
Business and pleasure? Relational interaction in conversational UX

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Abstract

In current conversational agents, productivity-oriented interaction and relational interaction are strictly compartmentalised. We suggest that UX in future conversational agents may benefit from a more integrated approach to these two forms of interaction. The suggestion is backed by reference to existing studies. Future directions are suggested.

Author Keywords

Conversational agents, relational, productivity-oriented

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

Introduction

Conversational UX depends on effective and efficient task completion, fitted to the requirements of the user and the constraints of the context of use. But delivering effective and efficient interactions is only a first step towards realizing the potential for engaging user experiences in conversational user interfaces.

While researchers and practitioners in areas such as web and mobile app development since long has recognized the need for UX design that go beyond mere effective and efficient task completion, UX design of

conversational agents seems to not keep up in this regard. Specifically, we argue that while conversational agents may include relational interaction; that is interaction with the purpose of providing a playful, emotional, or social experience, such interaction is not integrated with the core productivity-oriented features of conversational user interfaces. Rather, productivity-oriented interaction, that is interaction with the purpose of effective and efficient task completion, is typically demarcated from relational interaction; which create a compartmentalisation in UX design.

In this position paper, we raise the question whether and how relational interaction should be integrated in productivity-oriented interaction, to potentially generate added value in UX design. In making this argument, we first provide a brief overview UX research and practice, contrasting this to the preceding concern for usability. We then review a small number of studies providing insight into what users want from conversational interactions, and contrast this to what we refer to as a compartmentalization of UX in such interfaces. Finally, we suggest some future directions for research and practice in conversational UX design.

UX – beyond effectiveness and efficiency

Historically, the concern for UX in human-computer interaction (HCI) was a reaction to an initial usability obsession within the discipline. This early obsession was warranted. Interaction breakdown, following from inadequate effectiveness and efficiency in interaction, entailed substantial loss in workplace productivity and consumer revenue [2]. Nevertheless, in the early 2000, it became increasingly clear to HCI researchers and practitioners that great usability alone is not sufficient to capture user engagement and interest. Hence, the

broader UX construct was increasingly acknowledged; in particular, for consumer software, in areas such as gaming, shopping, entertainment, and media content.

UX concerns designing for something more than objectively observable performance goals; aiming beyond the effectiveness and efficiency of an interactive system. Of course, UX also encompass the classical usability constructs of effectiveness and efficiency [1]. But in addition, UX design also entails pleasurable, emotional and relational aspects [5]. Specifically, UX puts more emphasis on the subjective or phenomenological aspects of using interacting systems [6]. Designing for UX in conversational agents require us to understand what users want from these, and how these are perceived. The current literature provide some insight on this.

What users want from conversational agents

There is a duality in what users want in conversational agents. Users expect effectiveness and efficiency in productivity tasks. At the same time, they appreciate interaction of a playful, emotional or social character. Three recent studies address this duality.

Luger and Sellen [8] presented an interview study on user experience of conversational agents such as Siri, Alexa, and Cortana. Users reported these to be mostly used for simple productivity tasks such as checking the weather forecast or setting reminders. Failure in achieving effectiveness and efficiency in productivity tasks was seen as a source of frustration. At the same time, nearly all users in the study reported to also have engaged in playful interaction with their conversational agents, seeking out pleasant or humorous features of the conversational agents. The use of humour and social

smarts in conversational agents were discussed by Luger and Sellen as a source of pleasure, but also as a source of misguided expectations of system capabilities.

Zamora [12] studied users' expectations and experiences with text-based and voice-based conversational agents during their first fourteen days of use. Effectiveness and efficiency in productivity tasks were key expectations, and users were often frustrated as these expectations were not consistently met. At the same time, participants expressed an interest in the agents as a means to fulfil emotional needs and envisioned conversational agents as a potential source of motivation, or as someone that can listen; as a substitute for a person to talk to. The participants noted that it may be easier to talk to a chatbot about sensitive issues than a fellow human as the chatbot was perceived as not judging.

Brandtzaeg and Følstad [3] presented a survey study on user motivation for voice-based and text-based conversational agents. For most users, effective and efficient accomplishment of productivity tasks was reported as the main motivation. However, a substantial proportion of the participants reported entertainment or social factors as main motivation. Some even reported certain conversational agents to help reduce loneliness or support socialization.

These three studies provide a highly congruent view on expectations and experiences with conversational user interfaces. Users typically expect or aim for effective and efficient completion of productivity tasks. At the same time, users appreciate the opportunity for playful, emotionally engaging, or socially stimulating interaction in conversational user interfaces. Interestingly, while failure

to complete productivity tasks seems to be a key turn-off, playful, emotional, and social interaction was typically seen as a contributing positively to the user experience.

When this is said, relational interaction may also entail challenges and pitfalls. Human-like or "street smart" interaction may lead users to believe that the conversational agent to be more intelligent than it actually is, potentially paving way for use of colloquial expressions (which may increase the change of interaction breakdown) or unrealistic expectations regarding system capabilities. Hence, while relational interaction may be a means to strengthen the user experience in conversational interaction, it is a means that needs to be used thoughtfully to avoid backlash.

Finally, it should be noted that other characteristics of a conversational agent than its capacity for relational interaction may strengthen UX. E.g. personification through agent name, gender, and voice. A recent study of Amazon Echo reviews suggests that users who use more personified characteristics of the agent Alexa also reported higher levels of satisfaction [9].

The compartmentalization in UX design for major conversational user interfaces

Given that relational interaction may strengthen conversational UX, one would expect this to be an integrated part of conversational interaction design.

Thies et al. [11] demonstrated the benefit of such integration. Three chatbot personalities were tested in a Wizard-of-Oz approach. Users appreciated chatbot personalities that supported productivity while also being fun, friendly supportive, and empathic.

Successful combination of a productivity-oriented conversational agent with pronounced relational interaction is also exemplified in Woebot [4], a text-based therapeutic conversational agent. Relational interaction is provided through empathic responses, emojis and imagery, and personalized messages.

However, in the conversational agents from the major tech companies, Siri, Google Assistant, and Alexa, there is precious little of integration of productivity-oriented interaction and relational interaction. Consider the following examples:

User: *Alexa, play Eminem on Living Room*

Alexa: *Playing Eminem from Spotify on Living Room*

User: *OK Google. Directions to Oslo Central Station?*

Google Assistant: *Oslo Central Station is 17 minutes from your location by car in light traffic. Here are your directions.*

User: *What will the weather be like tomorrow?*

Siri: *There may be some snow tomorrow.*

All these are great examples of how conversational interfaces successfully strengthen productivity. However, the same examples may possibly hold opportunities for relational interaction not yet realized. Could, for example, Alexa strengthen relational interaction by responding in a manner reflecting my mood when requesting music for leisure? ("Sure thing. Kick back and enjoy Eminem from Spotify on Living Room" – preferably changing her choice of words slightly from time to time). Or acknowledge our relationship by remembering my current favorite music

of the week? ("Last night, you listened to Believe by Eminem. Would you want me to play that now?").

Likewise, could Google Assistant strengthen relational interaction by once in a while suggesting a follow-up action? ("Anything else I can do for you, Sir" or "Please let me know if you want me to start that navigation"). Or maybe just acknowledging that it was happy to see me? ("My friend, good of you to call in. This route suggestion I'll fix in no time.") Or, would my relational bond to Siri strengthen if she made fun suggestions for what I could use the snow for? ("Maybe there'll be enough snow to make a snowman. Make sure to send me a picture if you do."). Maybe interaction with elements of surprise, playfulness, or relationship building could, in some use-cases, enhance the user experience of productivity-oriented interaction and, hence, the agent?

Note, however, we are not suggesting that relational interaction is not supported in current conversational agents. Far from it. For example Siri is brimming with "Easter eggs"; that is, quirky responses on specific user requests. Just ask Siri to tell you a joke ("I prefer to be Siri-ous") or laugh at her response to a request for dividing 0 by 0. Likewise, Alexa can boast a broad lineup of skills meant to be entertaining only; evoked for example by "Alexa, pretend to be a super villain" or "Alexa, tell me a bedtime story".

However, as opposed to the chatbot personalities explored by Thies et al. [11] or the quirky but helpful dialogues of Woebot [4] the productivity-oriented interaction and the relational interaction is highly compartmentalized. Either, the conversational agent is helping you, or it is amusing you. Business or pleasure; never both at the same time. Could it be that for some

use-cases, such compartmentalisation leads conversational UX design to disregard opportunities for creating great user experiences?

Currently, the best conversational user interfaces may be those that provide great usability [7]. In the future, successful conversational user interfaces may possibly also need to master the integration of relational and productivity-oriented interaction.

Now what? Suggestions for future directions

There may be a number of reasons why conversational user interfaces do not mix business and pleasure in interaction, but see productivity-oriented interaction as something distinct from relational interaction.

One reason is that of clarify and reduction of error and misunderstanding. Conversational user interfaces are still prone to breakdown in the interaction due to interpretational issues on the side of the user or the side of the conversational agent. Integrating relational interaction may increase the interpretational challenge. Another is the primacy of effectiveness and efficiency as goals for conversational UX design. Given that most users see conversational user interfaces as means to effective and efficient productivity support, there is not reason to clutter the dialogue with relational content. Finally, there is the challenge of relational interaction leading to unwarranted expectations in terms of the capabilities of the conversational agent.

It may be that future conversational agents will benefit from integrating productivity-oriented and relational interaction. For this to happen, however, HCI researchers and practitioners will need to find modes of interaction that balances the integration of productivity-

oriented and relational interaction in such a way as to reap the benefits while avoiding the challenges of this integration. Specifically, we find the following future directions relevant to this purpose:

1. Explore how to enhance conversational UX design by integrating relational and productivity-oriented interaction. A key challenge for future research will be how, and for which use-cases, this can best be achieved in conversational agents.

2. Adapt conversational UX design to the preferences of the user. Some may prefer a chatty or witty conversational agent, others a reserved servant. Preferences may be contextually dependent. Exploring how to adapt agent personality to user and context entails interesting challenges and opportunities.

3. Investigate effects of relational interaction on engagement and retention. Can integration of relational and productivity-oriented interaction serve to strengthen user loyalty?

4. Research means to mitigate unduly inflated user expectations caused by anthropomorphism and relational interaction abilities. Specifically, making the user aware of the agent's limitations, while at the same time sustaining the relational interaction.

5. Consider ethical challenges of relational interaction. Studies on virtual agents as therapeutic interviewers have suggested that users may in some situations be more prone to opening up to a conversational agent than to a fellow human being, as the conversational agent is not seen as judging [10]. Hence, relational interaction may unintentionally make users share without sufficient concern for privacy.

Effectiveness and efficiency is highly prioritized in conversational UX design, and rightly so. The usability of conversational agents is critical for a broader uptake and sustained use. Nevertheless, given the potential benefit of considering other UX aspects in the design of conversational interface, we have suggested the need to considering whether and how to integrate productivity-oriented and relational interaction in conversational agents. We hope that this position paper can serve as a starting point in the important discussion on how to move from today's compartmentalisation of productivity-oriented interaction and relational interaction, to a future where these two interaction forms are more blended; mixing business and pleasure.

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