GROUPCOLLECT QUOTES (EPICYCLE #2)

What we learned during our end-to-end test

Remember to record this!

FLAGRANT

Today we want to

1 Describe what we built and tested

2 Share and discuss what we found

3 Review our user requirements

This means we won't*

1. Discuss how to help GLGT adopt the system
2. Decide what to build next

* that's what tomorrow's for!
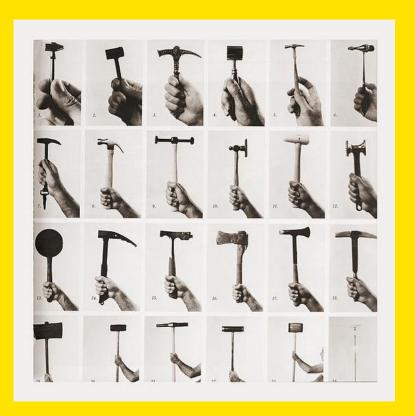
ACTIVITY	TIME
Part 1: What we built, what we tested	10 mins
Part 2: What we found	20 mins
Questions + discussion	20 mins
Part 3: So, what?	20 mins

PART 1

What we built,
What we tested

Creating an interface is a complex task. Interfaces are more than just **WORDS** and **PICTURES.** To improve on trip worksheets, we needed to understand how they actually work.

"If you wish to make an apple pie from scratch, you must first invent the universe."

— Carl Sagan, Cosmos

So we consulted our notes. We told a **DAY-IN-THE-LIFE SCENARIO** and identified **TOUR COSTING TASKS.** We studied **THE CURRENT TRIP WORKSHEET,** and invited tour coordinators to help us **REIMAGINE IT.**

Day in the life scenario, contd.

Next, she outlines a trip, one day at a time. When she's done, she reviews her itinerary against David's list of "must haves" and creates a summary of everything she's included.

Then Nicole costs the trip. She counts the number of paid attractions and meals she's included — nine attractions and 14 meals — and writes these down on a sheet of paper.
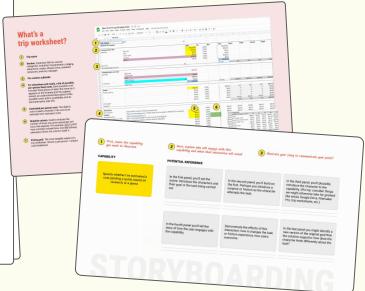
Nicole opens a trip worksheet up on a second monitor so she can cross-reference it with her itinerary. Estimating airfare is a nightmare, so she guesses what flights might cost. Then she pulls up an email she received from the hotel and estimates what each passenger will pay per night.

Nicole scans a list of expenses passengers might incur. She counted 23 paid activities and meals, so she looks for at least 23 rows. She bolds the list as she finds matches, and changes the quantity to one. However, the list in her trip worksheet isn't exhaustive, so she also needs to add rows as she goes.

Tour costing tasks

[Assume a created itinerary]

1. Create a place to keep track of cost estimates and documents/collateral (Google Drive + Trip Worksheet)
2. Estimate variable costs (such as most non-negotiables)
   a. Potentially review what a group we just booked is paying the week before/after
   b. Estimate headcount and number of buses, tour managers, etc. required
   c. Reach out for transportation and lodging quotes
   d. Review received quote to ensure it meets my group's needs (for example, the correct days, group size, etc.)
   e. Store received quotes for later reference
3. Tally up fixed, per person costs
   a. Count number of meals and attractions
   b. Find matching rows in the trip worksheet
   c. Highlight or bold the rows I'm using (or delete everything else — preferred!)

What is tour costing?

Tour costing is the process by which tour coordinators generate a proposal for what a trip will cost its paying travelers. It involves cross-referencing an itinerary and a trip worksheet while accounting for several factors:

- **Travelers:** The people going on the trip — most of whom are paying!
- **Comps:** People going on the trip for free.
- **Must-haves:** Non-negotiable trip components, such as clinics, conferences, comps, flights, etc.
- **Itinerary.** A planned route to one or more destinations. Itineraries include a sequence of activities such as attractions, meals — even instructions (for example "meet in the lobby at 3pm").
- **Kinds of costs:** Tour coordinators need to be mindful of variable vs. fixed costs
- **Inclusions and exclusions.** Things that were knowingly included or excluded from the pricing grid
- **Pricing grid:** The most material output of a trip worksheet, often broken down by the number of passengers taking the trip.
- **Proposal:** "An itinerary with a quote;" the customer-facing output of tour costing

As we studied their words we started identify tour coordinators' **GOALS** and **BEHAVIORS** in this context

Laura
Tour coordinator

Laura felt overwhelmed the first week she joined Green Light Group Tours: there was just so much to learn, including tools, destinations, templates, and standard operating procedures. Laura's colleagues told her to pace herself; GLGT's business is seasonal, they said, and she shouldn't expect to really step into her role — in terms of selling, planning, and managing trips — for at least year.

Now Laura is much more confident in her work. She sells trips to both recurring and new clients, and spends most days answering trip-related questions. Laura lives in her inbox, and facilitates her customer-facing conversations using email templates, itineraries, and proposals. She relies on Google Docs, Google Sheets, and Filemaker Pro to crunch numbers.

Goals (her desired outcomes)

- Help prospects design great trips, and deliver them
- Create itineraries illustrating how a trip might happen
- Provide comprehensive, competitive proposals
- Win repeat customers

Behaviors (how she achieves them)

- Communicate with customers (answer questions and provides advice)
- Collaborate with operations and customer success
- Plan itineraries; identify non-negotiables and find appropriate activities
- Complete convention information forms; track leads, deals, and notes
- Cost a trip
    - Duplicate and complete trip worksheet
    - Lock in non-negotiables (hotels, airlines, etc.)
    - Estimate costs using the worksheet itself, supplier websites, and/or FileMaker Pro
    - Ensure coverage
- Find alternative suppliers when plans change
- "Save a trip" after registration close

This led us to identify **USER REQUIREMENTS:** things people must do with our system to be successful.

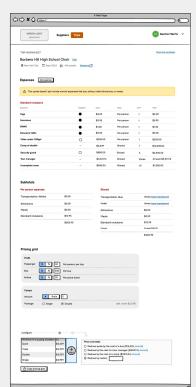# User requirements

With the system, tour coordinators must be able to

1. Track costs associated with a trip
2. Find a previously-costed trip
3. Generate multiple proposals for the same customer
4. Estimate what each activity will cost
    a. Access GLGT's price data
    b. Ensure coverage (cross-reference with an itinerary while counting expenses)
    c. Account for porterage fees, ticketing fees, driver's hotels, etc.
    d. Account occupancy-based hotel rates
    e. Complex expenses that depend on expenses that paying travelers incur: tour managers, comps, incomplete room budget, profit
5. Determine the number of buses, tour managers, comps, etc. a group will require based on its size
6. Determine whether a group size will generate sufficient profit
7. Create a pricing grid that
    a. Visualizes how a trip's package price will change in relation to group size
    b. Contains package prices that match (in terms of dollars) today's trip worksheets
    c. Is easily copied and and pasted (without much formatting) into GLGT itineraries
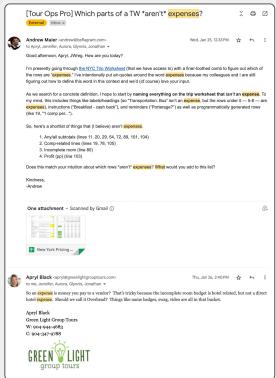8. See a list of the most probable expenses a NYC-bound trip is likely to incur

This list grew throughout the project
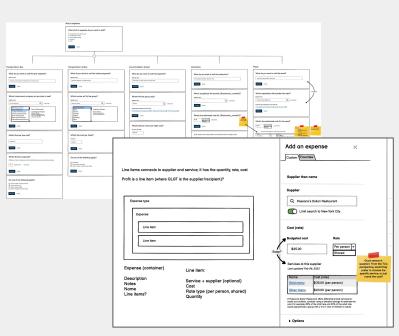
We will come back to this.

Then we started sketching. A lot. We believed our system would need to introduce **NEW CONCEPTS** — new words — to make things work. So we started asking questions, like "What's an expense?"

Our initial "add an expense" flowchart (in Balsamiq)
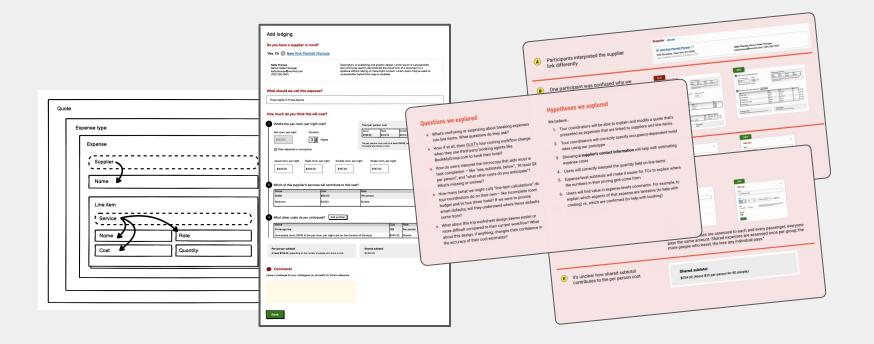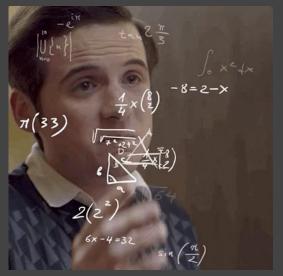
As our confidence increased, so did our interface's complexity. Users could create **QUOTES** and enter **EXPENSES**. Users could associate expenses with **SUPPLIERS**. expenses would contain **LINE ITEMS**. Line items had **RATES** and could connect to supplier **SERVICES** with known prices. To keep ourselves honest to solving problems in a user-centered way, we invited tour coordinators to conceptual usability tests every two weeks.

That's Numberwang!
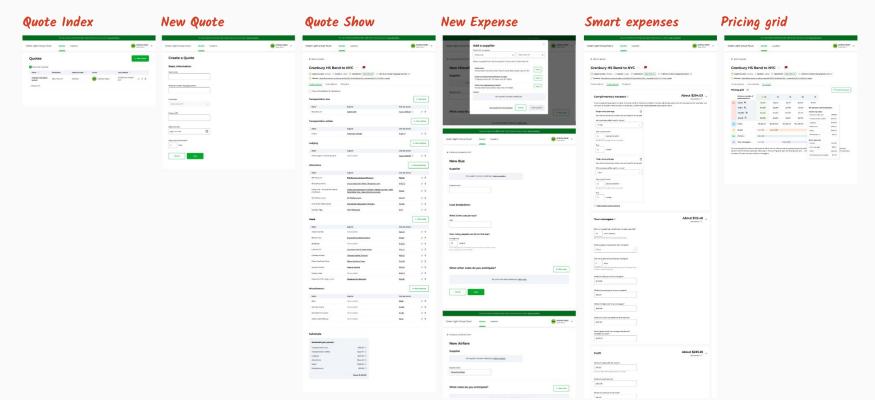
Eventually we arrived at an interface that feels, **TO US**, like a better way to cost a trip.

Quote Index

New Quote

Quote Show

New Expense

Smart expenses

Pricing grid

Groupcollect Quotes Visual Sitemap (in Mural)

> But do our users agree? At this point our system was built on so many **ASSUMPTIONS** that it was time to put them to a more rigorous test.

We assume

- Our conceptual model is intuitive

- Read-only access to FileMaker Pro data is enough

- Tour coordinators do not need to edit supplier data while costing a trip

- The right way to port GLGT's trip templates is to use them to pre-populate expenses

- If tour coordinators can cost a trip to New York City using our system, it will be straightforward to adapt it to their other destinations

- Tour costing is valuable independent of itinerary building

PART 2

What we found

"How it feels to watch a user test your product for the first time."
(via Jonathan Shariat on Twitter)

End-to-end test

- **Timeline:** Planned and conducted in mid-July 2023

- **Primary goal:** Determine whether the system met its user requirements, and if we needed to update them

- **Sample:** Five tour coordinators from GLGT, some of which were using the system for the first time

- **Method:** Think aloud; observers collected usability metrics; team reviewed down-selected from hand-picked observations. Observations later rephrased as errors.

- **Analysis:** Compiled usability metrics and pricing grids, collaboratively rated 25 usability errors

GroupCollect Quotes
Usability Test Plan

This document outlines a plan for conducting a summative usability test of a new system, GroupCollect Quotes, that aims to replace Green Light Group Tours' (GLGT's) trip worksheets for costing trips to New York City. See this strategy document and this kickoff presentation for more information on the context driving this work.

Table of contents

Findings

- **Positive:** Seven aspects of the system contributed to the user experience, including appearance, tooltips, and formula-free editing.

- **Ideas:** We heard (and generated) 14 ways to improve the system.

- **Task completion:** Of the 13 tasks tested attempted:

  - **Six were successfully completed (46%)**

  - **Three were successful with assistance (23%)**

  - **Four were not completed (31%)**

- **Pricing grid:** While four participants were able to successfully generate pricing grids, no grid matched the trip worksheet in terms of columns and package prices. Only one participant was able to successfully format their grid (20% of participants).

The system introduces several concepts that are difficult to learn unaided. Participants worried they might "mess up" the system by deleting templated (included-by-default) expenses, and were confused that the system appears to require more specificity in terms of naming expenses, suppliers, line items, etc. than GLGT's trip worksheets do.

Additional areas for improvement

- **Included-by-default expenses are difficult to remove.** Participants expressed a need to quickly add meals and attractions.

- **Supplier and pricing data is difficult to find, and outdated.** Participants left the system and found no return route.

- **It is difficult to browse suppliers while creating a quote.** The system's interface for finding suppliers does not adapt well to browsing suppliers — for example, by category or on a map.

Problem ratings

	Name	Description
	Minor	Some dissatisfaction, moderate delay, or superficial difficulty
⚠️	Major	Substantial dissatisfaction, delay, or difficulty
	Critical	Test participants abandoned their task. May cause some financial damage
☠️	Catastrophic	Threatens system stability and may cause substantial financial damage

Problems index

🥊 Minor problems:

1. The system's interaction model is somewhat different from trip worksheets.
2. The back button did not always work.
3. It is not easy for users to tell if they've successfully added a line item to an expense.
4. The system does not ask users to specify profit until after the point when they expect to do so.
5. Expense names are sometimes difficult to enter.
6. It is difficult to browse suppliers from the add/edit expense screen.
7. Templated expenses sometimes suggest a cost structure that cannot be followed.
8. Shared traveler costs are displayed in an unfamiliar format.
9. Pre-populated tour manager fields are easy to ignore.
10. The system prompts users to specify comp packages in a way that's different from how they normally work.
11. The pricing grid begins below the previously specified minimum number of paying travelers.
12. The pricing grid is labeled in terms of paying travelers, but actually accounts for all travelers.
13. Participants perceive the pricing grid as inflexible.

⚠️ Major problems

1. The system asks users to differentiate between expense name and supplier name when often just one of these is enough.
2. Templated (included-by-default) expenses are confusing, easy to ignore, and easy to delete — and deleting them can also delete important reminders.
3. Supplier records offer no return route.
4. It is difficult to find GLGT's price data.
5. It is difficult to enter floating point numbers.
6. The system-supported workflow for costing a trip's meals and attractions is inefficient.
7. It's unclear how the system calculates the cost of smart expenses.
8. The label for the tour manager's hotel budget is vague.

🛑 Critical problems

1. Lodging expenses do not clearly differentiate between room-specific costs and per-person or shared costs.
2. Occupancy-dependent room rates are unclear.
3. The system contains outdated data.
4. The pricing grid is difficult to paste.

Please jot down questions as they come to mind!

🛑 **Lodging expenses do not clearly differentiate between room, per-person, and shared costs.**

One participant accidentally added a porterage fee as a per-room cost rather than a per-person cost, which would result in an incorrect cost.

🛑 **Occupancy-dependent room rates are unclear.**

Participants misinterpreted this field as a way to manually enter nightly room rates that matched GLGT's current trip worksheet — they calculated by hand 25%, 33%, 50%, etc. of the room rate provided.

Related clip #1: A participant isn't sure whether the cost of the room includes taxes or fees, so she manually adds them to the hotel expense. She adds porterage fee as a per-room expense rather than a per-person expense (0:18)

Related clip #2: A participant isn't sure whether the $290 per night in the scenario is the cost per quad or cost per room. She clicks "Room cost depends on occupancy" and says "Yes, it depends on quad occupancy." (0:17)

🛑 **The pricing grid is difficult to paste.**

Participants devised several strategies for doing this, the most successful of which involved pasting unformatted text and creating an "empty" table. When they did paste them, tour coordinators struggled to format their pricing grids to their satisfaction.

Related clip #1: A participant manages to paste the grid into the itinerary, but struggles to format it to her satisfaction (0:25)

Related clip #2: A participant fails to paste the pricing grid into her itinerary in a way that's suitable to her. (0:34)

⚠️ The system asks users to differentiate between expense name and supplier name when often just one of these is enough.

The system prompts users to name suppliers for each and every expense, which caused participants to misunderstand how the system works and whether they could use it at all.

💡 Ideas

- Frame supplier choice in terms of its value to tour coordinators in costing an expense. For example "Name a supplier for help estimating what this expense will cost."

- Ask users to choose suppliers, but don't require them to choose a location. Only ask for location if that meaningfully affects cost estimates.

Related clip #1: The participant is exasperated. She attempts to add a meal to her quote, a cash-back breakfast, but can't decide what to put for its supplier. She guesses "breakfast" and "cash back" and ultimately abandons the task saying "It's not intuitive to me if what I'm doing is helping me or not" (0:38)

Related clip #2: After estimating the cost of bus, airfare, and hotel, a participant begins cross-checking the quote against the itinerary. She asks whether deleting an expense will "mess up" the system. When asked to explain her concern, she says she doesn't want to change their supplier; she'd rather delete the expense altogether. (0:35)

⚠️ **Templated (included-by-default) expenses are confusing, easy to ignore, and easy to delete; and deleting them can delete important reminders.**

The prototype prepopulated quotes with expenses that function as a combination of options to choose from and reminders to account for incidentals. Participants did not always understand this, and sometimes ignored these expenses or deleted them entirely.

💡**Ideas**

- Do not allow users to accidentally delete reminders that will cost them (and the company) money. Make these reminders an indelible, unavoidable part of the user experience.

Related clip #1: The participant sees the default bus expense, but not its total cost. She clicks "Show breakdown" and wonders where the default bus expense came from ("I'm kind of curious if I put that in there?") (0:55)
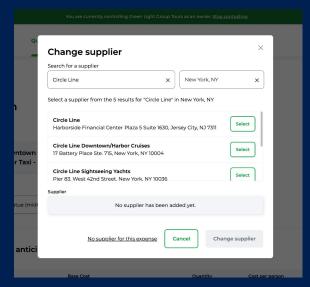
🥊 **It is difficult to browse suppliers while creating a quote.**

When asked to swap one lunch supplier for another, some participants edited their lunch expense and searched for an alternate supplier using the Change Supplier modal. Because this interface is limited to searching by supplier name, it doesn't allow for browsing. A few participants abandoned this interface in favor of the Suppliers Tab, which allows for filtering by supplier type and visualizes suppliers on a map.

💡 **Ideas**

- Adapt the Suppliers Tab interface for finding suppliers to the Add/Edit Expense screen

- Enable users to associate a supplier that is found in the Suppliers Tab with an existing quote.

The change supplier modal limits users to searching by known supplier name.

⚠️ **The system-supported workflow for costing a trip's meals and attractions is inefficient.**

Participants complained about needing to delete expenses one-at-a-time, the fact that deleting an expense required clicking through a confirmation dialog, and that the related animation caused them to lose their place. Participants were frustrated that adding/removing expenses changed the order of their list.

💡 **Ideas**

■ In follow-up conversation, the product team imagined exploring two separate "add expense" workflows: fast vs. slow expense-adding tempos.

Related clip #1: A participant pauses from her task (deleting unrelated expenses) to reflect on the list of meals that are included on the quote by default. She sees the parallels with the existing trip worksheet, but wishes the quote were empty by default. (0:21)

Related clip #2: A participant finds it difficult to keep track of her meals — which she's added and which she's yet to add — because the system reorders her list of meals (alphabetically) each time a new one is added. (0:22)

Expenses, slow and fast

One of the blessings of GLGT's trip worksheets is also a curse: Because the worksheet is a spreadsheet its **data and interface are the same thing.** While this makes it really easy for tour coordinators to look at a row that says "parking" and see it as a reminder, Groupcollect Quotes is not optimized around this behavior. Worse, implementing "reminder rows" as included-by-default expenses seemed to create too much friction for simple expenses (like boxed lunches), and these minders were easily ignored for complex expenses. How might we rethink this approach?

Across our sessions, the team noticed **two tempos, modalities, and/or lenses** through which we might think about adding expenses to a quote: slow and fast. "Slower" expenses require more thoroughness and/or ask more questions of tour coordinators.

Faster expenses, on the other hand, lend themselves well to pre-existing supplier data, and the kind of counting and cross-checking that tour coordinators are already doing (and asking for).

Hotel   Bus   Meals

0 Airline   Attractions

Slow   Fast

Suppliers Tab: Worlds Apart

Participants experienced significant friction as a result of our having built our system across two tabs: Where looking for and managing supplier data is done in the Supplier Tab, and creating and managing quotes is done in the Quotes Tab.

From a product-strategy level it's worth zooming out to ask whether Quotes and Suppliers are unique, orthogonal products that companies might pay for separately from one another. If not — if we see them as two parts of the same product — we might want to rethink using tabs to navigate between Quotes and Suppliers. This seems to be an arbitrary distinction that emerged from how we approached our work, and might not be the best pattern for meeting our users' needs.
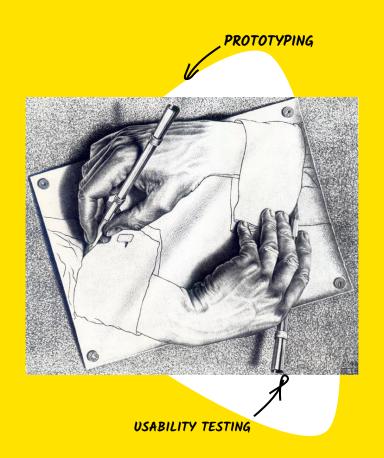
We assume

- Our conceptual model is intuitive

- Read-only access to FileMaker Pro data is enough

- Tour coordinators do not need to edit supplier data while costing a trip

- The right way to port GLGT's trip templates is to use them to pre-populate expenses

- If tour coordinators can cost a trip to New York City using our system, it will be straightforward to adapt it to their other destinations

- Tour costing is valuable independent of itinerary building
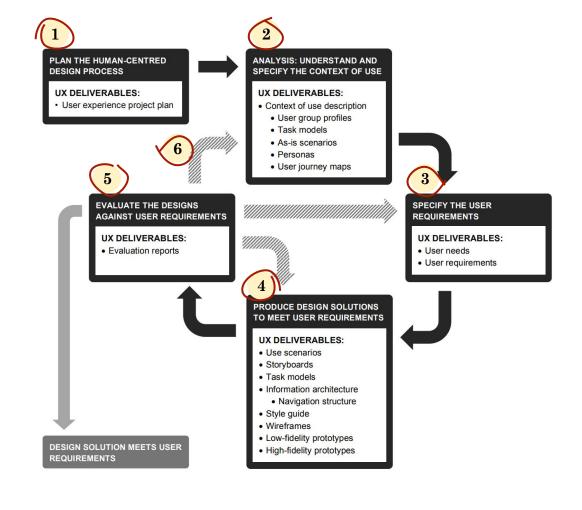
Take 2 minutes to silently generate questions, and then we'll make our way to

This Mural board ☞

PROTOTYPING

PART 3

So what?

USABILITY TESTING
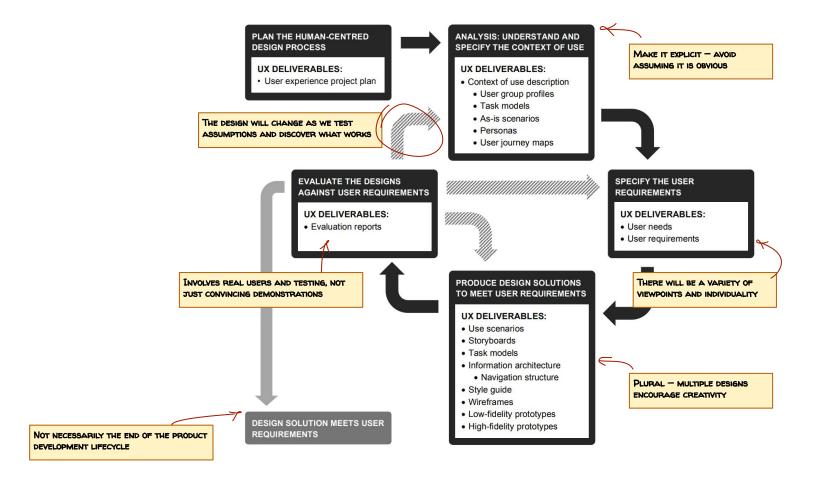
Over the past 30 years, the International Organization for Standardization (ISO) has maintained a standard called 9241, Ergonomics of Human-system Interaction, which depicts an iterative design process. There are *six* key components.

1

PLAN THE HUMAN-CENTRED DESIGN PROCESS

UX DELIVERABLES:
• User experience project plan

2

ANALYSIS: UNDERSTAND AND SPECIFY THE CONTEXT OF USE

UX DELIVERABLES:
• Context of use description
   • User group profiles
   • Task models
   • As-is scenarios
   • Personas
   • User journey maps

6

3

SPECIFY THE USER REQUIREMENTS

UX DELIVERABLES:
• User needs
• User requirements

5

EVALUATE THE DESIGNS AGAINST USER REQUIREMENTS

UX DELIVERABLES:
• Evaluation reports

4

PRODUCE DESIGN SOLUTIONS TO MEET USER REQUIREMENTS

UX DELIVERABLES:
• Use scenarios
• Storyboards
• Task models
• Information architecture
   • Navigation structure
• Style guide
• Wireframes
• Low-fidelity prototypes
• High-fidelity prototypes

DESIGN SOLUTION MEETS USER REQUIREMENTS

PLAN THE HUMAN-CENTRED DESIGN PROCESS

UX DELIVERABLES:
- User experience project plan

ANALYSIS: UNDERSTAND AND SPECIFY THE CONTEXT OF USE

UX DELIVERABLES:
- Context of use description
  - User group profiles
  - Task models
  - As-is scenarios
  - Personas
  - User journey maps

Make it explicit — avoid assuming it is obvious

The design will change as we test assumptions and discover what works

EVALUATE THE DESIGNS AGAINST USER REQUIREMENTS

UX DELIVERABLES:
- Evaluation reports

SPECIFY THE USER REQUIREMENTS

UX DELIVERABLES:
- User needs
- User requirements

There will be a variety of viewpoints and individuality

Involves real users and testing, not just convincing demonstrations

PRODUCE DESIGN SOLUTIONS TO MEET USER REQUIREMENTS

UX DELIVERABLES:
- Use scenarios
- Storyboards
- Task models
- Information architecture
  - Navigation structure
- Style guide
- Wireframes
- Low-fidelity prototypes
- High-fidelity prototypes

Plural — multiple designs encourage creativity

DESIGN SOLUTION MEETS USER REQUIREMENTS

Not necessarily the end of the product development lifecycle

Image: Diagram adapted from CPUX-F Curriculum

It's a warm, mid-September morning. **Nicole** grabs a cup of coffee and settles into her desk at Green Light Group Tours. She opens her inbox to find a request for a quote from David.

David is a Choral Director at the Barbers Hill High School in Baytown, TX. David would like Nicole's help taking a group of about a 100 choral students and four teachers to New York City to learn about Broadway. He wants to leave on March 13th and return on the 17th.

In his email, David includes a list of "**must haves**"

- Leave on Monday, March 13th
- Arrive home on Friday, March 17th
- Non-stop flights
- One free chaperone for every 10 paying students
- A hotel near Times Square, with breakfast at the hotel each morning
- Chaperones at double occupancy, students at quad occupancy

- The Blue Man group and two Broadway shows
- Some sort of musical theater workshop for the students
- A Freedom Tower Tour
- A four-day, unlimited subway pass
- Dinners at Ellen's Stardust Diner, John's Pizzeria, and a dinner harbor cruise
- Option to pay for insurance

Nicole reaches out to **hotels and airlines** to get quotes for the group. She finds a hotel that meets David's criteria, but the breakfast there is $38 per person, so she decides to give the group cash back instead. She looks up her point of contact at the hotel and reaches out for a quote.

Next, she outlines a trip, one day at a time. When she's done, she reviews her itinerary against David's list of "must haves" and creates a summary of everything she's included.

Then Nicole costs the trip. She counts the number of paid attractions and meals she's included — nine attractions and 14 meals — and writes these down on a sheet of paper.

Nicole opens a **trip worksheet** up on a second monitor so she can cross-reference it with her itinerary. Estimating airfare is a nightmare, so she guesses what flights might cost. Then she pulls up an email she received from the hotel and estimates what each passenger will pay per night.

Nicole scans a list of **expenses that passengers might incur.** She counted 23 paid activities and meals, so she's looking for at least 23 rows. She bolds the list as she finds matches, and changes the quantity to one. However, the list in her trip worksheet isn't exhaustive, so she also needs to add rows as she goes.

Having accounted for per person costs, Nicole considers fixed costs like parking, comps, name tags, insurance, swag, and a tour manager ("tour escort").

Finally, Nicole ensures that her trip will generate enough profit. She includes a margin of $200 per person, and double-checks that the "total profit for this trip" cell at the bottom of the sheet is at least $4000.

Nicole knows David will likely have some sticker shock when he sees her pricing grid, so she's keen to lower her estimate however she can. David wants to bring 110 people, so she *should* estimate three buses to be on the safe side... yet she *also* anticipates David fixating on the price in the column marked 110 (despite the fact the he will probably have fewer than 110 passengers). So, she fudges that number: she estimates for two buses rather than three.

Having planned and costed the trip, Nicole copies the pricing grid into her itinerary. She takes one last pass over it, looking this time for exclusions things she explicitly didn't include

Potential user requirements that we heard about

With the system, tour coordinators must be able to

1. Quickly (within 20 seconds) add frequently used meals and attractions to their quote, including cash back options
2. Abandon the system without losing progress (autosave while visiting supplier website)
3. Print a quote
4. Locate cash back expenses and remove them from their quote (saving a trip)
5. Optimize my pricing grid to extend a lower price

Let's take 2 minutes to silently generate requirements, and then make our way to

This Mural board ☞

Homework

- Where do you want the product to be at the start of the 2025 sales season?

- What real-world (ideally measurable) outcomes do you want to see for GLGT?

- What resources will we need to achieve those results — what's standing in the way?

Thank You!