: Collaborative scenarios

1. Collaborative projects

- ▶ Peers collaborate on a larger project
- ▶ Different responsibilities and expertise
- ▶ Mixed focus collaboration with a high degree of coordination
- ▶ Multiple data views

2. Real-time collaboration

- ▶ Peers collaborate on smaller (urgent) tasks
- ▶ Real-time collaboration
- ▶ Shared task focus
- ▶ Few data views

3. Training

- ▶ Expert user provide training and onboarding of novices
- ▶ Focused on learning the application and/or data
- ▶ Tailored data views and exercises

Results: Key UX qualities

- ▶ Sharing with collaborators should be easy and include task assignment and notes
- ▶ Important to know who did what in a shared view (awareness, track changes, accountability etc.)
- ▶ Support sandbox experimentation and analysis before publishing
- ▶ Collaborative features should not overshadow existing task features



Interaction Design features

- ▶ The user can save changes as individual **views** (sheets) of data
- ▶ **The user can share their saved views with other users**
 - The user can add or remove columns from the **view**
 - Users can filter and order the table content
- ▶ **Multiple users must be able to work on the same views simultaneously**
 - The users of the system may be located on multiple locations

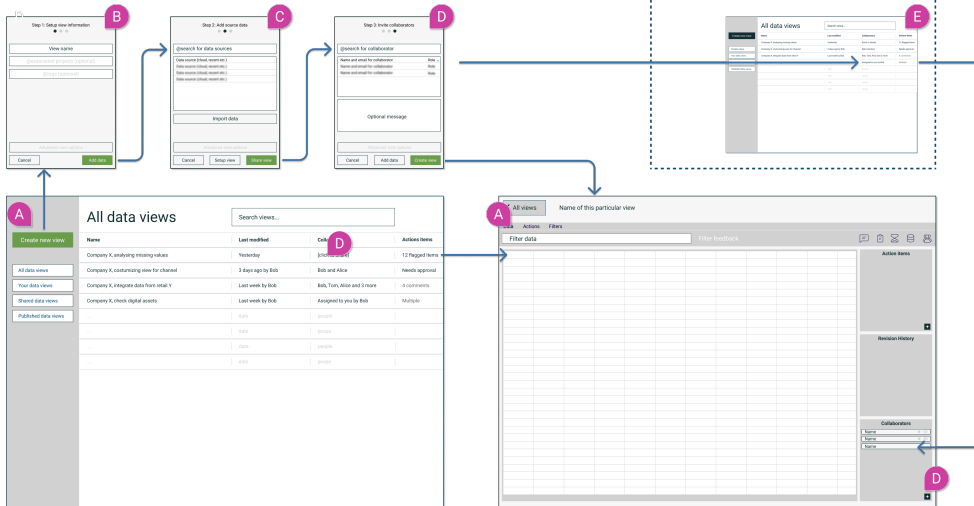
Information Design: Data views as first class objects

- ▶ The main information artifact when collaborating – it's what we share and work on
- ▶ A data view encapsulate a data source, users, and the revision history
- ▶ Views can be published in formats fitting the consumer needs

The screenshot shows a web interface for managing data views. On the left is a sidebar with a 'Create new view' button and a list of view categories: 'All data views', 'Your data views', 'Shared data views', and 'Published data views'. The main area is titled 'All data views' and contains a search bar and a table of data views. Annotations A through E highlight specific UI elements: A points to the sidebar, B to the title, C to the search bar, D to the 'Collaborators' column, and E to the 'Actions items' column.

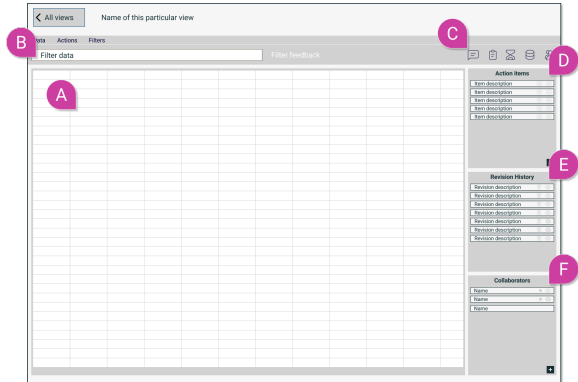
Name	Last modified	Collaborators	Actions items
Company X, analysing missing values	Yesterday	[click to share]	12 flagged items
Company X, customizing view for channel	3 days ago by Bob	Bob and Alice	Needs approval
Company X, integrate data from retail Y	Last week by Bob	Bob, Tom, Alice and 3 more	4 comments
Company X, check digital assets	Last week by Bob	Assigned to you by Bob	Multiple
...	date	people	
...	date	people	
...	date	people	
...	date	people	

Creating a new data view



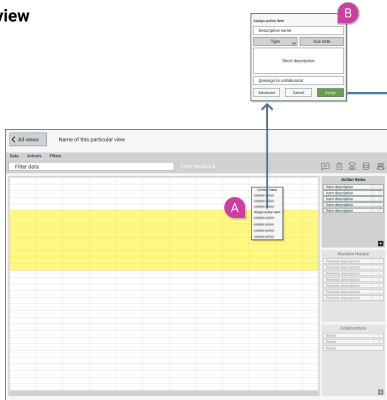
Collaborative tooling with tabular data

- ▶ **Action items:** to support different roles and tasks
- ▶ **History** to support track changes and accountability
- ▶ **Collaborator** pane for awareness and navigation

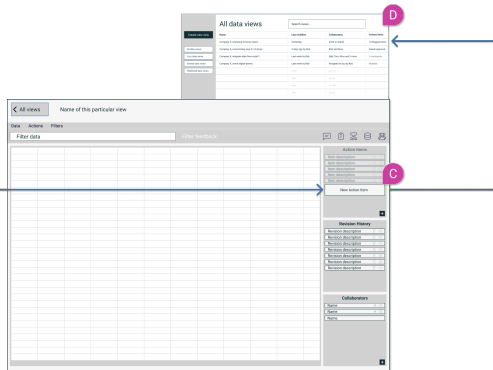


Assign action item to collaborators

Alice's view



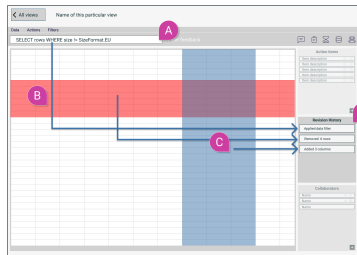
Bob's view



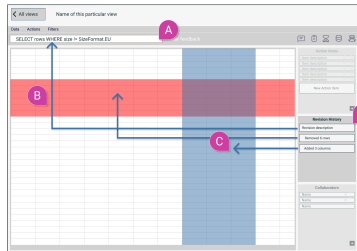
Revision history as key collaboration support

- ▶ Data operations as the replicated objects (CRDT)
- ▶ Support task resumption, accountability and finding stuff
- ▶ Support experimentation – you can always roll back changes
- ▶ A set of operations can be applied to other data views (macros)

Alice's view



Bob's view



THANK YOU