Delegation in FinTech: Supporting the Supporters

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Abstract

We investigate popular FinTech apps and services in the Apple App Store and the Google Play Store to investigate the prevalence of delegation support. Delegation is important for users who need occasional, regular or permanent assistance with financial management tasks. Delegation should work in concert with accessibility features so that users who need accessible design can also assign delegates using accessible interfaces.

Keywords

Financial Delegation, FinTech, Accessible FinTech

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1 Introduction

Financial technologies, commonly referred to as FinTech, span a wide-ranging array of applications that cross a variety of platforms: mobile, web, desktop and even voice-assisted platforms such as Alexa and Google Home. These applications allow people to engage in activities as simple as watching stock prices, and monitoring bank balances and as sophisticated as trading cryptocurrencies or managing large portfolios of investments for clients. A quick search on Apple's App Store and the Google Play Store reveals hundreds of different FinTech apps available for users, with some having global reach and others having utility only within particular jurisdictions. While HCI researchers have investigated and innovated in this area, thus far little attention has been paid to the accessibility of FinTech apps, even though financial management is considered an important 'Activity of Daily Living' or ADL [11]. Enabling users with accessibility needs to engage with FinTech promotes independence and can therefore improve their quality of life.

While building support into FinTech apps for accessibility, a complementary concern is to build in support for delegation, so that users who are unable at certain times to manage their own finances can appoint a trusted family member or friend to assist them with these tasks. Prior research has shown that in the case of older adults, the support person who assists is also themselves an older adult [10]. While many older adults have uninhibited capacity, aging

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does often lead to physical changes such as macular degeneration or other vision limitations as well as decreased hearing. Some older adults experience limitations in their hand-eye coordination or hand tremors due to arthritis or other afflictions, leading to challenges with technology use.

2 Background

There has been limited research on accessibility of financial technologies. Erazo and Zimmermann demonstrated a simplified banking interface for individuals with cognitive impairment [5]. Financial abuse is a critical concern for individuals with diminished cognitive function, and while Howard et al. have developed an app to help individuals with intellectual disabilities recognize abuse, their app is more focused on sexual and physical abuse [8] - more focus is needed to ensure such individuals are able to recognize and report financial abuse, especially when they get help with finances.

As of 2022, 78% of Canadians bank online, an increase of 6% from 4 years prior. For older adults the percentage who bank online has increased more rapidly, from 44% to 58% over the same period [4]. This means for the first time, a majority of older adult Canadians are banking online. Jin and Fan showed that mobile banking is increasingly common among older adults in China as well, but noted some issues with the interfaces related to poor error recovery and exacerbated by age-related motor issues [9]. Banking online can bring about a wide array of accessibility challenges beginning with the authentication process as noted by Hayes et al. [7] and Briotto Faustino and Girouard [2]. Monitoring finances is a common task, and is often supported through the use of dashboards provided in FinTech apps. However, many interactive data dashboards are not accessible. Srinivasan et al. have introduced Azimuth, a screen-reader accessible dashboard that could be usefully applied in FinTech apps [16].

Management of finances has been shown to become more difficult as older adults age [1, 12]. These difficulties, combined with limited technological comfort [13] and/or accessibility barriers may lead some older adults to seek help from close others with banking tasks. Older adults in Canada often leverage help from friends, family members, or other sources [10]. Those who receive banking help are doing so every 2-3 weeks on average, primarily with less than 3 total hours of investment on the part of their close others per month [17]. Unsurprisingly, older adults who are experiencing cognitive impairment such as Alzheimer's Disease or dementia leverage assistance more frequently than those not experiencing such conditions [3]. In it's simplest form, this assistance may be a family member walking through the required interactions in the online banking system with the older adult. On the opposite end of the spectrum this can involve adding a close other as a joint account holder thereby allowing the delegate to manage the account with equal legal authority and no restrictions. A Statistics

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Canada report shows that over 25% of adult Canadians use online banking to support an older adult [17] however our previous work has shown that older adults heavily rely on the use of password sharing [10], which can expose them to the risk of financial losses due to misconduct by a close other acting as a delegate [15].

Delegation is supportive and an important component that can make FinTech more accessible to individuals with accessibility challenges, but there is a need to design FinTech apps so that delegation can be set up explicitly with limits on delegate actions. Our recent work has shown the power of proxy accounts to support delegates and provide transparency and accountability when they bank on behalf of older adults [6]. We see delegation as complementary to accessibility - while accessibility features may enable individuals to bank independently more frequently and with more ease, we contend that everyone needs assistance from others at least occasionally and formal delegation mechanisms are more likely to provide the security and privacy that are crucial in financial delegation. We also note that accessibility is important as a part of delegation; if a FinTech supports delegation, the setup process for enabling a delegate to perform financial transactions needs to be accessible so that users with accessibility challenges can succeed in setting up delegation. To explore this, we are investigating whether and how current FinTech services support delegation.

3 Methodology

We are investigating current FinTech services using an environmental scan approach. Popular FinTech apps are identified by download popularity on the Google Play and Apple App stores, as well as lists based on published revenue numbers (for services without mobile Apps). For each popular service, we have examined documentation and support FAQs to determine whether delegation support is available in their web platform and/or mobile app. We have also recorded notes about accessibility-related materials and support.

4 Preliminary Results

FinTech Apps typically can be grouped into the following subcategories: Banking and Personal Finance, Payments, Remittances, and Transactions, Lending and Credit, Investment and Wealth Management, Capital Markets and Asset Management, Insurtech and Proptech, Blockchain, Cryptocurrencies, and DeFi (Distributed Finance), Regtech, Compliance, and Security, and Infrastructure. While the first three categories may be the most relevant to typical end users, we should not assume that users with accessibility needs have no interest in or need for FinTech apps that enable more specialized functionality such as crypto wallet management or investment management. In our preliminary investigation of FinTech accessibility, we have excluded apps from the last two categories as they are mainly bank-to-bank or bank-to-government apps that are not targeted to consumer clients.

Thus far, we have examined 45 FinTech apps/services that are aimed at consumers (as opposed to bank-to-bank apps), as shown in Appendix A. We have paid particular attention to FinTech services in Canada as that is our jurisdiction, but our list also includes services used in the US, UK, Germany, India and Brazil. The results show that almost none of the FinTech apps explicitly support delegation through dedicated mechanisms, though some apps support joint accounts. One app, *N26*, is a German app designed for shared management of funds by multiple people, which appears to be useful for shared event planning, but could possibly be appropriated for delegation contexts. Twenty-one of the 45 FinTech apps we looked at support joint accounts, with a few even indicating that these accounts are the preferred method for delegation, despite the fact that joint accounts are shown to be problematic for delegation due to the assumption of shared ownership of assets [18]. Our exploration also led us to investigate *Unified Payments Interface*, a financial infrastructure system in place in India which explicitly supports financial delegation. As a centralized infrastructure, this system will allow banks and FinTech companies operating in India to develop apps for supporting delegation, which is very promising [14].

In terms of accessibility, some of the FinTech companies providing apps have accessible websites, but few mention accessibility of their mobile apps. *Questrade*, as US-based personal investment management platform, has incredibly extensive accessibility controls built directly into their website. A few other FinTech companies such as *Wise*, a global payments system, mention accessibility features on their website and app (though often limited to support for on-device screen readers) and a dedicated email address for accessibility inquiries. The rest of the services investigated either only have very brief and non-specific accessibility policies on their website, or make no mention of accessibility at all.

4.1 Discussion & Future Work

It is clearly optimal for people to handle their own finances, and so FinTech apps and services must ensure that accessibility is designed in from the very beginning. However, it is also important to acknowledge that there are situations when people with and without accessibility needs require assistance from others with financial tasks. Our initial investigation demonstrates that FinTech as a sector is not adequately supporting either accessibility features or delegation, and this is likely to lead to unsafe practices where people requiring financial task assistance share passwords in order to get help. We also note that there are jurisdictional challenges related to supporting accessible FinTech as different jurisdictions provide differing levels of integration and support with banking infrastructures (for example third party access infrastructures are common in some countries, but not standardized in Canada and the US). This means that solutions that work in one jurisdiction may be much more difficult to implement in others.

Our initial environmental scan was conducted at a high level and more detailed evaluation of FinTech apps as well as a more formal mechanism for selecting apps to investigate is warranted. Additionally, full accessibility audits of FinTech apps that purport to support delegation are needed, as the mechanisms for setting up delegation must be accessible or they will not be used, and people who need assistance will default to insecure methods of delegation such as password sharing.

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Optimization Containation Fertonial See N/A N/A N/A Bitfarms Canada Personial See N/A N/A N/A Consumet Canada Personial See N/A N/A N/A Consumet Canada Personial See N/A N/A N/A Consumet Canada Personial Yes Yes Yes N/A Consumet UnitedStates DuitedStates N/A N/A N/A N/A India Banks N/A N/A Yes N/A N/A India Banks N/A N/A Yes Yes Yes India Banks N/A Yes Yes Yes Yes India Banks N/A Yes Yes Yes Yes India Banks N/A Yes Yes Yes Yes India Banks Yes Yes <td></td> <td></td> <td>doesn't talk about assistive technologies.</td>			doesn't talk about assistive technologies.
Bittame Canada NA NA NA NA Cohmant Canada Personal $8 \approx$ No Nes Cohmant Singapore Personal $8 \approx$ No Nes Cryptocom Singapore Personal $8 \approx$ No Nes Cryptocom United Stap No No Nes Nes United Payments United Stap Banks No Ne Ne United Payments United Stap Both No Ne Ne Interface (UUD) United Stap Both No Ne Ne Interface (UDD) United Stap Somewhat No Yes Ne Interface (UDD) Canada Personal Yes </td <td>o No</td> <td>No support for joint or business accounts</td> <td>Very short, general policy. Nothing concrete about digital services.</td>	o No	No support for joint or business accounts	Very short, general policy. Nothing concrete about digital services.
Commut Canada Personal Yes Yes Cryptocom Singapore Personal Yes Yes Cryptocom Singapore Personal Yes Yes Combase United States Non Yes Yes Combase United States Non Yes Yes United Payments Bunks Non Yes Non United Payments Duited States Bunks Non Yes Yes Interface (UPD) USCanda Both Yes Yes Yes Interface (UPD) USCanda Both Yes Yes Yes Interface (UPD) USCanda Both Yes Yes Yes Interface (UPD) Canada Personal Yes Yes Yes Interface (UPD) Canada Personal Yes Yes Yes Interface (UPD) Canada Personal Yes Yes Yes Interface (UPD) Canada </td <td>N/A N/A</td> <td></td> <td>N/A</td>	N/A N/A		N/A
1SingsporePersonalYesYesYesUnited StatesNexYesYesYesUnited StatesBanksNodYesNodPandaBanksNodYesNodPandaBanksNodYesNodPandaBanksNodYesNodUsycardaBothYesYesYesUsycardaBothYesYesYesUsycardaBothYesYesYesCanadaPersonalYesYesYesUnited StatesBothYesYesYesUnited StatesBothYesYesYesCanadaBothYesYesYesUnited StatesBothYesYesYesdGlobalPersonalYesYesdGlobalBothYesYesdGlobalBothYesYesfinited StatesBothYesYesdGlobalBothYesYesfinited StatesBothYesYesfinited StatesBothYesYesfinited StatesBothYesYesfinited StatesBothYesYesfinited StatesBothYesYesfinited StatesBothYesYesfinited StatesBothYesYesfinited StatesBothYesYesfinited StatesBoth	No No		Not specified online
United StatesYesYesYesLenderBanksNoYesNoAmeliesBanksNoYesNoAmeliesBanksNoYesNoAmeliesBanksNoYesNoDisCandaBathSomewhatYesNoUS/CandaBothYesYesNoCanadaBothYesYesNoChandaPersonalYesNoYesObeChandaPersonalYesNoUnited StatesBothYesNoYesUnited StatesPersonalYesNoYesUnited StatesPersonalSomewhatNoYesduCanadaPersonalYesNoYesduGlobalPersonalYesNoYesduGlobalBothYesNoYesduGlobalBothYesNoYesduHoliaYesYesYesYesduHoliaYesYesYesYesduHoliaYesYesYesYesduHoliaYesYesYesYesduHoliaYesYesYesYesduHoliaYesYesYesYesduHoliaYesYesYesYesduHoliaYesYesYesYesduHoliaYesYes <th< td=""><td>Maybe No</td><td>May be able to add single wallet to multiple accounts, but no controls AFAICT.</td><td>Not specified online</td></th<>	Maybe No	May be able to add single wallet to multiple accounts, but no controls AFAICT.	Not specified online
α CanadaBanksNoYesNA μPP IudiaBanksN/AYes \cdot μPP US/CandaBothYesYes \cdot $US/CandaBothYesYesYesYesCanadaBothSomewhatNoYesYesCanadaPersonalYesYesYesYesUnited StatesBothYesNoYesUnited StatesPersonalYesYesYesUnited StatesPersonalYesYesYesUnited StatesPersonalYesYesYesUnited StatesPersonalSomewhatNoYesUnited StatesPersonalSomewhatYesYesUnited StatesPersonalSomewhatYesYesdGlobalPersonalYesYesdGlobalBothYesYesdInitaBothYesYesdHothYesYesYesdInitaBothYesYesdInitad StatesPersonalYesYesdInitad StatesBothYesYesdYesYesYesYesdYesYesYesYesdInitad StatesPersonalYesYesdYesYesYesYesdYesYesYesYesd$	Maybe No	Can create one for a trust, but needs to be a "business" account.	. Not specified online
	Unknown Unknown	Unclear if their APIs support delegation	N/A
USCanda Both Yes N/A Canada Both Somewhat No Yes Canada Both Somewhat No Yes Canada Personal Yes Yes Yes Date Personal Yes No Yes United States Both Yes No Yes United States Both Yes Yes Yes United States Personal Yes Yes Yes Canada Personal Yes Yes Yes d Canada Somewhat No Yes d Canada Personal Yes Yes d Clobal Personal Yes Yes d Clobal Both Yes Yes fida Both Yes Yes fida Both Yes Yes fidad Both Yes Yes fidad Both Yes Yes fidad Both Yes Yes fidad Yes Yes Yes	Yes Yes	Very new (Aug'24), the UPI Circle feature allows delegation.	N/A
Canada Both Somewhat No Yes Canada Personal Yes Yes Yes Canada Personal Yes Yes Yes United States Both Yes No Yes United States Both Yes No Yes United States Personal Yes Yes Yes United States Personal Yes Yes Yes Canada Personal Somewhat No Yes Canada Personal Somewhat No Yes d Clubal Personal Yes Yes d Global Personal Yes Yes fulta Both Yes Yes Yes	N/A No	API doesn't natively support multiple users. Apps built on top would have to implement themselves.	N/A
Canada Personal Yes Yes clanada Personal Yes Yes Yes UnitedStates Both Yes No Yes UnitedStates Both Yes No Yes UnitedStates Both Yes No Yes Canada Personal Somewhat No Yes Canada Personal Somewhat No Yes d Clobal Personal Yes No Yes d Global Personal Yes No Yes d Global Both Yes No Yes d Hatia Yes Yes Yes Yes d Both Yes Yes Yes Yes d IntitedStates Personal Yes Yes Yes	Yes		Working towards WCAG for website. No indication of apps. Reasonable policies.
ple Canada Personal Yes No Yes United States Both Yes No Yes United States Both Yes No Yes United States Personal Yes Yes Yes Canada Personal Somewhat No Yes Canada Personal Somewhat Yes Yes d Canada Personal Somewhat Yes Yes d Global Personal Yes No Yes Yes d Global Both Yes No Yes Yes Yes d Global Both Yes Ye	Somewhat No	Supports Trust Accounts	Extensive accessibility controls on the website, really quite impressed! No indication about the app online, but likely worth investigating.
United States Both Yes No Yes United States Personal Yes Yes Yes United States Personal Yes Yes Yes Canada Personal Somewhat No Yes Canada Personal Somewhat Yes Yes d Clobal Personal Yes Yes Yes d Clobal Personal Yes Yes Yes d Clobal Poth Yes Yes Yes d Clobal Both Yes Yes Yes d United States Pothol Yes Yes Yes	Yes No		Lots about accessibility policy in general, nothing concrete about digital services.
Robinbood United States Personal %s %es %es Borrowell Canada Personal Somewhat No Yes Chinoney Canada Both No Yes Yes Chinoney Canada Both No Yes Yes Chinoney Canada Personal Somewhat Yes Yes Tuptap Send Global Personal Yes No Yes Tuptap Send Global Both Yes No Yes PhonePe India Both Yes Yes Yes Condo Docu United State Personal Yes Yes Yes	Yes No	Suggest joints for caregiving explicitly	Website supports WCAG, directs inquiries to general support email. No indication of app.
Canada Personal Somewhat No Yes Canada Both No Yes Yes Canada Personal Somewhat Yes Merchants d Canada Personal Somewhat Yes Merchants d Global Personal Yes No Yes d Global Both Yes No Yes India Both Yes Yes Yes United States Personal Yes Yes United States Personal Yes Yes	Yes No	Joint is US only	Color themes, partial text-to-speech support in the apps. No defails on website accessibility.
Canada Both No Yes Yes d Canada Personal Somewhat Yes Merchants d Clobal Personal Somewhat Yes Merchants d Clobal Personal Yes No Yes d Clobal Both Yes No Yes hdia Both Yes No Yes United States Personal Yes Yes Use United States Personal Yes Yes Yes	o No		Lots about accessibility policy in general, nothing concrete about divital services
data Personal Somewhat Yes Merchants d Clobal Personal Yes No Yes Clobal Both Yes No Yes India Both Yes Yo Yes Undia Both Yes Yo Yes Undia Both Yes Yes Yo Undia Both Yes Yes Yo Undia Personal Yes Yes Yes	o No	Doesn't seem to be any proxy support via their APIs.	Not specified online
d Global Personal Yes No Yes Global Both Yes No Yes India Both Yes Yes Yes United States Personal Yes Yes US-Only?	o No		WCAG
Global Both Yes No Yes India Both Yes Yes Yes UnitedStates Personal Yes Yes Vec	No		Not specified online
India Both Yes Yes Yes UnitedStates Personal Yes Yes US-Only? UnitedStates Personal Yes Yes Ves Yes			Website supports assistive tech, indicates they try to do the same with apps. Has specific accessibility support
India Both Yes Yes Yes UnitedStates Personal Yes Yes US-Only? UnitedStates Derevnal Yes Yes Ves			email address.
United States Personal Yes Yes US-Only? Initiad States Deserval Yes Yes Yes	o No	May support delegation when UPI Circle is in place?	Not specified online
Inited States Dersonal Ves Ves Ves	o No		Not specified online
	No No	Has inactive account stuff, but not proxy access. Will support UPI Circle in India when it's available!	Built-in accessibility controls.
PayPal United States Both Yes Yes S	Somewhat No	Only have multiple users for business accounts!	States commitment online, says webpage is accessible and welcomes feedback
Remitly United States Personal Yes No Yes No	o No	"Can't process transfers that are sent on someone else's behalf"	
anu taupactons Regtech, Compliance, and Security Verafin Canada Banks No N/A N/A N	N/A N/A		N S S

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