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Forward Thinking

When Conversational Assistants Meet: Delegating, Mediating, and Channeling



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Consumers speak and listen (and/or type into and read) to conversational assistants to obtain information, perform tasks, or be entertained, and these assistants are becoming widely used because they provide handy services to users when and where they are needed. Whether conversational assistants are embedded in your car, your mobile device, your home computer, your TV, or some other appliance, we rely on them for snippets of entertainment, information, and communication throughout the day.

There are many conversational assistants available, and many more are being developed all the time. Soon, every website will either become voice-enabled or become themselves a conversational assistant. Rather than compete for your attention, how can they be made to cooperate?

The Open Voice Network has explored the possibilities and established three patterns for how conversational assistants can collaborate: They can delegate, mediate, and channel. The table below summarizes these patterns with their descriptions and possible uses.

Pattern	Description	Possible uses
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Delegation	· Agent A gives control to Agent B	· Switch between agents: generalized agent, such as Alexa, gives control to specialized agent, such as Home Depot Shopping
	· Agent A is replaced by Agent B	· Switch between tasks: text-only is replaced by graphics · Switch between tasks: collect address information to collect order items
Mediation	· Agent A acts as user for Agent B	· Help-on-demand: Immediate help in current context when needed
	· Agent A receives “just-in-time” help from Agent B	· Common resources: dictionary, thesaurus, area codes, country codes, postal codes, weather info, stock quotes, TV guide · Time management: reminders, notifications · Task completion: form fill-in, repetitive task automation · Instant replay: what was I doing before the interruption
Channeling	· Agent A speaks for Agent B	· Recognition: voice brands and earcons
	· Agent A interprets what Agent B says	· Translation: between national languages · Audio adjustment: volume, gain, speed · Fraud prevention: voice authentication

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Delegation occurs when one conversational assistant gives control to another conversational assistant. Users switch between apps on their mobile devices and PCs by pausing one and invoking another, or simply making a switch. Users should be able to switch between the operations of various conversational assistants. Conversational assistants must support the typical human thought process of going from one topic or activity to the next—for example, a shopping assistant giving control to a payment assistant after checkout.

Mediation occurs when one conversational assistant acts as a user of another conversational assistant. Just as users call upon experts to help them with complex problems, a conversational assistant should confer with other conversational assistants. Mediation enables just-in-time help whenever and wherever needed. An example is instant replay—replaying the conversation just prior to an interruption to remind the user what he was doing.

Channeling occurs when one assistant speaks for another. Some assistants can modify the voice characteristics of another voice assistant. For example, a channeling assistant slows the audio rate for non-native speakers or cognitively impaired speakers or increases the audio volume for the hearing impaired.

Delegation, mediation, and channeling of conversational assistants are three patterns that occur frequently in interoperable systems. The patterns are useful especially when applied universally. Examples include translations between Spanish and English for all conversational assistants and automatic answers for frequently asked questions, such as contact information required by shopping applications or information-request applications.

As you create conversational assistants, think about how the operations of your assistant could be made simpler by switching to those of another rather than trying to do everything within your assistant; how to structure content for reuse as just-in-time mediation for other applications; and how your assistant could benefit from content modification, such as translation or other universal channeling services.

The Open Voice Network (<https://openvoicenetwork.org/>) welcomes suggestions about these and other patterns that can occur when using interoperable conversational assistants. For more information about delegation, mediation, and channeling, see “Interoperability Architectural Patterns—Initial Thoughts” at <https://openvoicenetwork.org/docs/interoperability-architectural-patterns-initial-thoughts/>

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