Poster: Digital Inheritance: Third-party digital asset management

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Abstract— **A person's digital possessions are just as valuable as their physical possessions. In the event of death or other tragic events, the original owner is unable to care for the assets any longer. In order to ensure that these belongings aren't lost in the physical world, these items gain new owners, or are inherited. There aren't any ideal means for handling this type of situation in the digital space. The process of transferring ownership over digital assets can become overwhelming. Digital assets can include photos or videos on a hard drive, social media accounts, e-mail accounts, financial accounts, online shopping accounts, etc. The awareness for this issue is being brought to the attention of the general public [1], but there still isn't an easy way to manage all of a person's digital assets.**

This poster paper proposes a third-party service for digital asset management to make the process of transferring ownership of digital assets easy. A Third-Party Digital Asset Management Service (DAMS) is proposed to facilitate the transfer of ownership between the original owner, the services containing the digital assets, and the new inheritors of the assets. All of the assets are consolidated and can be managed in one service.

Keywords—digital inheritance, digital assets, Digital Asset Management Service, digital inheritor, digital executor

I. INTRODUCTION

More and more of a person's life is shifting from the physical world into the digital world. A person's digital possessions are becoming just as valuable (or maybe even more-so) as their physical possessions. Technology is finding its way into more facets of our lives and as a result, many of our day-to-day tasks, social interactions, and memories are replaced with usernames and passwords, social networking websites, and personal files.

In the event of death or other tragic events, the owner may have wanted the digital assets to be passed on to another person. However, the process of dealing with each service, each of which may have a different procedure, can take a very long time.

Facebook allows the option for a "legacy contact" who can make the page into a memorial page and gain access to the account [2]. Twitter doesn't allow access to a deceased account at all; only the option to deactivate the account [3]. Google has an "Inactive Account Manager" feature which allows users to designate what happens to each of their Google service if they have been inactive for a long time [4]. Every service is different and some may not have the functionality of transferring ownership at all.

There is a need for an easier way to manage all of a user's digital assets. I propose a third-party service which acts as a facilitator between a user and the services they use. It consolidates all of their assets and makes the process of transferring accounts effortlessly.

II. RELATED WORKS

There is a company called SecureSafe, and others like it, which provides this type of service for its customers for a fee. The owner uses a web interface to upload files and stores usernames and passwords. When the time comes, a trusted person who is designated by the owner, called an Authorized Activator, starts the transfer process. After 15 days, if the owner doesn't stop the process, the inheritors gain access to the data left to them. This company provides the tools to allow someone to pass on their digital possessions, but it doesn't make it easy. Expecting a user to make a new upload every time they have something worth saving, or make a change to their password is asking too much. An automatic solution would be much simpler and user-friendly for the owner.

III. PROPOSAL

This proposal is for a Third-Party Digital Asset Management Service (DAMS) which helps a user to manage all of their digital assets and accounts. This service co-ordinates with a user's different digital accounts to designate new/additional owners for each of the accounts. This requires collaboration from each of the different services a user is using.

First, the user must make an account with the DAMS. Using this account, they are able to link different services to their account and manage each service and the users, or "inheritors", who will gain access to the different services after the transfer. All of a user's different services can be managed this way including the user's operating system which may contain photos, music, login accounts, etc. Other services could include e-mail accounts, social media accounts, financial accounts, etc. All of a user's digital assets are consolidated into a single service which makes it easy for the user to manage. The inheritors along with the assets they inherit can be changed at any time.

In the event of an emergency, or any other reason why a user may want to transfer ownership of their accounts, a designated trusted user will initiate the transfers. In the same way that a person manages a person's physical assets in the physical world, a user trusted by the owner will set the motions in place to begin the transfers of the accounts. This user, the "digital executor", is selected beforehand to initiate the process that the owner cannot. This user must be chosen carefully and should be someone that the user trusts with their digital assets. The owner may or may not give the executor the ability to change the access rights of the inheritors of the services. However, the base role of the executor is very important. Once the transfer process is started, the owner is informed by e-mail that the process has begun. If this is done in error, the owner is able to stop the process within a time period that is previously set.

A message is then sent to each of the owner's services, requesting for the transfer of ownership to take place. An e-mail is sent to each of the inheritors along with a temporary password to access the accounts.

Every service would be able to support this third-party service. In the same way that some services allow for a back-up e-mail address during sign-up, support for this service would introduce an additional step where a user could designate another e-mail for this service. This could be introduced to the user as a "back-up" or an "in-case of emergency" e-mail. It must then be clearly stated that this user would gain access to the account.

The inheritor of the account may not gain complete access to the account. The service may support partial ownership; access to certain designated functions. It may also support multiple users with access. All of this would be designated during the sign-up phase or may be changed at a later time through the DAMS. The implementations of these features are dependent on the services' discretion. Inheritors of an account do not need to have an account with the DAMS; however it is recommended. They just need to have access to the e-mail address that was designated by the previous owner.

IV. FUTURE WORK

The ownership of digital assets that are extremely valuable so the privacy and security of this service is of extreme importance. My future work will be to design an architecture which is able to function securely and privately in order to ensure that the digital assets are protected exactly in the manner that the owner desires.

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