

An Investigation of Remote Pet-owner Interaction System

Abstract

The common pet-care solution for busy or traveling pet owners is to send them to a fostering organization or home. The is existing research evidence showing pet owner’s potential requirements on having remote communication or interactions with their fostered pets. ACI research groups over the world have also proposed numbers of technical solutions for developing such a system.

While the are many relevant papers in this domain and many design considerations have been discussed, there is little evidence showing the role of pet sitters have been taken into the design consideration for the systems.

This paper aims to investigate on pet sitters motivations, concerns, and preference over the existing technical solution types. By far the solutions can be categorized into three groups, which are video communication system, GPS service, and lifelogging. To investigate this, we will conduct an online survey supplemented with interviews in the target audience group.

The results show that most of the pet sitters willing to support and participate in the remote communication and they would value more of the actual interaction with the pets. Given the background research that we have conducted before the investigation, this is the first time that pet sitter’s ideas over the pet-owner remote interaction system are investigated. The insight gained from the study will be used the future design of a remote interactions system.

Relevant Technologies

Apart from a Skype audio-video system, projects also introduced a remote interaction console, including a sound panel, laser pointer, and a virtual animated object. [2]

The tracking device is an existing product that normally mounted on the pet’s collar to give their owner real time location. It is often the case for working dogs such as hunter or rescue dog[3]

Cat@log is a lifelogging system designed in 2009. It uses a combination of camera, sensors (such as accelerometers, and GPS), and a network-enabled computer to support communications between cats and humans. [4]

From the pet-sitters’ perspective

Background

Pet owner requirement

In 2013, Neustaeder et al. launched a research about owners’ requirements in having a technology solution to support their remote interactions with their pet.



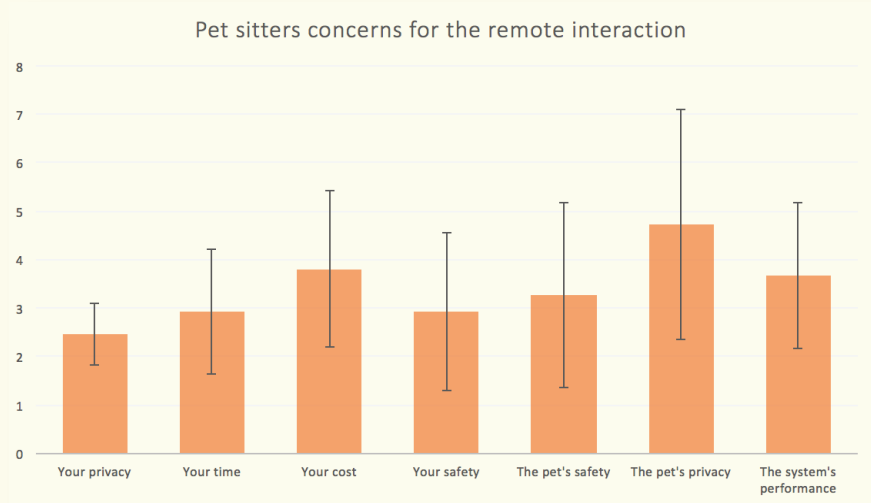
For traveling pet owners, the research shows that there are over 91% of respondents wanted details of their pets and about one-third of pet owners interest in remotely seeing or talking to their pets while only a small amount of respondents expressed their wishes to play or touch their pet in a distance.[1]

Survey

The survey received 15 responses, the age of the respondents ranged from 18 to 44. Over 46% of respondents said they have the experience of being a pet sitter, while over 86% of respondents expressed that they wanted to become a pet sitter in the future. Over 86% of participants would agree to use the electronic communication system to help pet owners to see or interact with their pet, and 61% of these respondents think they are very likely to agree.

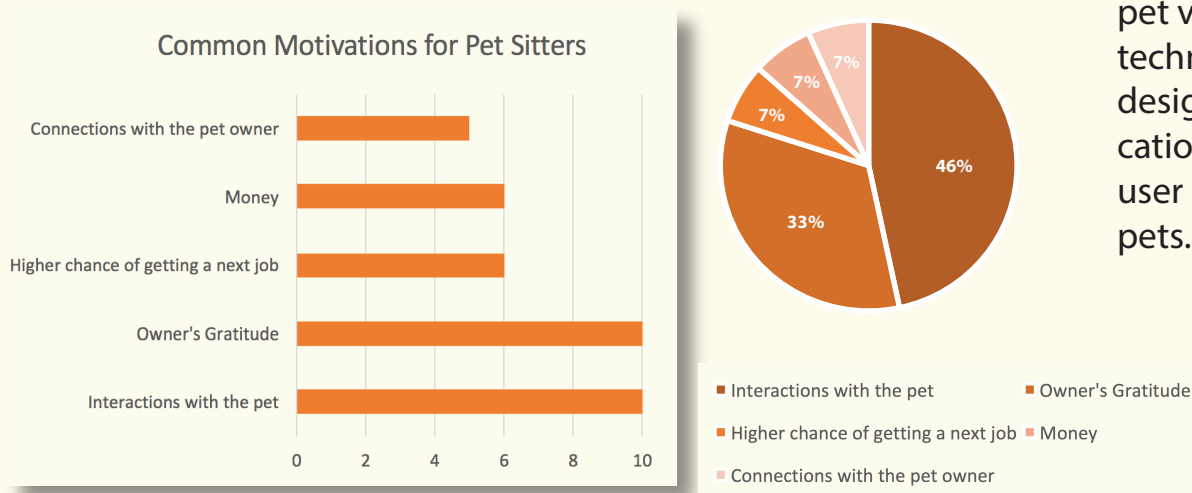
Motivations for Participation

The participants were asked to rank their top concerns for helping owners with the remote pet interaction. The rated concerns from the most significant to the least significant are pet sitter’s privacy, time, safety, the pet’s safety, the cost, the system’s performance and the pet’s privacy (Shown in figure 2)



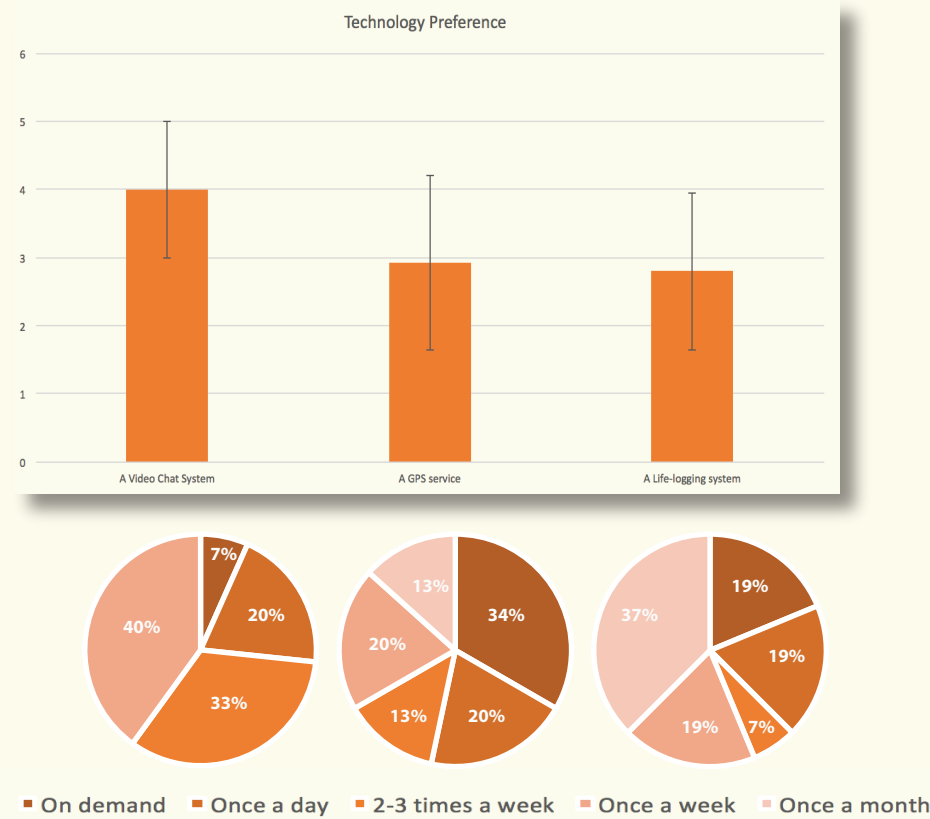
Motivations for Participation

The two most popular motivation chosen are ‘Owner’s gratitude’ and ‘Interaction with the pet’ which both received 66.7% of the vote. ‘Money’ and ‘Higher chance of getting next job’ came at the second place and are both 40%. Amongst the listed motivations, ‘Interaction with the pet,’ 46.7%, has become the first important motivation while followed by ‘Owner’s gratitude,’ 33.3%.



Preference over Technologies

The video chat system is the most widely accepted system. It has an average of 4 where one has the lowest preference, and five has the highest. This result gives us an insight that a VMC system is worth for further investigation. Participants also were also prompt to give an estimation of the frequency of using these system to help pet owners. The results are shown in the lower three pie charts



Interview

In addition to the designed survey, formal interviews were also used to gain further insights into future design of a pet remote communication system. The interviews were conducted simultaneously with the survey, but interviewees were asked to give their reasoning behind the selected answers.

“Pet sitting is more of a hobby for me than a real career. Therefore, money is more like a bonus but it might affect my decisions of choosing a pet caring work.”

“I can imagine that it will be safer if the GPS is not on real-time base but provided to the owner as a daily or weekly summary.”

Conclusion

As expected, privacy is the major concern as the carers will expose to personal information disclosure if they sign up to video chat or logging and location-based service. To pet carers, live video chat becomes the most acceptable choice as they could exert better control over what information would be shared with the other party. Apart from the controls interviewees mentioned in the research, other privacy protection approaches could also be taken, such as extracting the pet video image by motion or depth sensors. These technologies can be used for the future system design. For the next step, a video-mediated communication system will be designed and tested with target user groups including pet owners, pet carers, and pets.

Reference

[1] Neustaedter, C. and Golbeck, J. Exploring pet video chat. Proceedings of the 2013 conference on Computer supported cooperative work - CSCW '13, (2013).

[2] Golbeck, J. and Neustaedter, C. Pet video chat. Proceedings of the 2012 ACM annual conference extended abstracts on Human Factors in Computing Systems Extended Abstracts - CHI EA '12, (2012).

[3] Paldanius, M., Kärkkäinen, T., Väänänen-Vainio-Mattila, K., Juhlin, O. and Häkkinä, J. Communication technology for human-dog interaction. Proceedings of the 2011 annual conference on Human factors in computing systems - CHI '11, (2011).

[4] Yonezawa, K., Miyaki, T. and Rekimoto, J. Cat@Log. Proceedings of the International Conference on Advances in Computer Entertainment Technology - ACE '09, (2009).