

Conversation

Using natural language in your interface encourages users to interact in their own words.

Conversation design

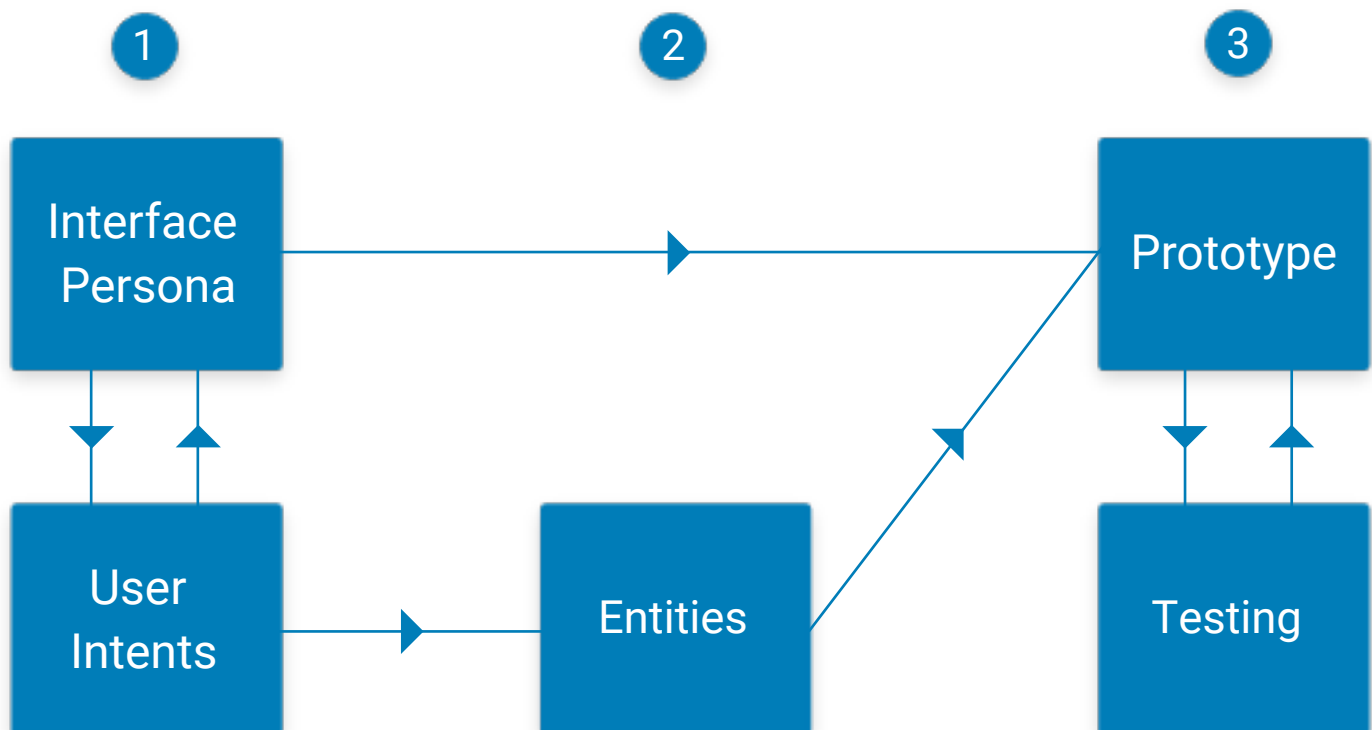
There are many unique considerations when it comes to creating virtual assistants, chatbots, and artificially intelligent customer service agents. Even for a seasoned content strategist or UX writer, the fact that there is a back-and-forth between the user and the interface and that the responses are immediate and dynamic means that the design process must be systematic and planned well in advance before writing a single line of dialogue.



A conversational interface accommodates users and allows them to express their commands and queries in the way that is most natural to them. It's not a menu or a command line. Keep in mind that speech interaction provides new and exciting opportunities for users with visual impairment or vision loss. Likewise, there is no reason why people who are hard-of-hearing or members of the Deaf community shouldn't be accommodated by allowing written input and output for a conversational interface. These types of users should be represented in the set of user personas from the very beginning of the design process.

The design process

1. Develop a persona for the conversational interface
2. Explore user intents, or use cases, through affinity diagramming
3. Determine the entities, or pieces of information, that users will seek and how the entities relate to one another
4. Write sample dialogues and trace ideal paths for conversational interactions
5. Test and iterate



Persona

Conversation is a dynamic and highly personal way of interacting. Language is very closely tied to emotion. As a result, users will naturally attribute characteristics of personality to a conversational interface, whether it is intended or not. Without consistency, the interface will give the impression that it is unreliable or unstable. If it's too formal, the persona may feel distant and unfriendly—too informal and it may appear childish or annoying.

The persona of a speech interface should be deliberately designed and consistent in its personification of the Dell brand. See the Writing Text article for more information about voice and tone guidelines. Keep in mind that, while we want users to feel that they are having a natural conversation, at the same time we also want them to have reasonable expectations for the interface. There should be no confusion that they are speaking to a conversational interface, and not a real person. This can be accomplished by avoiding giving the interface a human name or likeness, but instead thinking of it as an extension of the Dell brand.

Think about when its tone might need to shift. For example, if the user has a serious problem, how will the tone and demeanor of the persona change? What about after successfully completing a task? Consider a range of edge cases and stages of the user journey and how a shift in tone might be beneficial.

Design around these key points:

1. Introduction: The interface defines itself, makes a first impression, and onboards the user
2. Orientation: Clear expectations are set regarding the interface's purpose and capabilities
3. Action: How user goals and intents are navigated and resolved
4. Guidance: Conveying an accurate mental model of the interface to the user
5. Notification: How urgent and important information is delivered

Depending on the project, each of these stages should have shifts in tone and persona, even if it is subtle, to accommodate the user's intent, state of mind, and familiarity with the interface.

Linguistic principles

Drawing on the field of linguistics, it is essential that a speech interface follow Grice's Maxims: four rules that humans naturally follow when contributing meaningfully with one another in conversation:

1. Maxim of Quality: the contribution should be true
2. Maxim of Quantity: the contribution should only be as informative as is required
3. Maxim of Relation: the contribution should be relevant to the conversation
4. Maxim of Manner: the contribution's delivery should match the expectations of the user

It may seem obvious that the interface should be truthful, but there could be cases when you may be tempted to mislead or lie to the user by omission for the sake of convenience or to avoid delivering bad news. Likewise, do not say anything for which you lack adequate evidence. For example, don't design the interface to tell the user, "Your order is on its way," if you cannot be sure that is the case.

In terms of quantity, it's usually best to be as concise and brief as possible. Imagine how you feel when you're speaking to someone and you feel like you can't get a word in. Relatedly, be sure to provide adequate context and information for the user if they are being asked a question, and definitely do not ask a question and then keep on talking. If it's possible, allow the user to interrupt.

Center the user in any design consideration. Use context to determine the user's intent and to serve the desired information. Even if the user is unclear or technically wrong in the terminology that they use, serve their intent and not their literal query. Treat the user graciously. If they ask how much "memory" they have left on their computer, determine if they mean hard drive space or RAM. Users don't mind follow-up and clarifying questions, and those kinds of interactions actually lead to the perception that the persona is more intelligent.

Relatedly, we often respond to the intent of our conversation partners rather than their literal statement or question. For example, we interpret a question like, "Are you going to eat that?" as, "Can I have that?" This is called an indirect speech act, and a conversational interface should be prepared to handle them. Responses should always be in the context of the user's intent.

Take care not to violate these principles, even if the intent is to spare users from bad news or to delight them with a joke

Design and development

Defining and mapping intents

Intents are a user's goal. Each intent will have many different ways of being expressed by the user, which are known as utterances. After the persona of the interface has been defined, one effective method for creating intents and their respective utterances is to write down as many potential user questions and commands as possible onto notecards or sticky-notes. By grouping similar utterances with one another, you can begin to define your intents and how they might relate to one another.

Defining entities

If you think of intents as the verbs of a conversational interface, then entities are the nouns. Entities are data points or variables that your conversational interface will have to understand and handle appropriately. One way to source these entities is by looking at the utterances created during the intent-mapping stage. If a noun could be substituted for another, then that could be an intent. For example, if one of your utterances was, "What time are you open on Friday?" then it's equally possible that a user may ask, "What time are you open on Wednesday?" or any other day of the week. In this case, the day of the week is an entity that, if defined, can help make a conversational interface more efficient. Otherwise, you would have to create seven separate intents for each day of the week, rather than just one: "What time are you open on [day-of-the-week]?"

Mapping entities

At this point, you should be able to create a web of the different components of your conversational interface. It's important to remember that it should be based on users' mental models, and not a pre-determined hierarchy like a typical information architecture. Users' goals may change radically as they get information, and they may start in what you may consider the middle of a process. For example, they may attempt to add a purchase to their shopping cart before giving credit card information or a home address. Allow them to proceed in the order that is most natural to them whenever possible.

Create a visual representation of this web; it may reveal gaps or breaks in the flow of a user's journey, entities that have not been defined yet, or connections between entities that you haven't considered. It can also be helpful to diagram potential conversations a user may have with the interface as a kind of design asset before development begins. Map out all of the decision points and the paths that a user may take, including misunderstandings. This gives you the opportunity to design repair prompts to fix a potential breakdown in communication, or to phrase a question or option effectively so that the misunderstanding does not occur.

UI elements

It's important to design for both speaking and typing to take advantage of the fact that most of our personal devices are capable of both. Some devices have screens but not all, so make sure that any visual components of the UI are supplementary, and not necessary for a good experience. If a user is on a personal device, but in a public space, they may prefer to type rather than speak aloud—take care that the interface responds in the medium in which it was queried, unless the user specifies otherwise. For example, if they type, "What's the news?" they are most likely looking for news headlines. If they ask aloud, they are probably looking for a quick news update to be read to them. If they type, "Tell me the news," they may be looking for a read-out of the news while, for example, riding public transportation with headphones on—a situation in which someone may not want to speak out loud, but is looking for an audio response from the interface. For a range of situations and devices, here are some potential UI elements:



Images



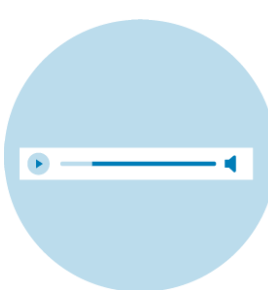
Cards



Links



Earcons



Pre-recorded audio



Type indicators



Simple text



Suggestion chips

Testing and iteration

Conversational design is an attempt to meet users where they are. Testing and iteration are crucial stages not just of the design process, but to maintain the interface long-term. Get users in front of the interface before and after launch. Conversation logs should be available to see when utterances are not matching up with their respective intents and where users might be getting frustrated or confused.

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