Inclusive Financial Services

For Seniors and Persons with Disabilities:
Global Trends in Accessibility Requirements

G3ict

**Global Initiative for Inclusive Information
and Communication Technologies**

Inclusive Financial Services

For Seniors and Persons with Disabilities:
Global Trends in Accessibility Requirements

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About G3ict

G3ict – the Global Initiative for Inclusive Information and Communication Technologies – is an advocacy initiative launched in December 2006 in cooperation with the Secretariat for the Convention on the Rights of Persons with Disabilities at UNDESA. Its mission is to facilitate and support the implementation of the dispositions of the Convention on the Rights of Persons with Disabilities promoting digital accessibility and assistive technologies. Participating organizations include industry, academia, the public sector and organizations representing persons with disabilities.

G3ict relies on an international network of ICT accessibility experts to develop policy papers, practical tools, evaluation methods and benchmarks for States Parties, Disabled Persons Organizations (DPOs) and corporations. G3ict organizes or contributes to awareness-raising and capacity building programs around the world in cooperation with international organizations.

G3ict produces jointly with the ITU the e-Accessibility Policy Toolkit for Persons with Disabilities - www.e-accessibilitytoolkit.org - as well as specialized reports and model policies in cooperation with ITU and UNESCO which are widely used around the world by policy makers involved in the implementation of the CRPD.

For additional information on G3ict, visit www.g3ict.org.

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FOREWORD

Global demand for accessibility continues to grow, due in part to the strengthening voice worldwide of more than one billion people with disabilities, including the aging population, and important frameworks, such as the United Nations Convention on the Rights of Persons with Disabilities. From a private sector standpoint, the Convention represents a unique opportunity to ensure equal access to information while achieving global harmonization of standards and economies of scale. Understanding that technology is the great equalizer for underserved populations and having a clear roadmap towards inclusive information and communications technologies (ICT), rather than simple compliance strategies, will benefit everyone in every industry.

Specifically, the financial services sector is faced with the need to transform operations while providing truly exceptional customer experiences. Disruptive trends -- such as the aging population, influx of mobile devices and global regulations – are driving demand for more human-centric technology, and creating an opportunity for innovation that are proving to be differentiators for the institutions embracing them. Consumer demand to be in control of interactions and information is forcing those in financial services to reconsider what's important to stay competitive. By offering an online experience through any device personalized to individual needs, preferences and abilities, organizations can ensure they are reaching the broadest base of the population, especially the "unbanked" and "underbanked," to enhance interactions and improve sales opportunities.

Customers with lifelong disabilities or age-related impairments represent an increasingly large population among the biggest markets in the world such as OECD countries and China. Also, in many countries aging persons are the holders of a majority of the assets and highly dependent on insurance, retirement and banking services. Ensuring they can use the services they need without encountering accessibility barriers is a powerful way to earn their loyalty in a highly competitive environment.

IBM has a long tradition and culture of accessibility and understands the importance of improving the user experience, managing accessibility compliance, and creating an inclusive workplace environment. Consistent with our own experience, this report highlights the organizational and process adjustments needed to ensure everyone has equal access to timely information they need for work and life.

By creating a holistic strategy for embedding accessible technology across the entire enterprise - from processes to product development to people – organizations can reinvigorate individual channels and harmonize them across the bank. G3ict has written this timely publication for the financial services sector that provides a clear picture of the global forces at work that are transforming how employee- and client-facing applications, products and services are delivered to reach the broadest set of customers. The report also serves as a useful benchmarking source for governments and advocates based on its review of existing solutions already implemented around the world. We applaud G3ict for taking this first step on the road of advocating for greater accessibility of financial services in cooperation with stakeholders from around the world.

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INTRODUCTION

Financial services play a necessary and important role in societies by enabling access to products, resources, and services, enabling savings and asset creation, and facilitating economic self-sufficiency. Access to financial services for all is a necessity in today's world not simply at the community or household level, but at an individual level, to open doors to banking services, credit services, stocks and shares, insurance, and other markets. Access to and inclusion in financial services is crucial to poverty reduction and participation in economic prosperity and growth and development.

The increasing pervasiveness of technology in the delivery of financial services and the disruption of traditional channels of delivery through 'FinTech' (technology for financial service delivery) have generated new enthusiasm and newer ways for reaching out to persons who remain *unbanked*. Similarly, the increasing nature of services now available through technology has triggered growing demand among persons who remained marginalized from traditional paper-based banking services, as well as calls to ensure that they do not in turn create new barriers to access. Accompanying this growth spurt in technology there has also been an increasing recognition of the rights of persons with disabilities and the utmost importance of providing equal access to them to all services, including financial services.

Persons with disabilities and diverse abilities have been amongst those traditionally marginalized from the financial services sector through a mix of inaccessibility, presumptions of limited need and capacity to manage finances, and mindsets that did not view them as a profitable consumer base. This paradigm is now rapidly changing with growing evidence of their demand and need for access to services as well as the increasing income base of persons with disabilities around the world. Persons with disabilities and diverse abilities are demanding better and easier access to the entire range of financial services. Access to and inclusion in financial services is important to persons across the economic spectrum. And for persons with disabilities who live under the poverty line, it is essential that they are involved in financial inclusion initiatives and programs that will empower them and enable them to become financially independent.

A range of factors are serving as drivers to enhance the inclusion of persons with disabilities and diverse abilities through accessible financial services including demographics, attaining a competitive advantage and improving market share nationally and globally, Corporate Social Responsibility, regulations, legislation and compliance, enhancing business value, ensuring and increasing an inclusive workplace for employees with disabilities, maximizing on technology advances, and ensuring diversity and inclusion for all.

An untapped market opportunity
Estimates suggest that approximately 15 percent of the world's population, or more than a billion persons, are persons with disabilities.[1] They also represent the "world's largest unbanked minority."[2] Making financial services accessible and inclusive of the needs of persons with

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[1] See generally: World Health Organization and World Bank (2011), *World Report on Disability*. Retrieved July 5, 2014, from http://www.who.int/disabilities/world_report/2011/report.pdf

[2] Center for Financial Inclusion at ACCION International (2013), Key to the Future, Financial Inclusion and Opportunity for all. Concept note for panel discussion. Retrieved November 20, 2014, from http://www.un.org/disabilities/documents/idpd/idpd2013_financialinclusionpanel.pdf

disabilities will open up a large consumer base of persons with disabilities as well as their families. It is also important to note that incorporating accessibility into the design and delivery of financial services creates a much larger market opportunity by making these services easier to use for many persons who may not necessarily fall into the 15% represented above.

There is also the consideration that improving accessibility improves access for all users, and makes it possible for them to make use of more services. A lot of accessibility issues (such as the physical accessibility to branches and ATMs, signature mismatches due to hand tremors or strokes) are common to persons with disabilities, the elderly and persons with neurological conditions. Estimates suggest that by 2025, 20 percent of the population of the industrialized world will be above the age of 65. Accessibility and multiple formats of delivery also aid persons with low literacy (900 million around the world) or those who do not speak the language of use. Taken together, this constitutes a significant percentage of the customer base — so these issues should be addressed by banks for that reason alone if not anything else.

Accessibility: Better design, better business

Offering accessible and inclusive financial services also gives companies an edge in the competitive financial services sector as evidence suggests that accessible design is simply better design for all consumers.[3] The growing assimilation of and demand for what were previously considered "assistive technologies," such as voice recognition, hands free navigation, user control over screen contrast, and text-to-voice output into mainstream mobile and computing devices are a great example to highlight the wide applicability of providing multiple channels of input and output. In a recent study, Ahmad and Al-Zu'bi found that accessibility of e-banking services was one of the determining factors for increased consumer satisfaction, loyalty, and positive word of mouth for Jordanian commercial banks, irrespective of whether a person had a disability or not.[4]

Today, financial organizations face new competition driven by new players influenced by emerging digitalization, the increased demand for mobile, new forces driven by non-bank such as retail entities offering financial services and competitors such as telecommunication companies, increased international and global competition among banks, or insurance companies becoming more and more aggressive in investment products. Furthermore, there is increased evidence that integrating accessibility in the design of products and services from the start results in cost savings and more streamlined and efficient processes that enhance customer experience. New standards and a need for increased compliance and security adherence, while a market differentiator, must instill trust while being seamless and undisruptive to the customer experience. Ensuring accessibility in new and current product offerings serves as a market differentiator while offering a more user friendly experience for consumers with and without disabilities.

Outreach to communities that remain deprived of access to financial services such as persons with disabilities increases a corporation's contribution to citizen engagement and community development. The financial services industry is constantly seeking innovative ways of reaching

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[3] IBM Human Ability and Accessibility Center (2006), Reaping the business advantages of accessibility for banking. Retrieved October 29, 2014, from https://www-03.ibm.com/able/dwnlds/BusinessAdvantBanking-ExecBrief-accessible.pdf

[4] Ahmad, A.M.K., & Al-Zu'bi, H.A. (2011), E-banking functionality and outcomes of customer satisfaction: an empirical investigation. *International Journal of Marketing Studies, 3*(1), 50-65.

out to unbanked persons and looking to enter new market segments. With increasing technological advances, the possibility of citizen engagement with financial services has increased dramatically, which is good news for proponents of accessibility. Several companies in the financial services sector are incorporating disability inclusion as a prominent facet of their Corporate Social Responsibility Initiatives serving to build stronger, inclusive environments in their communities and reach out to the individuals that continue to face barriers in accessing mainstream finance.

A global mandate for financial inclusion

The passage and wide global support for The Convention on the Rights of Persons with Disabilities has spurred important national and international discussions on financial inclusion and changed the frame of reference for thinking about access to finance for persons with disabilities. Access to financial services is vital in ensuring a person's autonomy and a sense of citizenship, both key tenets of the Convention. The Convention requires inclusion and accessibility in all public services, and specifies the need for accessibility of ICTs and ICT-enabled services. Financial inclusion of persons with disabilities is also important for the fulfillment of Millennium Development Goals (MDGs) and economic development efforts, which cannot be comprehensively met if a significant section of society is left out.[5,6] The outcome document of the recently held High Level Meeting on the realization of the Millennium Development Goals and other internationally agreed development goals for persons with disabilities urges all relevant stakeholders to ensure the inclusion of persons with disabilities in the full spectrum of banking and financial services as follows:

Encourage regional and international development banks and financial institutions, consistent with their mandates, to include disability in all their development efforts and lending mechanisms, taking into account that persons with disabilities are disproportionately affected also during economic crises.[7]

Policy makers are engaging with diverse stakeholders including banking and other industry associations, public and private financial service providers, telecommunication service providers, disabled persons' organizations, and consumers themselves to develop appropriate policies, regulations, and implementation frameworks to promote the reach of financial services to all.

Compliance and meeting legal obligations

Increasingly, national policies and global standards are moving towards mandating accessibility in financial services, especially electronic and digital services. Governments and banking associations around the world are recognizing the lack of accessible services for persons with disabilities. Countries are introducing and using a mix of laws, regulations, standards and guidelines to improve the range and sustainability of accessible financial services through the public and private sectors. Compliance with accessibility requirements will hence be both an obligation as well as growing necessity to compete with others in the sector.

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[5] For an overview of the Millennium Development Goals, refer to the UN MDG website, available at http://www.un.org/millenniumgoals/
[6] World Health Organization and World Bank, *World Report on Disability*.
[7] United Nations, Sixty-eighth session. Item 27 (b) of the provisional agenda www.un.org/disabilities/documents/hlmdd/a_68_l.1.doc

Scope of the report

The possibilities offered by information and communications technologies (ICTs) need to be exploited by financial institutions with efforts to increase knowledge and capacity to do so. In the Financial Inclusion 2020 Global Forum (October 28-30, 2013) where G3ict lead the sessions for accessibility, it clearly appeared that technology needs to reach its full potential for an inclusive system. The consensus was that technology makes it possible to make financial services far more inclusive and that progress can be achieved through a mix of good practices sharing, industry codes of conduct, policies and regulations. Furthermore, as access to financial services is going through a significant transformation as a result of emerging technologies and new regulations, there is increased opportunity to change banking behaviors through innovation and digitalization. There is no better time than now to inject a true inclusive lens in this evolution.

This report offers an introduction and overview to the need for, and mechanisms to achieve accessibility in financial services:

     Chapter 1 offers an understanding of the barriers posed by inaccessible financial services to persons with different disabilities.

     Chapter 2 highlights the different international mandates and frameworks that are accelerating the promotion of financial inclusion for persons with disabilities.

     Chapter 3 offers in-depth descriptions of the accessibility needs based on the type of technology in use, along with examples of effective practices and solutions to promote inclusion. It also offers a look at how different countries are striving to achieve the accessibility mandate.

     Chapter 4 focuses on the state of practice of financial inclusion for persons with disabilities across countries and the implementation of the Convention's requirements for ICT accessibility and financial inclusion. This chapter describes findings from two major studies undertaken by G3ict that paint a picture of the state of financial accessibility today and offer a glimpse into the financial sector's commitment to incorporate accessibility into their work and services in the future.

Finally, in the **Conclusions** section, the report offers recommendations for relevant stakeholders to incorporate the principles of inclusion to drive accessibility through product design and delivery, policy and legal structures, and distribution channels and pathways.

The overall goal of this research is to invigorate and further promote dialogue that foster better inter-disciplinary, cross-industry collaboration in the financial industry to better serve all constituents regardless of their abilities. The report will highlight and recognize some of the initiatives undertaken by some financial institutions around the world to become more inclusive and accessible and articulate some recommendations that can further enrich the dialogue around access to financial services by persons with disabilities and diverse abilities.

CHAPTER 1: BARRIERS TO ACCESS FOR PERSONS WITH DISABILITIES AND DIVERSE ABILITIES

The Accessibility Imperative

Persons with sensory, cognitive, mobility and psychosocial disabilities may face several challenges in accessing services for the public due to their design. It is not possible to define disability in an exhaustive manner, given that it is influenced by various factors such as the physical environment, social norms, and cultural constructs, nor is it possible to arrive at a precise number regarding that demographic.[8] As stated in the United Nations Convention on the Rights of Persons with Disabilities (hereafter referred to as "The Convention"),

Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.[9]

Persons with disabilities, whether in developed or developing countries have limited access to financial services, including traditional and alternative banking, online payment services and financial transactions, and mobile banking. This is primarily due to the fact that their constituency has not been recognized as a large customer base by most financial service providers. Consequently, financial services remain inaccessible to them as their needs are not addressed or met. A 2005 study by Handicap International revealed that less than 1 percent of the clients of microfinance institutions, dedicated to serving the world's financially excluded persons, were persons with disabilities.[10] There are several reasons which are put forth for this disparity in services being available to persons with disabilities:

There are many reasons for this staggering market failure such as lack of reasonable accommodation; lack of awareness by staff of the potential of persons with disabilities, stigma or prejudice, the misguided belief that charity, not financial services is the only or best way to help, and the denial of "legal capacity" which makes it impossible for persons with disabilities to make decisions for themselves and thus participate in civil society.[11]

Similar observations are also reflected in the recently released report by the Center for Financial Inclusion at ACCION on inclusive microfinance for persons with disabilities.[12] Customers with disabilities or older customers face several and severe problems when accessing facilities of banks, both in their branches as well as in kiosks or when using online banking services. The Payments Council in UK identified several hurdles being faced by customers with disabilities as follows:

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[8] World Health Organization and World Bank, *World Report on Disability,* Chapter 1.

[9] United Nations (2007), Convention on the Rights of Persons with Disabilities [A/RES/61/106], Article 1.

[10] Center for Financial Inclusion at ACCION International. (2010). A New Financial Access Frontier: People with Disabilities. Retrieved July 20, 2014, from, http://centerforfinancialinclusionblog.files.wordpress.com/2011/05/a-new-financial-access-frontier-updated-april-2011-final.pdf

[11] *Id.*

[12] Gupta, V. (2014), Making microfinance accessible to persons with disabilities: awareness and attitudes among Indian microfinance institutions. Retrieved July 15, 2014, from http://centerforfinancialinclusionblog.files.wordpress.com/2014/05/making_indian_microfinance_accessible_for_persons_with-disabilities.pdf

These barriers include the physical inaccessibility of cash machines and bank branches, lack of standardization between cash machines and complicated data entry processes and verification hurdles.[13]

Bank branches are often not designed to facilitate customers using wheelchairs or walking sticks, and ramps are often not found (especially in countries which do not mandate such accessibility features in all buildings). The layout of the bank can be confusing, and the signage is not clear for blind customers or customers with cognitive disabilities. Even the bank literature can be problematic, as it is rarely available in different formats for customers with different disabilities, and the language of the various terms and conditions is often so complicated that a person using a screen reading software or who has a learning disability will not be able to follow or understand the document.

Discoverability of accessibility features, functions and services is very elusive; often difficult to find for persons with disabilities, individuals with low technology literacy and limited access to technology. Furthermore, there is very little understanding of the needs for the hard of hearing and the deaf, or culturally deaf population, leaving them completely underserved or excluded. Policies to access financial services have long been written and implemented but not reviewed to reflect current state and changes to access to information. Additionally, benefits through the enablement of technology to access financial services for persons with disabilities or diverse abilities have not been adequately documented making it difficult for organizations to truly understand the return on investment and customer value.

In several countries, persons with different disabilities are not allowed to independently open and operate bank accounts, access loans, or use electronic and online banking facilities.[14] This is primarily based on assumptions about what persons with disabilities can and cannot do, their capacity to read and write, and their ability to make important financial decisions independently. These assumptions are a result not only of the stigma and stereotypes about persons with disabilities, but also a hangover from traditional brick-and-mortar and purely paper-based operations of the past. Furthermore, many policies within financial institutions do not promote access to all persons. Policies around authentication, lack of enforcement and governance continue to challenge many organizations including financial organization in their ability and resilience to be accessible and inclusive.

The increasing use of technology in banking and financial services can be a major boon to consumers traditionally left out. In fact, some technology-enabled financial services, such as SMS based mobile money services for rural areas, have been specially developed to bring the unbanked into the financial services space. If done right, services such as e-banking, mobile banking, and phone based banking offer a significant opportunity for persons with disabilities and diverse abilities to access various services through multiple mediums, and theoretically,

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[13] "Disabled and older consumers face banking barriers." Retrieved July 30, 2014, from
http://www.which.co.uk/news/2012/10/disabled-and-older-consumers-face-banking-barriers-300309/
[14] The Global Initiative on Inclusive ICTs. (2014), Leveraging Accessible Technologies to Bring in the Unbanked in India. Proceedings of the High-Level Meeting on Inclusive Financial Services February 21, 2014 - Mumbai, India. Retrieved October 13, 2014, from
http://g3ict.org/design/js/tinymce/filemanager/userfiles/File/Feb%202014%20India/IBA%20Event%20Proceedings%20-%20February%202014%20Mumbai.pdf

should enable far greater access to services. On the other hand, if technology enabled services are poorly designed they will create a larger digital divide and further exclude persons with diverse abilities from critical and necessary access to financial services.[15]

While accessibility standards for internet such as WCAG have existed since the early 2000, websites owned or managed by financial institutions often do not comply with international guidelines on web accessibility, making many of their features to be difficult or impossible to be accessed by end-users of assistive technology. Design decisions, such as small fonts or faulty navigation can make sites difficult to use as detailed in the narrative below. Consider the study done by the Australian Web Industry Association, which stated that: *Bank websites have drawn criticism from independent experts for the clutter and poor design of their websites, making them difficult to access by disabled users of the Internet.[16]*

Problems are also present in payment kiosks or Automated Teller Machines (ATMs), phone banking, security procedures, and other features and facilities. It is important to note that barriers are not limited to the design of internets or software only, as the design of many hardware solutions, physical designs introduce many inconsistencies and often create more complexity from a usability perspective as well.

Bank of Baroda ATM in India made accessible by the addition of a ramp.
Source: Wikimedia Commons by a CC BY SA 3.0 license.

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[15] Samant, D., Matter, R. & Harniss, M. (2013), Realizing the potential of accessible ICTs in developing countries. *Disability and Rehabilitation: Assistive Technology, 8*(1), pp. 11–20.
[16] Dinham, P. (2013, March 8), Accessibility to bank websites a problem for the disabled. *iTWire*. Retrieved January 2014, from http://www.itwire.com/it-industry-news/market/59004-accessibility-to-bank-websites-a-problem-for-disabled

An unintended consequence of these barriers to access is that customers often rely on friends or family for help, and end up compromising their privacy and security, giving up their passwords and personal data to third parties.[17] This can lead to cases of fraud or financial misappropriation and theft; this further discourages customers with disabilities from accessing banks and financial institutions independently. Given the large percentage of population that is impacted, it is imperative that some efforts be taken to overcome these barriers. This would ultimately be beneficial to the financial entity's own financial interest and bottom line, apart from just meeting their moral or legal obligations. The sections below offer more insights into the accessibility barriers that persons with different disabilities face in accessing financial services.

Disability specific access challenges to financial services

Access to financial services can be hampered for persons with disabilities in a number of ways. Many of them have to rely on sub-optimal solutions to cater to their financial needs. A qualitative study by the UK Office of Disability Issues in 2010, which looked at the Life Opportunities of Disabled Persons found that many participants said that their finances were handled by close relatives such as spouses or children. In general they were not bothered by having someone else deal with their finances, and in fact many preferred it to be this way because their condition made it challenging for them to deal with financial matters. Others did not feel confident using internet banking or direct debits to pay bills.[18]

Some disability specific challenges to accessing services are described below. These are not exhaustive, but merely serve to illustrate the kind of accessibility options and accommodations which can be made to make the finance process more inclusive.

Barriers for persons with hearing impairments

Persons with hearing impairments find communication difficult in all situations where the means of communication is voice based. Hence, unless they are proficient at lip reading and positioned in front of the speaker, persons with hearing impairment will find it difficult to communicate with bank officials or tellers even when undertaking simple tasks like withdrawing money or depositing checks with some accommodations.

A lot of technology also relies on auditory cues and signals. Error messages or other audio cues without any text alternatives or captions might not be picked up by customers who are using multimedia based banking services (such as alerts on a bank's website, videos or audio guides) or ATM machines.[19] Most times, there are no customer care alternatives for persons who cannot use the Interactive Voice Response (IVR) systems or use the phone to talk to customer care executives. For example, there have been situations when customers travelling overseas find their cards locked because of being unable to answer security questions orally over the phone, or are unable to complete financial transactions if they cannot orally answer calls

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[17] *Id.*

[18] "Access to Goods and Services", page 142, Report on Life Opportunities for Disabled People, available at http://odi.dwp.gov.uk/docs/res/los/los-qr-cc.pdf.

[19] Noonan, T. (2000), Barriers to Using Automatic Teller Machines. Retrieved July 26, 2012, from http://www.hreoc.gov.au/disability_rights/inquiries/ecom/atmpaper.htm

filtered by banks' anti-fraud departments at that very moment.[20,21] Even when text relay services or text phones are available, persons may face problems if they are not near a landline connection (which is still required for a relay phone) or bank employees are not appropriately trained in using text phones.[22]

Barriers for persons with visual impairments

Persons with visual impairments face difficulties both with respect to navigation of physical infrastructure, as well as in accessing services which may be available only in print or inaccessible electronic formats. Unless a building has been clearly constructed with universal design principles in mind, a customer with visual disability can face a number of problems even accessing the building in which the financial institution is located. There is a dire need for well mapped out and designed buildings, with signage in Braille or other tactile means.

For persons using screen readers, the use of complicated terms and conditions is especially challenging, as the language is often tough to follow. Even persons with partial vision impairments face difficulties, as there is no provision for alternative formats for financial documentation (like Braille or large text prints). Glossy brochures and other materials are filled with lots of information, often designed with catchy impressions making it difficult to read or even scan for those using assistive technology. Since checks and other financial instruments do not come with physically distinguishable marks, like currency does, it can be difficult for a person with a disability to make out what the financial instrument says.

There are problems while using technology like ATMs, since there is an increasing reliance on touch screens, without keys with recognizable lettering in Braille or audio output. Even when there is a token raised symbol on the middle key or Braille markings on the keypad for tactile recognition, ATMs can still be largely inaccessible if there is no way to access the screen content such as the instructions on how to proceed with a transaction. "Talking ATMs," while being mandated in some countries, are not as common in most other nations; a majority of ATMs around the world do not come equipped with an audio jack, and cannot be used by customers who want to connect headphones and hear the display on the screen. For persons with low vision, improper lighting, low contrast print and other glares make it difficult to make out what the screen says.[23]

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[20] Whateley, L. (2013, February 21), Banks face massive payouts to deaf customers. Action on Hearing Loss. Originally published in *The Times*. Retrieved July 8, 2014, from http://www.actiononhearingloss.org.uk/news-and-events/all-regions/press-releases/banks-face-massive-payouts-to-deaf-customers.aspx.

[21] Swinborne, C. (2012, February 29), Meet: Jill Hipson, the deafie who took on the banks. *The Limping Chicken.* Retrieved July 8, 2014, from http://limpingchicken.com/2012/02/29/meet-jill-hipson-the-consumer-who-took-on-the-banks/.

[22] *Id.*

[23] Noonan, T. (2000).

ATM keypad with Braille signage on the numbers
Source: Redspotted's Flickr account, CC BY 2.0

Websites which convey content through images without alternative text or Flash elements that do not get translated well through a screen reader are serious obstacles to website use. Form and search elements with missing labels cannot be correctly identified by screen readers.

Banks and financial service providers have a responsibility to protect their consumer's information and keep their accounts secure. Most security mechanisms are technology based and may inadvertently prevent persons with visual disabilities from accessing their own information. Security requirements where users have to input CAPTCHA (Completely Automated Public Turing test to tell Computers and Humans Apart) codes in order to validate their payment or to register for a particular service can be particularly problematic for blind customers.[24] Even audio CAPTCHA can be problematic due to the speed of narration and non-local accents. Virtual keyboards, increasingly used for password entry, can be completely inaccessible to screen readers.[25] Similarly customers with visual disabilities may be unable to use dongles which display security codes unless they have audio outputs.[26] These situations, again, sees the need for them to share their security information and passwords with others and denies them independence in accessing their financial information.

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[24]"The Challenges of Blind Internet Users." Even Grounds, Accessibility Consulting. Retrieved July 15, 2012, from http://www.evengrounds.com/blog/challenges-of-blind-internet-users

[25] The Global Initiative on Inclusive ICTs. (2014), Leveraging Accessible Technologies to Bring in the Unbanked in India. Proceedings of the High-Level Meeting on Inclusive Financial Services February 21, 2014 - Mumbai, India. Retrieved October 13, 2014, from http://g3ict.org/design/js/tinymce/filemanager/userfiles/File/Feb%202014%20India/IBA%20Event%20Proceedings%20-%20February%202014%20Mumbai.pdf

[26] Barriers Prevent Disabled from Managing Finances Independently (2013, May 6), Infocomm Accessibility Centre. Retrieved July 17, 2014, from http://www.iacentre.org.sg/barriers-prevent-disabled-from-managing-finances-independently/

Similarly, mobile apps are often inaccessible to screen readers on phones. For example, an app offering a listing of bank accounts with generic labels such as "top left label," "bottom right label," rather than their actual names (such as checking account, savings account), which are read out by the screen reader, hampers use in an equal manner by users with and without sight.[27]

Barriers for persons with physical disabilities

Disability laws in some countries mandate the presence of ramps and elevators in all public buildings; wherever such a legal mandate is absent, there is a dearth of facilities. Not just the bank branch or ATM, but if the neighborhood itself isn't accessible via wheelchair or walker, a person with a disability cannot access those services with or without additional assistance.

Persons with dexterity or motor control impairments may opt to use assistive software such as voice recognition to operate and navigate their computers or mobile devices. Similarly, some may need navigation without a mouse. Thus, the need to adhere to guidelines such as the WCAG 2.0 remains important to ensure that web and mobile content is accessible across types of disability. Signatures of customers who face some difficulties in writing may vary slightly from their signatures on record, which may cause problems when authorizing or verifying financial instruments.

Barriers for persons with cognitive disabilities

The term cognitive disability does not refer to a homogeneous group but rather spans a wide range of underlying impairments and conditions such as "autism, intellectual and developmental disabilities, traumatic brain injury (TBI), Post-Traumatic Stress Disorder (PTSD), Alzheimer's disease, and reading and learning disorders."[28] Persons with cognitive disabilities might have lower attention spans and might have problems with understanding complicated bank procedures and requirements. Similarly, if the bank literature is not clear and concise, it is difficult for anyone to understand. The front staff at banks are often improperly trained and do not have a holistic understanding of how to deal with persons with disabilities. It has also been observed that while banks can be helpful while opening accounts, they are not open-minded about granting loans to persons with disabilities.[29]

Persons with cognitive disabilities face several barriers in gaining equal access to electronic content in a meaningful way which goes beyond mere access and aids comprehension.[30] Poor website organization, cluttered content, scrolling and flashing texts, and confusing navigation

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[27] Holton, B. (2014), Accessible Mobile Money Management: Evaluating Mint, Check, and MoneyWiz iOS Apps. *AFB AccessWorld Magazine, 15*(4).

[28] Blanck, P. (2012), Towards a Right under the ADA to web access for people with cognitive disabilities [pp. 3-4] *Working Paper.* Coleman Institute. Retrieved July 9, 2014, from
http://bbi.syr.edu/about/team/Leadership_Team/Peter_Blanck.html.

[29] In conversation with Mr. Anil Joshi, Program Director of Human Ability and Accessibility at IBM, who works with parents of children with Down's syndrome and other intellectual disabilities. He also pointed out that given that only a miniscule portion of people with disabilities are able to understand banking concepts, the few who do so invariably use banking facilities with the help of their parents or guardians.

[30] Blanck, P. (2014), The struggle for Web eQuality by persons with cognitive disabilities. *Behavioral Sciences and the Law.* Retrieved July 9, 2014, from
http://bbi.syr.edu/news_events/news/2014/02/BlanckWebAccessibility2014BSLOnline.pdf

all adds to the "cognitive load" required to absorb and enjoy the content presented.[31,32] Simple language and content presented through common graphics or videos (which must have alternative text, captions and other elements required to make it accessible to persons with other disabilities) can help in making financial transactions and information more accessible to persons with cognitive disabilities, and indeed for many others.

Customers with cognitive disabilities may have hand function issues which can cause their signatures not to match the ones on record, which again causes problems when it comes to opening accounts or signing checks which ultimately bounce.

Broadly, these are the facets that banking and financial institutions have to keep in mind when designing or overhauling their services to cater to a broader population. Overall, banks and financial institutions should sensitize their staff and customer care personnel to the specific needs of persons with different disabilities and should have ready resource persons who are trained in alternative modes of communication such as sign language to assist persons with disabilities who access their services.

Next-generation incompatibility

With the advent of net and mobile banking solutions, financial institutions frequently release newer versions of their websites, net banking systems, or mobile apps. There have been several instances though where newer versions lack accessibility features or are incompatible with existing versions of assistive technology, even when older versions had been made accessible.[33] This demonstrates that the design process does not mainstream accessibility from the start but treats it as an afterthought. Situations like this can be disruptive to an active client's usage of financial services while financial institutions may incur significant costs due to remediation or retroactive changes.

Taking steps towards accessibility

The e-Accessibility Toolkit for Policy Makers[34] defines accessibility as a measure of the extent to which a product or service can be used by a person with a disability as effectively as it can be used by a person without that disability. The more a product can be used for a variety of purposes by a wide range of user groups, the more accessible it is. A product is accessible if it can be perceived, understood and operated by all users. It is not always possible to ensure that all products are inherently completely accessible; in such cases, it is possible to introduce accessibility through different ways, sometimes this may be in the form of some minor adjustment or an add on, sometime it may require some major modification or accommodation and in some cases, it may just not be possible to make a product/ service accessible, in which case, an accessible alternative may be provided through reasonable accommodation.[35] In

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[31] *Id.*

[32] Chadwick, D., Wesson, C., & Fullwood, C. (2013), Internet access by people with intellectual disabilities: inequalities and opportunities. *Future Internet, 5,* 376-397.

[33] Holton, B. (2014), Accessible Mobile Money Management: Evaluating Mint, Check, and MoneyWiz iOS Apps. *AFB AccessWorld Magazine, 15*(4).

[34] See e-Accessibility Policy Toolkit for Persons with Disabilities A Joint ITU/G3ict Toolkit for Policy Makers Implementing the Convention on the Rights of Persons with Disabilities, available at http://www.e-accessibilitytoolkit.org/toolkit/un_convention/definitions#reasonable

[35] *Id.*

general, it is always advisable to make a product inherently accessible, according to the principles of universal design.[36]

A high number of persons with disabilities (approximately 80 percent) live in developing countries,[37] where access to financial services is often compromised and is by no means ideal. There is thus a huge demographic that banks and financial institutions are not reaching out to by making their services only partially accessible. If these institutions find ways and means of improving the array of services that can be accessed by persons with disabilities and diverse abilities including elderly customers, it will not only improve the extent of financial inclusion but will also make a lot of business sense for the banks themselves and have a positive impact on global economies.

With an increasingly ageing population in many parts of the world, special efforts need to be taken to ensure that older customers can use the services offered by organizations such as banks and financial institutions with ease and comfort. The more accessible a service is, and the more that principles of universal design are applied while conceptualizing a product or service, the wider is the range of persons it can serve. This means that if a bank ensures physical access for all through universal design is considered and ensures to make a product or service accessible for persons with disabilities, it automatically makes it easier for its older customers to access the same services, while reducing risk and cost. It is also valuable to note that some of the access challenges also apply to persons with low literacy and persons using different languages. Using accessibility principles can help customers who have only temporary disabilities; for example, a bank branch which has a ramp outside is not just useful for a customer in a wheelchair, but also for someone who is suffering from a broken ankle or a parent using a baby carriage for example.

Screen shot of the Bank of America website, indicating accessibility options both on the web and in its branches. This is an indicative example of the best practice that banks should be following.

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[36] *Id.*

[37.]United Nations Enable, Factsheet on Persons with Disabilities. Retrieved July 15, 2014, from
http://www.un.org/disabilities/default.asp?id=18

CHAPTER 2: INTERNATIONAL FRAMEWORK

There are several international and regional instruments relating to persons with disabilities which advance countries' obligations to promote access to financial services. These instruments underline the need to make public and private services, including financial services, accessible to all including persons with disabilities to ensure just and equitable inclusion and participation in the ever-growing ICT-enabled society.

United Nations Convention on the Rights of Persons with Disabilities

The United Nations Convention on the Rights of Persons with Disabilities (the Convention) was adopted by the United Nations on December 13, 2006.[38] It has been signed by 159 countries and ratified by 151 countries as of December 2014. Additionally, 92 countries have signed the Optional Protocol to the Convention and 85 have ratified it. The Convention has brought to the forefront the rights of persons with disabilities and the importance of improving their accessibility to services:

The Convention follows decades of work by the United Nations to change attitudes and approaches to persons with disabilities. It takes to a new height the movement from viewing persons with disabilities as "objects" of charity, medical treatment and social protection towards viewing persons with disabilities as "subjects" with rights, who are capable of claiming those rights and making decisions for their lives based on their free and informed consent as well as being active members of society.[39]

Article 5 recommends that States Parties take appropriate steps to provide reasonable accommodation[40] in order to ensure equality and avoid discrimination.

Article 9 of the UNCRPD states[41]:

1. *To enable persons with disabilities to live independently and participate fully in all aspects of life, States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation,* **to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public**, *both in urban and in rural areas. These measures, which shall include the identification and elimination of obstacles and barriers to accessibility, shall apply to, inter alia:*
    a. *Buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces;*
    b. *Information, communications and other services, including electronic services and emergency services.*

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[38] Convention on the Rights of Persons with Disabilities, G.A. Res 61/106, U.N. Doc A/RES/61/106 (Dec. 13, 2006).
[39] *Id.*
[40] According to Art. 2 of the CRPD, "Reasonable accommodation means necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms;", http://www.un.org/disabilities/default.asp?id=262
[41] Text of the Convention is available at http://www.un.org/disabilities/default.asp?id=259.

Article 9(2) encourages State parties to *develop, promulgate and monitor the implementation of minimum standards and guidelines for the accessibility of facilities and services open or provided to the public" and to "ensure that private entities that offer facilities and services which are open or provided to the public take into account all aspects of accessibility for persons with disabilities.*

Article 21 concerning the freedom of expression and opinion and access to information directs states parties *to ensure that persons with disabilities have access to information in all forms of communication of their choice and promotes the use of Braille, assistive technologies, sign languages and all accessible means, mode and formats of communication; it also urges private entities, including providers of services through the internet, to make their services accessible to persons with disabilities.*

The Optional Protocol to the Convention allows the *Committee on the Rights of Persons with Disabilities ("the Committee") to receive and consider communications from or on behalf of individuals or groups of individuals subject to its jurisdiction who claim to be victims of a violation by that State Party of the provisions of the Convention.*[42] The Protocol thus gives additional tools to persons with disabilities and their representatives to challenge lack of equal access and violation of the Convention when all domestic means of doing so have already been exhausted.[43]

A recent decision by the Committee makes it clear that financial services fall directly within the mandate of the Convention. Two Hungarians citizens who are blind brought a complaint against Hungary for failing to ensure that private banks provide accessible financial services and uphold the mandates of the Convention.[44] The Committee found for the plaintiffs under Article 9(2) which requires States to ensure that private entities offering services to the public address accessibility for persons with disabilities. The plaintiffs were unable to use ATMs in their vicinity due to their inaccessibility and tried multiple legal avenues within their country. The bank in question claimed that it was the government's responsibility to ensure accessibility, and that too only for buildings. They also used the notion that making all ATMs accessible constitutes positive discrimination, which could only be mandated by a change in law. Additionally, they stated that customer contracts preceding the passage of the "Equal Treatment Act."

The Committee's decision clearly highlighted the growing need for States to take steps to ensure that persons with disabilities are able to access all kinds of financial services on an equal basis as persons without disabilities. Specifically, the Committee also demanded that the country establish minimum accessibility standards for banks to meet the needs of persons with disabilities and provide training on the Convention and its Optional Protocol to judges to ensure disability sensitive decisions in the future.

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[42] Optional Protocol to the Convention on the Rights of Persons with Disabilities, G.A. Res. 61/106, Annex II, U.N. Doc A/RES/61/106 (Jan. 24, 2007).
[43] *Id.* at Article 2d.
[44] Office of the High Commissioner for Human Rights (2013, May 16). UN disability rights body confirms that equal access to banking services should be granted to all. Retrieved June 12, 2014, from http://www.ohchr.org/EN/NewsEvents/Pages/accesstobankingservices.aspx.

Standard Rules on the Equalization of Opportunities for Persons with Disabilities
The Standard Rules on the Equalization of Opportunities for Persons with Disabilities were adopted by the General Assembly on December 20, 1993.[45] Although the rules are not legally binding, they represent the moral and political commitment of States to take action for equalization of opportunities for persons with disabilities. *The rules serve as an instrument for policy-making and as a basis for technical and economic cooperation.*[46] Rule 5 talks about accessibility, and lays down the obligations as follows:

States should recognize the overall importance of accessibility in the process of the equalization of opportunities in all spheres of society. For persons with disabilities of any kind, States should (a) introduce programs of action to make the physical environment accessible; and (b) undertake measures to provide access to information and communication.[47]

An important part of this obligation would be increasing accessibility to financial services, as it is imperative that financial independence and security be provided to members of the population who are either disabled or elderly. This would also facilitate the agenda of Rule 8, that is, income maintenance and social security.

Riga Ministerial Declaration
In Europe, the 2006 Riga Ministerial Declaration set certain targets for 2010, aimed at ICT accessibility for several groups, including persons with disabilities. However, commentators have found that the current development is inadequate and though there are divergences within Europe, by and large the *social differences in ICT use persist and in some cases are even widening*. For example, one such target was the reduction by 50% of the gaps between the average EU population and that of older persons, persons with disabilities, lower education groups and so on. But significant gaps have remained: for example, in the EU-27 average population, around 45% are regular internet users, but in the segment of persons older than 65 years, only 10% are internet users. It is projected that such disparities will continue over the next few decades.[48] This will have a direct effect on the way older customers and customers with disabilities access financial services as well, with more and more banks reducing their physical presence and replacing it with services online.

Another target from the Riga Declaration is relevant in this regard: the target was for all public sites to comply with the Web Content Accessibility Guidelines 1.0 – a target with special relevance for persons with disabilities. However, as per the survey, only a minority of surveyed public websites was fully compliant with the Guidelines,[49] which themselves are out of date now, with the WCAG 2.0 being available. This is of concern when we talk about banks and financial institutions which are run by various governments and which need to be in compliance

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[45] United Nations Enable, The Standard Rules on the Equalization of Opportunities for Persons with Disabilities. Retrieved June 15, 2014, from http://www.un.org/disabilities/default.asp?id=26.
[46] *Id.*
[47] *Id.* at Rule 5
[48] Commission of the European Communities (2007), European i2010 initiative. "To Be a Part of the information society" [SEC(2007) 1469]. Retrieved June 15, 2014, from http://www.eye-ekt.gr/%28S%282b5hacat045x0b4555z0c145%29%29/Hypertrak/BinaryContent.aspx?pagenb=53008.
[49] *Id.*

of these standards and guidelines, as they cater to a large population of customers with disabilities.

Action Plan on Information and Communication Technologies and Ageing

European banks and financial institutions should also keep in mind the European *Ageing well in the Information Society: Action Plan on Information and Communication Technologies and Ageing,*[50] since making financial services more accessible for persons with disabilities also makes them more accessible for the older population. The Action plan considered two major moves (text taken from the Action Plan):

- Removing legal and technical barriers … with a view to removing legal and technical barriers to the uptake of ICTs for independent living.
- Raising awareness and building consensus through the cooperation and development of partnerships between the different stakeholders.

By co-operating with other banks on creating better access to financial services, banks and financial institutions will go a long way in meeting these goals as well.

Biwako Millennium Framework

In Asia Pacific, an important international document to be kept in mind is the Biwako Millennium Framework for Action towards an Inclusive, Barrier-Free and Rights-Based Society for Persons with Disabilities in Asia and the Pacific.[51] The Framework provided policy recommendations for governments in the Asia and Pacific region and concerned stakeholders. In the Framework, an important target and priority area was access to information and communications (including ICTs and assistive technologies). The Framework, for example, recognizes that recent advances in ICT have not been completely inclusive: *For example, online processes for registration, banking or shopping transactions may not be accessible to persons with cognitive/intellectual, physical or visual and/or auditory disabilities.*[52] While the Biwako Framework was extended by the Asian and Pacific Decade of Disabled Persons only for another decade till 2003-2012,[53] the learning and principles of the Framework remain relevant, especially when considering other regional instruments.

For example the Pacific Regional Strategy on Disability 2010-2015 was passed in October 2009,[54] and takes support from the basic principles of the UNCRPD and the Biwako Millennium Framework. In its fourth thematic area, the Strategy discusses disability inclusive development, and stresses on accessibility provisions in infrastructure provisions.[55]

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[50] The European Commission (2007), Ageing well in the Information Society: Action Plan on Information and Communication Technologies and Ageing. Available online at http://eur-lex.europa.eu
[51] Text of the Framework is available at the UNESCAP page, at http://www.unescap.org/sdd/.
[52] *Id. at* Para 39, Page 18 of the Framework, E/ESCAP/APDDP/4/Rev. 1, at http://www.unescap.org/sdd/.
[53] Summary of the Note of the Secretariat on the Biwako Millenium Framework, available at http://www8.cao.go.jp/shougai/english/biwako/contents.html.
[54] Text of the Pacific Regional Strategy on Disability 2010-2015 can be accessed at: http://www.forumsec.org.fj/resources/uploads/attachments/documents/Pacific%20Regional%20Strategy%20on%20Disability.pdf.
[55] Pacific Regional Strategy on Disability, Page 12, available at http://www.forumsec.org.fj/resources/uploads/attachments/documents/Pacific%20Regional%20Strategy%20on%20Disability.pdf.

The International Telecommunication Union (ITU) has also recognized the problems faced by persons with disabilities, and has identified that several individuals *who are already marginalized in terms of their spatial or social access to technologies are becoming increasingly disadvantaged because … their serious disabilities are not addressed by the available technological solutions.*[56]

Accessibility of financial services, though not the subject matter of an individual international instrument, is adequately covered by existing conventions, most particularly the Convention. However, a big challenge, not just for banks and financial institutions but for the entire global community remains to develop accessible and affordable means of accessing financial services for persons with disabilities and diverse abilities. The following chapters of this report look at some good practices in this area.

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[56] International Telecommunication Union (2011), The Role of ICT in Advancing Growth in Least Developed Countries. Retrieved June 15, 2014, from http://www.itu.int/ITU-D/ldc/turkey/docs/The_Role_of_ICT_in_Advancing_Growth_in_LDCs_Trends_Challenges_and_Opportunities.pdf

CHAPTER 3: INTEGRATING ACCESSIBILITY INTO THE SYSTEM

There are several effective practices and policies that financial service providers can employ or adopt to ensure that their services, through any mode of operation or delivery channel, are as accessible as possible to customers with disabilities. The cost of many solutions is not prohibitive especially if properly planned at the earliest possible phase of design and development. These efforts and investments will generate return on investment through an increasing customer base as the changes will benefit persons with and without disabilities such as those with different language skills and persons who are aging. This will also result in greater customer loyalty.

As documented in the UK Life Opportunities Report: For those who dealt with their finances themselves, and were used to visiting a bank branch in person, having to stand in queues was often an issue. Those who were satisfied with their banks mentioned aspects of the customer service such as dealing with the same member of staff, being able to sit down while discussing financial matters, and receiving clear explanations and polite treatment from staff.[57]

Thus even minor adjustments – like making a person with a physical disability sit down while transacting with them, instead of making them stand – can go a long way in improving the way persons can access the services offered by banks.

This chapter looks at some effective accessibility solutions which can be adopted by banks and financial institutions across different modes and means of interacting and communicating with their customers.

In-branch banking

Accessibility and inclusion in receiving financial services in brick and mortar offices involves three aspects: reducing physical and environmental barriers, reducing barriers to accessing information, and sensitizing staff to work respectfully with persons with different disabilities.

Several guidelines are available to ensure barrier-free experiences for customers, such as:
1. Ensure offices and all points of services (including cash counters, tellers, and ATMs) are physically accessible. Physical accessibility includes ramps, elevators, non-slip flooring, automatic door openers, lower counters, and offices free of clutter and clear pathways.
2. Provide signage through alternative means including Braille lettering, large print signs, and tactile signs. Announcements of token numbers should be made through visual and audio means.
3. Documentation and information should be available in alternative formats same time or upon request, including Braille, plain or simple language, large print, and audio formats where possible.
4. Provide technology solutions such as text phones and devices that allow a customer and staff person to communicate via text to facilitate communication for individuals with hearing impairments.
5. Offer sign language interpreters where possible.

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[57] "Access to Goods and Services", page 142, Report on Life Opportunities for Disabled People, available at http://odi.dwp.gov.uk/docs/res/los/los-qr-cc.pdf.

Internet banking

Internet banking is increasingly popular with customers, due to its convenience and ease of use and access; it removes the necessity of physically going to a bank. Since physical banks are often difficult for persons with disabilities to get to or navigate, internet banking could provide the best solution. However, banks can make their websites more accessible and follow the prescribed guidelines such as WCAG and usability principles, to ensure a better banking experience with adequate security not just for their customers with disabilities, but for all customers.

The biggest obstacle that comes with developing internet banking options which are accessible to all is the wide diversity in the persons who are trying to access the banks' websites with or without assistive technologies or aids, and it is here that universal design comes into play. The goal of universal design is to have each web page accessible by all persons, instead of providing separate web pages for persons with disabilities. This requires, for example, for persons who are blind, adjustable fonts or contrasts, keyboard navigation, textual equivalents for all images, and reading order and structure compatible with screen reading or text augmentation tools or devices and magnifiers; for persons who are deaf, visual equivalents such as captions for all audio information; and for persons with motor disabilities, means to navigate the page without fine motor control.

There are a set of standards in place for website accessibility. The Web Content Accessibility Guidelines ("WCAG") 2.0 specify the manner in which the material on any website is to be perceivable, operable, understandable and robust.[58] Under these four stated principles of web content accessibility, twelve guidelines have been given, which give the web content developers a framework and set of objectives to understand the needs of the disabled. There are also levels of conformance that are defined for each guideline, and a list of sufficient and advisory techniques has also been given.[59]

The WCAG 2.0 Guidelines includes some basic steps, such as including text alternatives for all non-text objects, including descriptors or captioning for images, audio and animated sequences, and following a style sheet wherever possible, in order to maintain a consistent design. These guidelines address needs of persons with different disabilities and cover scripting, form accessibility, easy navigation, mouse-less navigation, alternative information formats, and usability with different types of assistive technology. The guidelines deal with visibility and display (using contrasting colors for background and text; using relative sizing so that the text can be increased to up to 20 percent), functionality (providing skip links such as "Back to Top"; ensuring that animation can be paused or switched off; ensuring keyboard as well as mouse functionality), and formatting (setting the language attribute of each page; providing clear navigation mechanisms; ensuring that all markup is validated and coded correctly), amongst others.[60] A critical guideline to be followed is that visual information should also be coupled with audio information, and that frequency and volume of the audible cues should be capable

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[58]See generally: "WCAG 2 at a Glance," available at http://www.w3.org/WAI/WCAG20/glance/.

[59]See generally: "Website Accessibility," available at http://www.tiresias.org/research/guidelines/web.htm.

[60]For more details, see generally: "Website Accessibility", available at
http://www.tiresias.org/research/guidelines/web.htm.

of being configured and controlled by the user.[61] Following the guidelines allows designers to be considerate to persons with different disabilities.

Internet banking can offer a wide array of services from checking account balances and transferring funds, to paying bills, applying for loans, and connecting with customer service representatives. Thus, it involves several different programming elements and information formats including HTML forms, documentation and security portals.

Internet banking offerings can be made accessible through the following considerations:

1. Follow accessibility guidelines in developing mobile applications, website interfaces, and mobile content such as the Web Content Accessibility Guidelines (WCAG) 2.0[62] for web sites, best practices in mobile accessibility, and Authoring Tool Accessibility Guidelines (ATAG) 2.0.[63]
2. Conduct thorough accessibility testing of the websites prior to deployment, and provide accessible means to receive consumer feedback on any accessibility barriers.
3. Ensure usability is not compromised by accessibility and vice versa. The two approaches should be paired in order to maximize user experience.
4. Ensure documentation, including statements, is available in print or pen formats as well as digital formats such as HTML or RTF, so that they can easily be read by screen readers and any other assistive technology or aid, and offer accessible and alternative formats such as audio, large size fonts, accessible e-text or DAISY formats, and printable in Braille.
5. Ensure independent login processes by ensuring access without the use of a mouse, and through assistive technology such as screen readers and voice recognition software.
6. Offer alternatives to CAPTCHA and virtual keyboards for security and privacy measures. There are some alternatives to the visual CAPTCHA codes available, such as audio codes or math questions. There are also human aided accessible CAPTCHA services (such as Solona), where the customer can send a screenshot of the screen to an aide. However, this has several security and privacy implications, and is not an ideal solution. Multimedia on web sites should be made optional, with a clear possibility of turning the music or animation off, so that users can use assistive devices such as screen readers without any problems.
7. When One Time Passwords (OTPs) or other authentication codes are sent through SMS or email for authentication purposes, provide sufficient time to allow users with disabilities to access and enter the codes online.
8. Offer real time access to customer service representatives through instant chat, video conferencing with captions, or video relay services that enable real time sign language interpretation.
9. Provide accessible guides and tutorials to help customers in navigation and use of websites as well as other forms of banking including transactions at a branch or through

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[61]"Deaf and Hearing Impaired", Woei-Jyh Lee, Handbook of Universal Usability in Practice, available at http://otal.umd.edu/UUPractice/hearing/, last viewed on 23 July, 2012.
[62] W3C (2010), Mobile Web Application Best Practices. Retrieved July 9, 2014, from http://www.w3.org/TR/mwabp/.
[63] Authoring Tool Accessibility Guidelines (ATAG) 2.0. Retrieved July 8, 2014, from http://www.w3.org/TR/ATAG20/.

their mobile devices. Developing accessible manuals that take one through the various steps that are involved in withdrawing cash or using an ATM would greatly assist customers with disabilities who are using a new format or type of bank machine for the first time.

10. Provide a hotline or chat service to assist customers with navigation and use of Internet banking facilities.
11. Ensure that error messages are provided through text and audio formats.
12. Use simple language and design to avoid confusion and enhance clarity.

Mobile banking

The increasing use of mobile banking or "m-banking" wherein different financial services are accessed through mobile devices has a lot of positive implications for persons with disabilities. This accessibility means that a lot of persons with disabilities who live in rural areas, who have earlier not been able to access banks, can now do so using their mobile phones. Mobile banking, at times advertised as "a branch in your pocket,"[64] makes it much easier for customers with bank accounts to access their details and conduct transactions. The hope for mobile banking in the future is that it will enable "banking anywhere/anytime through any device."[65]

Consider the example of Scotiabank, which along with DigiCel and YellowPepper launched a "mobile wallet" financial service called TchoTcho Mobile in Haiti, after their recent earthquake.[66] The service requires an SMS-capable cellphone,[67] on which the user can create a digital wallet which can be used for many financial transactions, including making deposits, paying bills, receiving grants and so on. The application is not limited only to smartphones, and thus can be accessed by any device. This is the kind of service model that needs to be replicated, as it is incredibly accessible for persons with disabilities. They can securely and safely conduct transactions from their mobile phones anytime or in times of emergency. This feature also bypasses the problems faced by customers with disabilities who want to use mobile banking apps, which are often not accessible on phone screen readers. The success of this model in Haiti and other low-income areas, like Kenya (M-Pesa) and other Latin American countries like Paraguay,[68] indicates that this is a viable and profitable option for banking service providers to adopt.

The adoption of mobile banking among financial service providers and customers is increasing rapidly across countries. In addition to offering traditional banking features over mobile devices, institutions are focusing on the growing use of digital wallets which would enable greater

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[64] McGarvey, R. (2014, January 8), 5 mobile banking trends to watch in 2014. *Credit Union Times.* Retrieved July 21, 2014, from http://www.cutimes.com/2014/01/08/5-mobile-banking-trends-to-watch-in-2014?page=2

[65] D'intino, P. (2013), Changing the perception, accessible banking. Paper presentation, Beijing, October 15-16, 2013.

[66] See generally: Page 182 of the ScotiaBank Annual Report 2011, available at http://www.scotiabank.com/ca/common/pdf/ir_and_shareholders/280183_Scotia_ENG_AR.pdf.

[67] Carr, A. (2011, August 24), TchoTcho's Digital Mobile Wallets are Boosting Haiti's Economy. Retrieved June 15, 2014, from http://www.fastcompany.com/1775804/tcho-tchos-digital-mobile-wallets-are-boosting-haitis-economy

[68] Arabehety, P.G. (n.d.), Good news from Haiti: first success story for the mobile wallet in Latin America and the Caribbean. Retrieved June 15, 2014, from http://www.movilion.com/good-news-from-haiti-first-success-story-for-the-mobile-wallet-in-latin-america-and-the-caribbean/.

payments through mobile phones for online and in-person purchases. Mobile banking allows persons options to organize their finances and pay for goods and services on the go.[69] Persons access financial services through their mobile devices through SMS and text messaging services, dedicated mobile applications (apps), and by accessing providers' websites through mobile browsers.[70]

In addition to applying recommendations for accessible Internet banking, mobile banking offerings can be made accessible through the following considerations:

General recommendations:
1. Follow accessibility guidelines in developing mobile applications, website interfaces, and mobile content such as the Web Content Accessibility Guidelines (WCAG) 2.0[71] for web sites, best practices in mobile accessibility, and Authoring Tool Accessibility Guidelines (ATAG) 2.0.[72] Designing apps to be accessible will ensure that they can work seamlessly with mobile assistive technologies and features, such as iOS's built-in screen reader feature VoiceOver with proper labeling and scripting.
2. Following accessibility guidelines also applies to third party app developers for apps that facilitate the use of financial services such as those that can take a photo of currency and identify it.
3. Test all mobile applications and websites for accessibility on different mobile platforms.
4. Use SMS and text messaging tools for communication, including real-time communications for customer service access for customers with hearing impairments.
5. Ensure error and other messages are provided through auditory and non-auditory means and cues.
6. Offer captioned or video relay or video conferencing services to allow customers to interact with bank and customer service officials through a sign language interpreter or through text captioning.
7. Offer remote deposits of checks through accessible banking apps that take and upload a photo of the check.

Banks should leverage the flexibility and utility of mobile banking including the use of responsive design and personalization to increase access to their customers who have disabilities, as it would result in a much better customer experience and mean lesser expenses for both the banks as well as the customers.

Automated Teller Machines (ATMs)
Several countries and banking regulators have issued guidelines and instructions on making ATMs accessible to persons with disabilities. ATM accessibility is not merely a function of

[69] Future Foundation (n.d.), Emerging trends in mobile banking. Retrieved July 23, 2014, from http://www.monitise.com/uploads/assets/docs/money_on_the_move_chapter_4.pdf.
[70] Board of Governors of the Federal Reserve System (2013), Consumers and mobile financial services 2013. Retrieved July 21, 2014, from http://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201303.pdf.
[71] W3C (2010), Mobile Web Application Best Practices. Retrieved July 9, 2014, from http://www.w3.org/TR/mwabp/.
[72] Authoring Tool Accessibility Guidelines (ATAG) 2.0. Retrieved July 8, 2014, from http://www.w3.org/TR/ATAG20/.

providing some Braille labels or voice output for limited navigation. Rather it has to focus on making all transactions, instructions, and error messages issues by ATMs to be as accessible to persons with disabilities as users without disabilities.

The American Department of Justice (DoJ) notified a final ruling on the standards of accessibility relating to ATMs under the Americans with Disability Act (ADA). Such standards range from requirements that signs be in Braille, a voice guidance system, and input controls for blind users.[73,74] All ATM owners are to comply with these guidelines when constructing or altering ATMs. The Australian Bankers' Association adopted voluntary standards all several aspects of banking accessibility including a Standard for ATMs.[75] This standard extensively covers issues of physical and technology accessibility. The Indian Banks' Association (IBA) has issued a Standards document on Accessible ATMs for customers with disabilities, and has also released a work flow document to be followed by various banks. The IBA Standards documents states that:

The fundamental principle of an Accessible ATM for development, testing and implementation purposes is to ensure a machine which enable the user to complete all transactions successfully with a blank screen simply through voice guidance for totally blind users, permit independent use through clear screen data for low vision / partially sighted users and effective physical access for wheel chair users.

The recommendations below offer an insight into how accessibility can be mainstreamed into ATM design and operation based on recommendations provided by these different standards:

1. Physical access to ATMs: ATMs height and reach should be appropriate for different users, including those who use wheelchairs. The DoJ's recommendation is that the reach should be between 15 and 48 inches, and ensuring that the keypad, touch screen, and card insertion slots are at suitable heights and reach.
2. The area with an ATM should be physically accessible, have proper lighting, and signage in appropriate formats, including Braille, large print and tactile signs.
3. Banks and ATM providers should disseminate information about the location of accessible ATMs, especially in countries where ATM accessibility is not mandated.
4. ATMs must be equipped with both voice guidance systems as well as Braille language signage. This would mean adding a headphone jack to the machine, so the audio is heard only by the user as well as adding the ability for the user to turn off the screen display and thus ensuring his privacy.
5. ATM displays should have a proper level of contrast and should be clear and readable for persons with different disabilities such as low vision (suggestions are to use sans serif font, contrasting text and background, use of upper and lower case letters).
6. Spoken input and voice recognition can be a great benefit to persons who are unable to use the tactile or touch screen menu.
7. Audio output is essential for accessibility and should be available for all transactions and processes including specific error messages.

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[73] "Department of Justice finalises New ATM Accessibility Standards." Retrieved June 15, 2014, from http://www.eriefcu.org/files/locations/accessibilitystandards.pdf.
[74] *Id.*
[75] Australian Bankers' Association Inc. Industry Standard Automatic Teller Machines (ATM). Retrieved July 22, 2014, from http://www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking-/ATM-Standard.

8. Braille signage should be available to access and identify ATM components and keys on the keypad.
9. Feedback mechanism and error messages should be provided in both visual and audio formats with clear articulation of the type of error or content of feedback.
10. Standardization of ATM features, keyboard specifications, and navigation structures across manufacturers can significantly help in improving ease of use for persons with disabilities.

Different countries may issue their own standards and guidance on making ATMs accessible.

Currency

For currency to be most effective as a means of payment, all users should have barrier-free access. The ability to conduct financial transactions using bank notes is crucial to independent living.[76] Yet this can pose significant challenges for individuals who are blind or have low vision.

Physical currency (both notes and coins) are confusing and often cannot be distinguished from each other by merely feeling them. It is important to ensure that notes of different denominations are easily distinguishable from each other in terms of size, color and so on, and a similar distinction should be made between coins of different denominations.

Whether it is the printing of differently colored notes, large print on the notes, or the development of "raised-texture tactile features,"[77] there are several alterations that can be made to the currency.

In countries such as Canada, development of bank notes is based on a "continuous process that relies on scientific and empirical research, together with direct feedback from bank note user groups and experts. The bank consults Canadians living with blindness and low vision, as well as their representative organizations and vision experts, to identify the needs of this community and to explore potential solutions."[78] In Canada, all notes include a number of Braille cells as tactical indicators to differentiate the value of each note. Every coin has a different finish, such as ridges or rounded edges that enable individuals to identify their coins.

Several assistive devices as well as mobile applications[79] have been developed to aid in currency identification by photographing the notes or scanning them with the mobile device's built-in camera.[80]

Telephone banking

Telephone banking usually combines automated services to conduct financial transactions without the need to speak with a representative and interaction with customer service

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[76]Samuel , C. (2010), Making Bank Notes Accessible for Canadians Living with Blindness or Low Vision. *Bank of Canada Review, 2009/10*(1). Retrieved June 15, 2014, from http://www.bankofcanada.ca/wp-content/uploads/2011/08/samuel.pdf.

[77]*Id.*

[78]*Id.*

[79] For example, see a list of apps for the iPhone at http://assistivetechnology.about.com/od/ATCAT6/tp/Top-10-Iphone-Apps-For-The-Visually-Impaired.htm.

[80] Sutton, J. (2012), The Magic of Mobile Money Identification. User Experience Magazine, 11(2). Retrieved July 23, 2014, from http://www.uxpamagazine.org/magic-of-mobile-money-identification/.

representatives. To conduct automated transactions, the banking system may employ Interactive Voice Response (IVR) technology or touch-tone features of the user's phone. For persons with disabilities, telephone banking could be very useful, if the proper tools are made available to them. However, persons with hearing, speech, and even dexterity impairments may face several barriers in successfully using phone banking services. In some cases, getting in touch with a person on the other end can be quite difficult if not completely unavailable.

The following steps can facilitate accessibility and usability in telephone banking systems:
1. Allow multiple ways on receiving input. If a person with a hearing or speech impairment is unable to use the IVR system, they should be provided with alternative options to provide input includes touch-tone dialing or requesting an operator.
2. Enable the use of TTY services where available (e.g. ensuring that IVR systems can work well with TTY or providing standalone TTY numbers for telephone banking), while keeping in mind that some characters commonly used by automated systems such as "#" or "*" may not be available on a keyboard.
3. Use video relay services to facilitate telephone banking for consumers using sign language.
4. Provide adequate time for user responses to automated queries such as entering account number.
5. Ensure authentication policies can accommodate the need for an interpreter or personal aid to help conduct the transaction.
6. Provide manual operators and signal their availability to callers early on in the call.
7. Telephone banking can be combined with mobile banking services such as SMS to facilitate ease of access for the customer.

Systemic changes for accessibility and sustainability

An organization wide commitment to promote accessibility can drive systemic change in financial inclusion. This involves developing accessibility mandates and commitment statements that are supported and promoted across the organization through the injection of accessibility language and requirements in organizational frameworks, training of personnel, commitments and accountabilities, policies and procedures, and compliance and reporting. While many organizations are responding to accessibility requirements as a result of new regulations, a survey from G3ict in 2013 amongst 13 global financial institutions reveals that 91% of respondents include accessibility as a result of executive support and organizational direction.

Injecting accessibility practices and requirements in the entire product and services design process, which includes the conceptualization of new products or services, the design and development, testing and release, and subsequent change management processes. Embed accessibility checkpoints and funding in business cases and business requirements at the earliest phase. It has been proven over and over again that injecting accessibility requirements at the earliest phase of any project is much more cost effective than having to remediate or retrofit. Whether building a new branch and incorporating accessible entry ways or ramps or whether injecting accessibility checklists and checkpoints in the project methodology or development life cycle, incremental costs for accessibility can vary from 2-50% if left to the end of a project. Furthermore the ability to include those costs early on will allow for better data collection which can improve the analysis that support and understand the return on investment.

CHAPTER 4: STATE OF PRACTICE - IMPACT OF THE CONVENTION ON INCLUSIVE FINANCE AND ACCESSIBILITY EFFORTS AROUND THE GLOBE

In an effort to understand the current state of practice in accessibility of financial services, G3ict has gathered relevant data through two different studies. The first includes the work done to compile the third edition of the CRPD ICT Accessibility Progress Report which focuses on the implementation of CRPD articles related to ICTs and assistive technologies across States Parties. The second includes a targeted and focused survey on financial inclusion for persons with disabilities and older adults. This section offers insight into the current practices on financial inclusion for persons with disabilities as well as the sector's focus on accessibility in future work.

CRPD ICT Accessibility Progress Report

Description and methods

The CRPD ICT Accessibility Progress Report, in its third edition, provides some valuable information to increase the accessibility of financial services around the world. As background information, the Progress Report is a snapshot of each State Party revealing the dispositions of the CRPD on accessible ICTs and Assistive Technologies actually in place in each surveyed country through their laws, policies and regulations, and its impact. Two sets of surveys were filled out by 86 respondents in 76 countries and then analyzed to explore the effects of laws, regulations and policies on the implementation of accessible ICT services and products in the surveyed countries. This section covers the findings for ICT enabled financial services. The data collected in 2013 includes 76 States Parties corresponding to 72 percent of the world population and 81 percent of the total population of ratifying countries and is organized in three segments:

- The first one inquires about the State Party CRPD legal and commitments' status;
- The second inquires about the State Party capacity for implementation; and
- The third one assesses the State's implementation and actual results for persons with disabilities.

Data collection for the third edition of the Progress Report was completed in cooperation with Disabled People's International (DPI) and various disabled person's organizations and experts in countries where DPI correspondents were not available. Researchers applied inferential and descriptive statistical analysis to assess the countries' status and level of compliance.

As part of the inferential statistical analysis, researchers performed Logistic Regressions to understand the relationships or effects of variables contained in the survey. In this case, researchers explored the effect that regulatory conditions and capacity for implementation have on the countries' implementation and their impact. Based on the recent CRPD study, there is a relationship between legal regulations, the capacity for implementation of each country and accessible public kiosks and ATMs in place in the country (considered as dependent variables in the analysis). Under the category of legal regulations, a definition of "Reasonable Accommodation" included in its law or regulation pertaining to the rights of persons with disabilities and "facilitate access by persons with disabilities to assistive technology" were analyzed as independent variables. Under the category of capacity for implementation of each country "statistics or data available about Digital Access for persons with disabilities," "a forum

for the active cooperation between NGOs" and the "country participation to the work of International Standards Development Organizations," were analyzed as independent variables.

The CPRD 2013 ICT Accessibility Progress Report data identifies the regulatory and policy factors that exist in countries with greater likelihood of accessible ATMs and electronic public kiosks, offering an insight into strengthening overall legislative and regulatory frameworks that may in turn improve the conditions and environment for better inclusion in access to financial services. It also demonstrates that an improvement in government focus and in the support for NGOs and DPOs could be of value to better address the challenges for accessible public electronic kiosks or Automated Teller Machines (ATMs) around the world. As shown by graph 1 based on the report data, most countries do not have policies addressing accessible ATMs and electronic public kiosks.
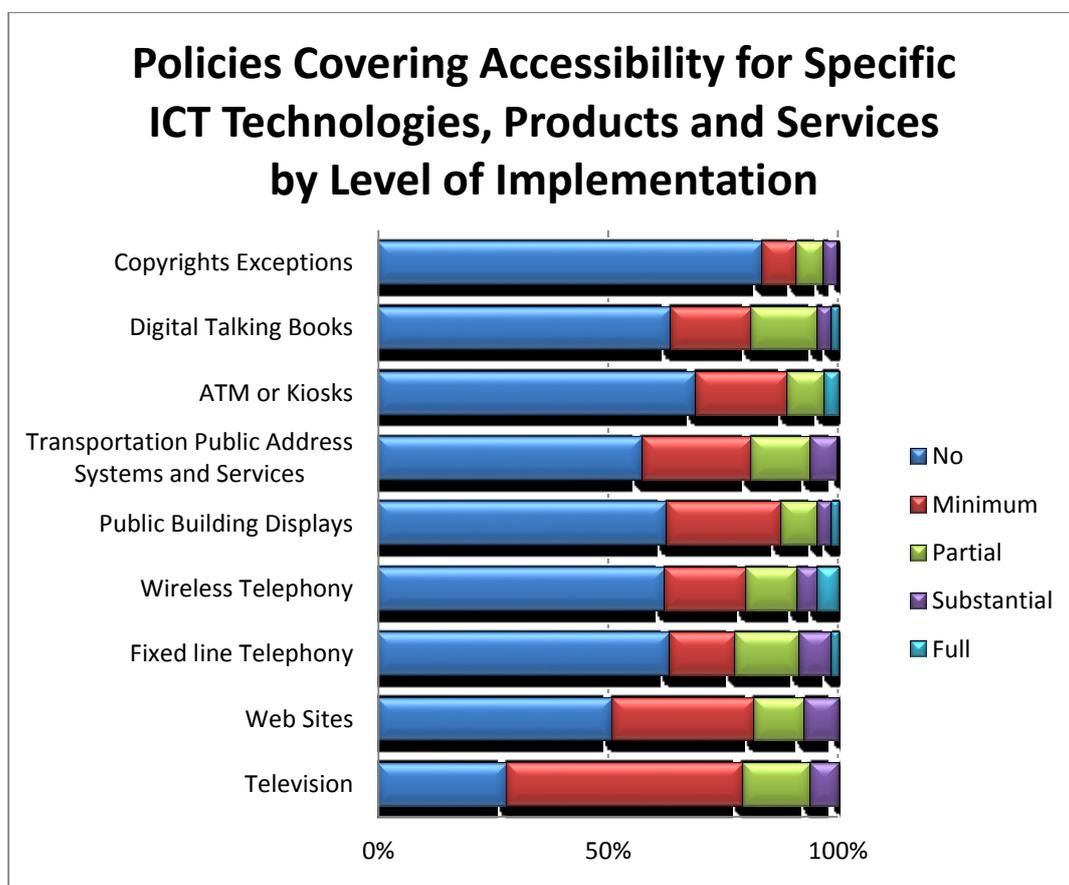
Figure 1: Policies Covering Accessibility for Specific ICT Technologies, Products and Services Source: G3ict CPRD 2013 ICT Accessibility Progress survey data

Effect of the regulatory framework

As per the data analysis, if each country has a comprehensive definition of "Reasonable Accommodation" included in its law or regulation pertaining to the rights of persons with disabilities, it is more likely that financial services are made accessible through the provision of public electronic kiosks or ATMs that would be deployed in the country. In addition, if the country has a legal framework that facilitates access by persons with disabilities to quality mobility aids, devices, assistive technologies, and forms of live assistance and intermediaries

available at affordable cost, it is more likely that it will have accessible ATMs or public kiosks in place as well.

As shown by the descriptive statistical analysis, there is a need for improvement in deploying accessible electronic public kiosks and ATMs among the State Party countries. As demonstrated by Graph 2, 62 percent of the surveyed countries do not have accessible kiosks or ATMs. To better understand the scenario, the data was analyzed by country level of income and by region. 71 percent of the high income countries (table 1: below) do have them in place; however, there is a huge gap compared to upper-middle (38 percent), lower-middle (25 percent), and low income countries (20 percent). The data per region shows that Africa (table 3: below) faces the most challenges since it needs to better adapt its legal regulatory (43 percent of compliance) framework to set up the conditions for implementing more accessible electronic kiosks and ATMs (27 percent of implementation, as shown in table 2: below).
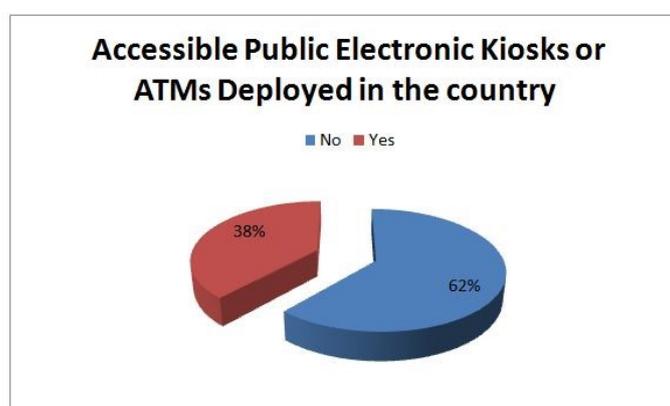
Figure 2: Accessible Public Electronic Kiosks or ATMs
Source: G3ict CPRD 2013 ICT Accessibility Progress survey data.

As shown in table 3 (below), States Parties in Africa (43 percent) and Asia (50 percent) need to have a definition of "Reasonable Accommodation" included in any law or regulation regarding the Rights of Persons with Disabilities in order to better implement accessible public electronic kiosks and ATMs. In addition, Asia (50 percent), Africa (43 percent) and Latin America and the Caribbean (45 percent) have few laws and regulations to facilitate the access by persons with disabilities to quality mobility aids, devices, assistive technologies and forms of live assistance and intermediaries, and make them available at an affordable cost for improved deployment.

Table 1: Information about Accessible ATMs/Kiosks per Country's Level of Income
Source: G3ict CPRD 2013 ICT Accessibility Progress survey.

Values (Average)	High Income	Upper Middle	Lower Middle	Low Income
Accessible public electronic kiosks or ATMs deployed in the country	71%	38%	25%	20%

Table 2: Information about Accessible ATMs/Kiosks per Region
Source: G3ict CPRD 2013 ICT Accessibility Progress survey.

Values (Averages)	Africa	Asia	Europe	Latin America and The Caribbean	Oceania
Accessible public electronic kiosks or ATMs	27%	36%	41%	58%	67%

Table 3: Reasonable Accommodation by States Parties to the Convention - Asia, Africa, Latin America and The Caribbean, and Oceania.
Source: G3ict CPRD 2013 ICT Accessibility Progress survey.

States Parties Level of CRPD Accessibility Compliance by Region	Africa	Asia	Europe	Latin America and The Caribbean	Oceania
Legislation includes a definition of "Reasonable Accommodation"	43%	50%	75%	90%	100%
Facilitate Access by PWD to Assistive Technology	43%	50%	81%	45%	100%

Capacity for implementation and effect of government focus

After concluding its September 23, 2013 High Level Meeting on Disability and Development, the U.N. General Assembly emphasized that for achieving and ensuring inclusion and for better addressing disability in internationally agreed-upon development goals, including the Millennium Development Goals, some priorities have first to be met. One of the main ones corresponds to the need to strengthen disability data and statistics, analysis, monitoring and evaluation. This conclusion is also shared by UN Enable; it accentuated the importance of having accessible current and reliable data as fundamental for policy formulation and evaluation processes.

Data availability, however, is dismal: the 2013 edition of the G3ict/DPI CRPD ICT Accessibility Progress Report shows that a mere 9 percent of State Parties have either statistics or data accessible for the general public about digital access by persons with disabilities. As shown by the inferential analysis, countries that have data about digital access for persons with disabilities are more likely to have audio/ accessible ATMs or a better implementation of electronic kiosks or ATMs.

Table 4 shows that in some regions, for instance, Latin America and the Caribbean there is no data available about digital access for persons with disabilities. Considering that the region has a total population amounting to 588 million persons and with 79 percent of the population living in urban areas, it is clear that supporting information is needed for policy formulation and implementation.

Table 4: Data available about Digital Access by States Parties to the Convention - Asia, Africa, Latin America and The Caribbean, and Oceania
Source: G3ict CPRD 2013 ICT Accessibility Progress survey.

States Parties Level of CRPD ICT Accessibility Compliance by Region	Africa	Asia	Europe	Latin America and The Caribbean	North America	Oceania
Statistics or Data available Digital Access for PwDs	4%	14%	13%	0%	0%	33%

The effect of involving DPOs and NGOs

The CRPD ICT Progress report mentions that *DPOs today are empowered by the rights-based approach of the CRPD and see their role as being, first and foremost, advocates for the empowerment and the active participation of persons with disabilities in decision making,* which translates into: *Nothing about us without us.* Also the 2011 policy paper, *Support to Organizations Representative of Persons with Disabilities*, by Handicap International (HI) emphasizes the role of DPOs. It is crucial to engage DPOs in projects and initiatives in support of the disability movement since they are essential actors to improve the participation of persons with disabilities and they have a special role to play to enhance access to quality services for the community.

In this particular case, countries that involve DPOs in the promotion and organization of forums for the active cooperation between NGOs working in the field of digital access and the government officials are more likely to have accessible ATMs and/or kiosks. However, only 24% of surveyed Party States reported organizing forums to promote the above mentioned active cooperation, as shown by table 5.

Table 5: Support of DPOs and NGOS
Source: G3ict CPRD 2013 ICT Accessibility Progress survey.

States Parties Level of CRPD ICT Accessibility Compliance by Region	Africa	Asia	Europe	Latin America and The Caribbean	North America	Oceania
A Forum for the Active Cooperation between NGOs	22%	21%	33%	10%	100%	33%

The effect of Capacity Building

International organizations such as ITU and UNESCO play a key role in providing neutral and harmonized platforms to develop and adapt international standards; and subsequently to provide accessible ICT related recommendations. In addition, these organizations can be of great value for promoting research and development focused on developing specific ICT-enabled solutions for persons with disabilities. According to ITU, in order to advance in promoting ICT accessibility, "governments, industry and private sector organizations, research

centres as well as organizations representing persons with disabilities are encouraged to contribute to the work of international standards organizations such as the ITU's Standardization sector, the International Electro Technical Commission (IEC), the World Wide Web Consortium (W3C), and other appropriate forums."[81] The above-mentioned organizations are crucial in determining and promoting technical standards that contribute to establishing accessible ICT. It is far-reaching to involve persons with disabilities in every stage of the ICT related process. To achieve a productive feedback, their participation and observations must be included and they must be consulted on how to make these assessments and how to interpret their results as well.

As stated by the 2013 CRPD Progress Report analysis, 41 percent of the ratified countries surveyed reported that they participate to the work of international standards development organizations related to Digital Accessibility. The data analysis shows that countries that do participate and cope with these international organizations are more likely to have accessible financial services such as ATM/electronic kiosks. Table 6 shows how regions are being involved with international standards organizations. In general, the worldwide scenario in this respect is relatively improving.

Table 6: Country participation to International Standards Development Organizations by States Parties to the Convention - Asia, Africa, Latin America and The Caribbean, and Oceania
Source: G3ict CPRD 2013 ICT Accessibility Progress survey.

States Parties Level of CRPD ICT Accessibility Compliance by Region	Africa	Asia	Europe	Latin America and The Caribbean	North America	Oceania
Country participation to the work of International Standards Development Organizations	36%	46%	62%	27%	100%	50%

Fortunately, there are some countries that are making remarkable progress in the implementation of accessible ATMs. An encouraging example to share is the initiative developed in Spain by Technosite and "La Caixa" (Europe's leading savings bank and Spain's third largest financial institution), which are already available in about 1,300 "La Caixa" ATMs. The machines provide different ways of interacting with customers and are adapted to different profiles, such as sign language avatar, high-contrast text displays with large text and buttons, a screen reader or keyboard navigation.

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[81] Broadband Commission for Digital Development, G3ICT, IDA, ITU, Microsoft, the Telecentre.org Foundation, & UNESCO (2013), The ICT opportunity for a disability-inclusive development framework. Retrieved January 22, 2015, from
http://www.itu.int/en/action/accessibility/Documents/ACCESSIBLE_The%20ICT%20Opportunity%20for%20a%20Disability_Inclusive%20Development%20Framework.docx

The impact of the changes in terms of accessibility made by Technosite and "La Caixa" are of value to customize and to make more accessible all kinds of public digital terminals, such as self-checkout lanes, information and retail kiosks, electronic points of sale, or payment terminals, etc." which are often excluded in the consideration to include accessibility. There are other examples of countries that are committed to improve accessibility in ATMs around the world. As a result of the qualitative analysis extracted from the 2013 CRPD Progress Report, the following countries have deployed accessible public kiosks and/or ATMs, such as Bangladesh, Bolivia, Burkina Faso, Cook Islands, France and New Zealand. In Cook Island, for instance, major banks have accessible ATMs located widely throughout the main island of Rarotonga as well as Aitutaki. EFTPOS (electronic funds transfer at point of sale) is also available at participating outlets and all major utilities providers.

Categorically, there are many challenges needed to be accomplished first, in order to achieve full financial inclusion. The CRPD 2013 ICT Accessibility Progress Report's results, in this respect, could be incorporated as best practices, when drafting and designing policy process. A definition in the constitution of "Reasonable Accommodation" for the Rights of Persons with Disabilities, and regulations enacted to facilitate access by PWD to assistive technologies at affordable cost, the continuous promotion of forum for the active cooperation between NGOs, an active participation to the work international standard organizations and, finally, data available for digital access will have a positive effect on better implementing accessible public electronic kiosks or ATMs.

G3ict Survey of Financial Services Accessibility 2013

In 2013, G3ict partnered with Scotiabank to launch a global survey on the accessibility of financial services among leading financial institutions. The aim of the survey project was to develop a repository of information on the measures that banks, insurance companies and allied financial services firms are undertaking in order to make their offerings more accessible and user-friendly for persons with disabilities and senior citizens. The targeted participants were senior managers, COO / CEOs, Managing Directors, IT Directors, HR Directors, and accessibility professionals from banks and financial services companies. Data from the survey could be used to develop accessibility benchmarks and identify best practices in the field that would help banks and financial services institutions to increase their customer base by enabling them to cater to a group that might currently not be able to fully access financial services.

Survey methodology

To understand the current state of accessibility of financial services across the world, it was realized that a literature review and survey of existing guidelines or legislation was not enough, and a closer scrutiny of banks and their processes was called for. With inputs from a core committee, an exhaustive questionnaire was formulated. The survey aimed at identifying common practices among banks and financial services institutions to identify what is currently available and what is being undertaken to enhance and promote services specifically for seniors and persons with disabilities as well as what resources are available to staff to support those services.

A selected number of organizations from the financial and banking sector across the world were invited to participate to ensure a global perspective was captured. This survey touched on several topics that include questions pertaining to organization commitment, support and feedback, types of services particularly geared for seniors and persons with disabilities and any

plans which organizations were undertaking to further enhance and promote services for seniors and persons with disabilities.

The survey looked at five broad areas; in the first section, respondents were asked to identify what sort of national or local commitments or guidelines they were complying with when it came to increasing financial accessibility. Respondents were then asked in detail about the existing measures for increasing accessibility being undertaken by their organizations; each level of implementation of policies and efforts was reviewed. Respondents were then asked about the proposed or upcoming accommodations their organizations were planning on making for persons with disabilities, as well as the drivers behind this change. The aim was to capture not just the best practices in the field, but also the motivations and cost benefit analyses that come into play when talking about these accommodations; a better understanding of that will be more convincing for banks and financial institutions to take the plunge.

After several rounds of review by the members of the core group, the survey was sent out to respondents who were working in banks and financial institutions across the world. Thirteen leading international banks responded to the survey. Below we report findings from descriptive analysis of the data.

Survey findings

A majority of the respondents (59 percent) address needs of persons with visual and print disabilities across all services, 51 percent respond to needs of persons with hearing disabilities, 49 percent for persons with physical disabilities, and 47 percent for persons with speech disabilities. Only 26 percent noted having services for persons with cognitive or learning disabilities, highlighting a big gap in serving this population. The table below depicts the level to which different offerings are accessible for persons with different disabilities:

Table 7: Accessibility of services across disabilities
Source: G3ict Survey Financial Services Accessibility 2013

	Visually or print disabled	Hearing disabled	Speech disabled	Physically disabled	Cognitively or learning disabled	NA
Branch banking	50%	25%	25%	67%	33%	17%
Online (web) banking	80%	40%	50%	50%	20%	20%
Kiosks and payment terminals	60%	50%	40%	40%	20%	20%
Phone banking	80%	40%	20%	60%	20%	20%
Mobile banking	60%	60%	60%	30%	20%	20%
Digital wallet	33%	33%	33%	33%	33%	50%
Loans	50%	50%	50%	50%	38%	25%
Debit or credit cards	63%	63%	50%	50%	25%	25%
Statements	89%	56%	56%	56%	22%	11%
Investing/trades	44%	56%	44%	33%	22%	22%
Insurance	67%	83%	83%	83%	33%	17%

Respondents were asked about the types of policies or guidelines that were important in governing their work in the area of accessibility. A high majority of respondents flagged the importance of having harmonized and mandatory guidelines and private industry association guidelines in delivering accessible services. As depicted in the graph below, 91 percent of respondents checked mandatory internal (organizational) guidelines, 82 percent cited the importance of private banking association guidelines, 73 percent listed government mandates, 64 percent checked marketing guidelines, 55 percent listed corporate social responsibility procedures, 36 percent cited voluntary internal (organizational) guidelines, and only 27 percent identified the Convention on the Rights of Persons with Disabilities as a driver for accessibility.
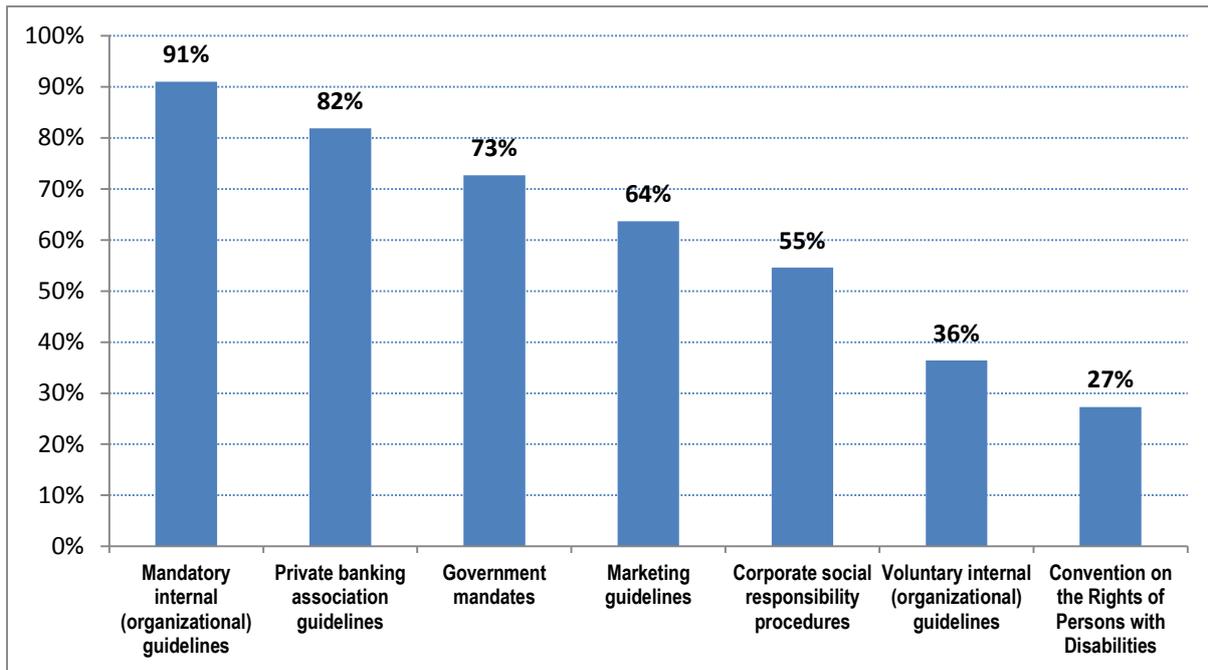
Figure 3: Types of policies or guidelines important in governing work in the area of accessibility
Source: G3ict Survey Financial Services Accessibility 2013

Banks also rated the top five success factors that influence their organization in the delivery of accessible services: 91 percent said corporate mandate for accessibility and/or inclusion, 82percent highlighted the presence of an accessibility champion or disability council in the bank that was pushing for it, 73 percent identified funding for accommodation or accessibility, 73 percent listed formal relationships with external providers of accommodation services, and 73 percent also cited sensitivity and/or accessibility training for all employees.

Respondents were asked to rate the relative importance of several measures for promoting diversity, inclusion and accessibility within their organization on a scale of 1 to 7, with 1" reflecting the lower importance, "4" a medium importance, "7" the higher importance. Factors with scores above five are rated as important. The top five success factors were found to be: corporate mandate (92 percent rated 5 or above, with 77 percent rating it as highest importance), the presence of an accessibility champion or disability council in the bank that was pushing for it (77 percent), funding for accommodation or accessibility (77 percent), sensitivity and/or accessibility training for all employees (77 percent), and formal relationships with external providers of accommodation services (77 percent).

The graph below shows how respondents ranked the different factors in terms of their importance (rating of 5 or above) in delivery of accessible services.

Importance of different measures in delivery of accessible services

Measure	%
Corporate mandate for accessibility and/or inclusion	92%
Accessibility Champion or Leadership council	77%
Accommodation or accessibility funding	77%
Formal relationship with external providers of…	77%
Sensitivity and/or accessibility training for all employees	77%
Accessible employee feedback procedures	69%
Assistive technology or scripting tools	69%
Intervenors or personal support persons for employees with…	69%
Accessible physical locations	69%
Employee accommodation policies	62%
Internal tools to aid seniors and other employees with…	54%
Employee resource group for seniors and/or persons with…	54%
Center of Excellence within the organization	50%
Voluntary corporate policies	42%

Figure 4: Factors important in delivery of accessible services
Source: G3ict Survey Financial Services Accessibility 2013.

Participants (n=13) also offered an insight into the importance of different resources for delivering services to customers who are aging or have disabilities using the same seven-point importance rating scale. The top five resources receiving a rating of five or above were: accessible customer feedback mechanisms (84 percent), published, accessible accommodation processes and services (77 percent), alternative formats for financial statements (e.g., Braille, large print, accessible PDFs on request) (77 percent), alternative formats for marketing materials (77 percent), and accessibility requirement in procurement processes (77 percent).

The graph below shows the order in which participants held different resources to be important (rating of five or above).

Importance of different resources in the delivery of accessible services

Resource	Percentage
Accessible customer feedback mechanisms	85%
Published, accessible accommodation processes and services	77%
Alternative formats for financial statements (e.g., braille,…	77%
Alternative formats for marketing materials (e.g., braille,…	77%
Accessibility requirement in procurement process	77%
Downloadable tools for developing accessible applications…	75%
Tracking or measurement of all accessible customer touch…	69%
Website accessibility guidelines/standards	69%
Mobile accessibility guidelines/standards	69%
Captioning for all audio material	62%
Alternative channel (e.g., kiosk) accessibility…	62%
Standards for developing accessible content	62%
Peer to peer video for sign language/interpretation on…	54%
Downloadable tools to enhance customer experience with…	54%
Repository of resources and/or best practices specific to…	50%
Relay services (e.g., VRS)	46%

*Figure 5: Resources important in the delivery of accessible services*
Source: G3ict Survey Financial Services Accessibility 2013

Participants were also asked about their thoughts on the importance of ensuring accessibility across their different services and offerings in the future. The most important services identified for accessibility investments in the future were Communication tools (chat, remote interpreters, captioning) (83 percent), online/web banking (75 percent), Mobile security and authentication (including biometrics) (73 percent), and mobile customer service (73 percent). Other areas included debit and credit cards (64 percent), statements and alternative print materials (64 percent), and accessible employee accommodations (64 percent).

The graph below depicts all the areas checked:
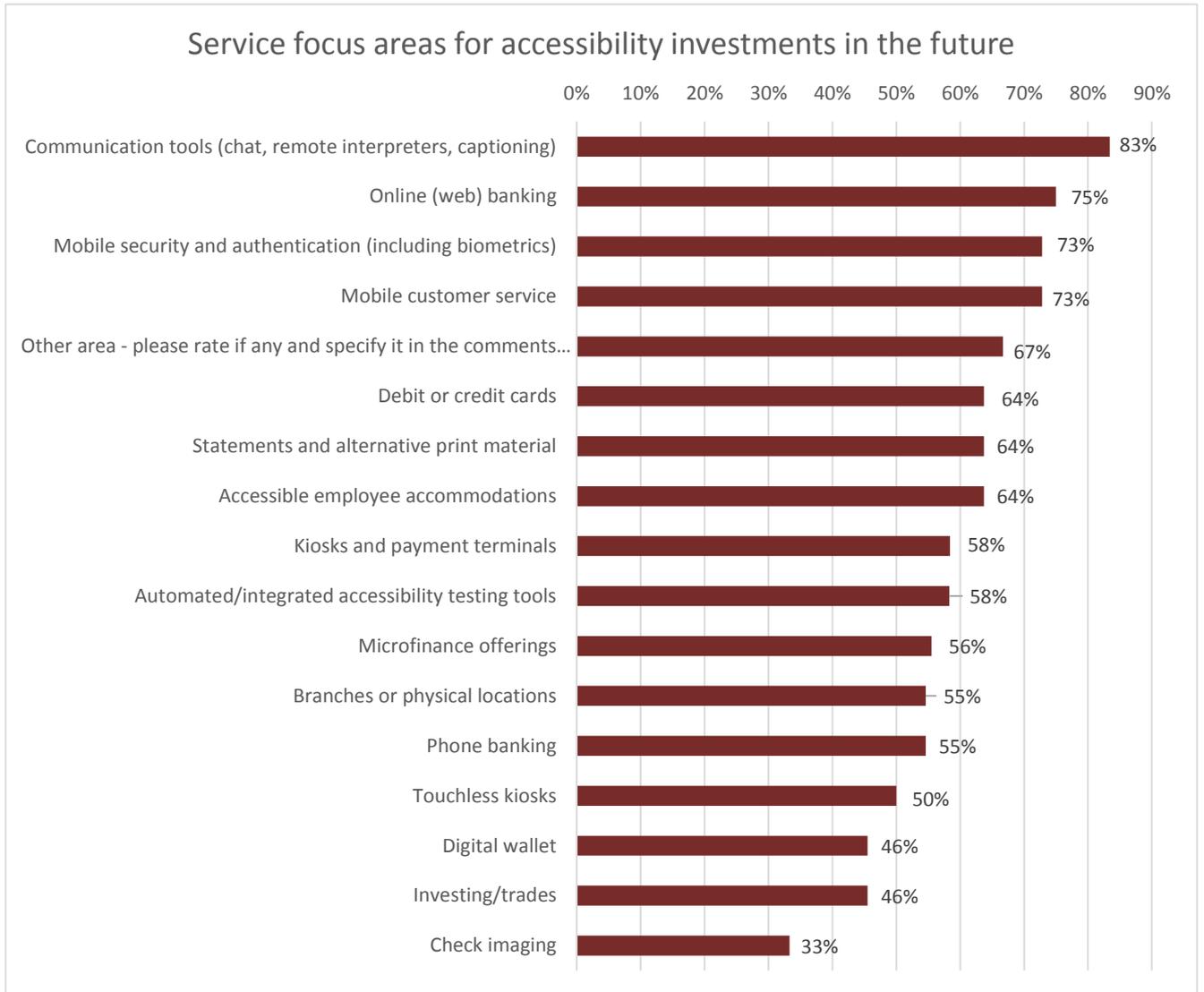
Figure 6: Service focus areas for accessibility investments in the future
*Source: G3ict Survey Financial Services Accessibility 2013*

CONCLUSIONS AND RECOMMENDATIONS

Access to banking and financial services is an essential element in promoting autonomy, a sense of citizenship, and socioeconomic participation while ensuring dignity, security and privacy. Access to financial services is a significant step in achieving full socioeconomic participation including asset development, conducting commercial transactions, and exercising independence. Financial inclusion for persons with disabilities is essential to realize the goals and rights imbibed within the Convention on the Rights of Persons with Disabilities and the growing number of regulations and laws protecting the rights of all individuals around the world. Many persons with disabilities have faced challenges in accessing and using financial services from policy barriers to inaccessibility of financial institutions.

Technology advances are changing the way financial services are publicized, offered, and used. The growing availability and use of telephone, Internet, and mobile banking are generating greater expectations of receiving services "anywhere, anytime" and driving perceptions that everyone can now access banking services through a plurality of devices and digital solutions. The new means of offering services are bringing new enthusiasm about breaking down the traditional physical accessibility barriers to financial services. However, these can also create new digital divides if there is no recognition that the underserved, the unbanked are often at a greater disadvantage due to ICT accessibility challenges, cultural barriers, low level of literacy, remote locations (localization), and security concerns. Making banking accessible for persons with disabilities is both, a best practice that should be followed, as well as a sound commercial and business decision.

In this chapter, we offer recommendations on approaches and strategies banking and other financial organizations can undertake to bridge any digital divides and make their services accessible to all.

Embracing a customer centricity model for the evolving customer
Access to banking services is evolving now faster than ever before and rapid advances in the nature and use of personal use technology is bound to change how persons wish to engage with their financial services. The emergence of cloud computing, chats, wearable technology, biometrics, and other technology advances are bound to impact how consumers want to access financial services. This means that financial service providers have to consider accessibility needs in the technology offered today as well as prepare to be inclusive of persons with a diverse range of abilities and preferences when making decisions about what technology to use and what products or services they are delivering.

Therefore while the evolution of digital access and increased need for security and privacy continues to drive this industry, having a matured **customer centricity model** that is inclusive of all persons including persons with disabilities and persons with diverse abilities will ensure equal access for all and will have a positive economic impact across the world. Financial organizations have to serve the millennial and aging demographics, as well as the generation in between. With the introduction of mobile devices, practices make it difficult to attract and retain new customers. However, customers familiar and satisfied with the accessibility features of their financial services are far more likely to remain loyal to their providers. Evolution and progression through disruptive change will be a key driver as financial organizations proceed

with the transformation. Organizations can use frameworks offered by the Consultative Group to Assist the Poor (CGAP) to develop their customer centricity approach.[82]

There are a large number of persons in the world with differing levels of disability, who will benefit from technology-based banking services with many receiving independent access for the first time. However, accessibility of services is an important part of making services usable and inclusive of a range of differences, and not just disability. These advancements or accommodations would be of great use to older customers, who would also be able to use services much more easily if they were made more accessible.[83] Persons with language or literacy constraints will also benefit from accessible and multiple ways of interacting with financial technology.

In today's fast evolving world, leadership and strategic thinking and guidance in the development of new integrated approaches to deliver banking services such as on-line products and services that better meet customer expectations, enhance their experience while streamlining and leveraging processes, tools and delivery is particularly essential to compete amongst the best. The Internet, above all, is a tool for persons with disabilities to bridge the differences between them and others, and all efforts must be made to ensure that persons are not at a disadvantage when it comes to using services such as net banking.

In the 2013 G3ict survey on financial services, respondents from a number of financial institutions globally reported that 95% of them had some level of accessibility and inclusion in their missions, plans and commitments. Yet in a recent Canadian survey conducted by the Neil Squire foundation, more than 50% of users who were low income, marginalized or had disabilities, revealed consistent discontent with the use of simple tools such as automated banking machines. In a recent survey from CDI, more than 67% of respondents revealed a high degree of annoyance with processes related to banking services.

This may indicate that financial institutions are taking steps to ensure the accessibility of their services but may be unaware of some of the specific needs of their customers. Given the rapid pace of technological advancements customers may be already looking towards next generation services. A better understanding of current and potentially new customers is critical to any financial organization.

A customer centricity model would allow financial organizations to think about how the next generation of customers will access financial services while meeting the expectations of current customers and ensuring they are ahead of the curve.

Regretfully, often all the great work that is being done by financial institutions is not adequately promoted or marketed often as a result of litigious cases that have seized public attention. Banking and other financial institutions should work on reducing any communication gaps with customers and offering information and technical assistance for any accessibility features.

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[82] Kilara, T., & Rhyne, E. (2014), Providing guidelines for designing a customer-centric business approach. CGAP. Retrieved January 28, 2015, from http://www.microfinancegateway.org/library/customer-centricity-financial-inclusion

[83] Theofranos, M., & Redish, J. (2006), Guidelines for Accessible and Usable Web Sites: Observing Users Who Work with Screen Readers. Retrieved June 15, 2014, from http://redish.net/content/papers/interactions.html

Effective communication and marketing will result in a return on investment through increased customer satisfaction and brand loyalty.

Effective communication and marketing and publicity campaigns, including on social networks, will increase awareness and visibility of accessible features. Engage persons with disabilities and persons with different abilities in marketing campaigns which would ultimately increase awareness and commitment to accessibility and inclusion.

Many persons with disabilities, particularly in developing countries, may have only recently started entering the financial services market owing to changing policies that allow them to own and operate bank accounts and the availability of microfinance. It is easy for customers to feel lost due to the plurality of products on offer. It may be valuable to also offer *basic financial literacy training* and information on the types of financial products and services available to new customers from traditionally unbanked groups.

Leading financial services corporations increasingly align the representation of persons with disabilities and diverse abilities in their workforce to reflect their customer base. As the numbers indicate, by 2025, more than 20% of the population of several leading economies will be over 65. As aging introduces a number of limitations and disabilities, the engagement of persons with disabilities in the workforce will better reflect market demographics. Additionally, young individuals with disabilities and diverse abilities often bring forward new perspectives and approaches that better reflect practices or behaviors. Integrating persons with disabilities in the workforce to improve a company products and services can also promote better leaders that can influence business decisions. Such strategy can be equated to the successes of initiatives focused to increase the representation of women in business.

Global harmonization of policies and standards for financial inclusion
The Convention on the Rights of Persons with Disabilities has paved the way in promoting accessibility in all public services including financial services. As financial institutions work towards operationalizing the Convention's mandate and ensuring they respond to regulatory and compliance pressures, there is a growing call for global harmonization in the standards and guidelines they should follow to ensure inclusion for all. Financial may face different pressures and changing needs due to new legislation and regulation, changing demographics, and technical evolution while increasing their market presence and share, but can no longer afford to compromise on accessibility for their products and services

While technology can be a great enabler, it can often lead to many constraints given the different environments, platforms and legacy systems that still exist in many financial organizations. The state of the art in accessible technology also changes and organizations may find themselves having to make decisions between PDFs versus EPUB documents, native apps versus highbred-two-dimensional access (swipe and keyboard, etc.), being responsive versus personalization, and offering products on open source versus locked environments. Changes in technology are fast paced and financial organizations must be agile and responsive, ahead of the curve.

While many countries and organizations have adopted standards and adhere to some level of compliance, customers have expressed a high degree of dissatisfaction from response time,

processing inconsistencies, annoyance and inflexibility from financial providers. Global harmonization is necessary to achieve consistency of users' experience with financial services.

While stronger and harmonized standards and policies (internal and external), regulations and streamlining are necessary to compete amongst the best in satisfying their customers, they can also help with the protection and security of banking services as they adhere to the highest degree of compliance.

Strengthen inter-industry collaboration and knowledge sharing

The above conclusions point to the need for a stronger and effective inter-disciplinary collaboration amongst all stakeholders affecting or touching accessibility. It is often difficult to secure commitments and efforts given conflicting priorities, sometimes ambiguity of standards, regulations, processes and direction and very tight timelines result in accessibility requirements being compromised or not imposed.

To achieve progress, industry leaders and inter-disciplinary, inter-industry collaboration and relationships should work towards sharing best practices, adopting standards, and accepting shared accountability to ensure all products and services going forward are inclusive of accessibility standards from the earliest stage of development to the time when a product or service has been released and continues to be supported or available to all.

Increased knowledge sharing among financial institutions will also lead to increased capacity and resources for the entire sector in meeting their obligations on inclusion, accessibility, security, and privacy, adopt best practices, and participate in innovation and research that promote inclusion and accessibility. In the G3ict 2013 CRPD ICT Accessibility Progress Report survey, many financial organizations have indicated that they see value in the participation and development of policies and standards that promote better access to financial services. Furthermore, collaboration amongst other global financial organizations helps leverage resource and findings while still protecting the organizations properties and market share. In Canada for example, a group of six leading Canadian banks meet on a regular basis to discuss common issues and accessibility best practices, and work collaboratively to promote those.

Bridging the digital divide in offering financial services

Institutions should aim to understand the challenges faced by their customers, front-line officers, and service delivery partners, and assess the gaps they face in reaching where they want to be and in increasing market penetration. Institutions should undertake the following mechanisms to reduce the gaps between market penetration, customer needs, and organizational goals.

Below we offer actionable recommendations to promote inclusion in all technology based financial services:
1. Undertake a capacity assessment and evaluate critical aspects to develop a solid understanding of how financial organizations can leverage their approaches and solutions with stronger relationships with their stakeholders and partners.
2. Assess what is working, what is being used, and what is not among evolving and emerging technologies. This includes how the organization is responding to increased demand for more agile solutions, mobile apps, electronic payment

systems, introduction of gesture driven ATMs and devices, same-time payments, on-line banking, advanced IVR technologies while meeting accessibility needs.

3. Facilitate integration of process and technologies, legacy constraints, budgets, organizational constraints.

4. Offer a plurality of feedback and data collection mechanisms to assess customer needs and satisfaction.

5. Engage and include persons with disabilities and different abilities to provide feedback and contribute in the development of products and services to ensure products and services are nimble and flexible better responding to everyone's needs.

6. Promote responsive design and personalization to promote a personal and customized customer experience

7. Develop products that are easily interchangeable and link with other institutions to maximize customer experience by offering multiple products through one channel.

8. Utilize big data and behavioral patterns, to evaluate usability, accessibility, product adoption, abandonment, and features that motivate or frustrate customers. The art of combining numbers with observational patterns often reveal different issues, pain points, or experience. Knowing the customer is not only about numbers but also his/her behaviors.

9. Explore increased partnerships with third party service providers and app developers to add products that empower the customer to personalize their own experience.

10. Be cognizant of state of the art approaches and technology trends within the industry such as single sign-on for all services, easier authentication using biometrics and using gesturing and wearables to access their financial services.

11. Reach out to persons with disabilities and other relevant stakeholders when conceptualizing ideas, designing, developing and marketing products. Intellectual capital; the persons.

12. Develop employee sensitivity, capacity, and expertise to respond to the needs of persons with disabilities. Organizations must continuously invest in their persons, their customers and employees and key business partners and recognize and value their contribution.

GLOSSARY OF TERMS

- ABA - Australian Bankers' Association
- ABM - Automated Banking Machines
- ADA - Americans with Disability Act
- AFA - Access for All
- BRA - Banking Regulation Act
- BT - British Telecom
- CAPTCHA - Completely Automated Public Turing test to tell Computers and Humans Apart
- DDA - The Disability Discrimination Act (Australia)
- EFTPOS - Electronic Funds Transfer at Point of Sale
- HREOC - Human Rights and Equal Opportunity Commission
- HTML - Hyper Text Markup Language
- IBA - Indian Banks' Association
- IVR - Interactive Voice Response
- NIC - National Informatics Centre
- PIN - Personal Identification Number
- PWD - Persons with Disabilities
- PWDA - The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) *Act,* 1995
- RBI - Reserve Bank of India
- RTF - Rich Text Format
- TTS - Text to Speech
- UNCRPD - United Nations Convention on Persons with Disabilities
- WCAG - Web Content Accessibility Guidelines

ANNEX 1 – DISABILITY AND ACCOMMODATIONS IN BANKS

Disability	Branch Banking	Phone Banking	Internet Banking	Payment Terminals and Kiosks	Mobile Banking
Physical Disability	- Bank branches are inaccessible to persons using wheelchairs, as they are not provided with ramps, and often have steps at the entrance -The queuing and counter system in place is not friendly for customers with disabilities; desks are not always at a height that can be accessed by someone in a wheelchair -The staff is not sensitized to the needs of customers with physical disabilities Suggested Solution: -Conduct training programs for the staff train them about the needs of customers with disabilities -Construct ramps and walkways so that buildings are accessible by wheelchairs -Ensure that the bank layout is accessible and as uniform as possible, ensuring ease of access.		-Using websites which are not accessible could be a problem for a person who doesn't have full use of their limbs Suggested Solution: -Ensure websites are compatible with assistive technologies, such as alternate input devices. Standards such as the WCAG should be followed	-ATM entrances are not accessible for persons with wheelchairs as they are not provided with ramps -ATMs are often too high, and cannot be accessed by someone who is sitting in a wheelchair -Using keypads could be a problem for a person who doesn't have full use of their limbs Suggested Solution: -ATMs should be provided with ramps (with the appropriate slope) that can be accessed by customers in a wheelchair -ATMs should be at the appropriate height and designed with the needs of persons in wheelchairs in mind	-Using phone apps could be a problem for a person who doesn't have full use of their limbs Suggested Solution: -Mobile apps should have a clean interface, which is not problematic to use and which can be controlled by voice commands

Visual Disability	Branch Banking	Phone Banking	Internet Banking	Payment Terminals and Kiosks	Mobile Banking
	-Branches are not laid out in a uniform manner, and are difficult to navigate for someone who can't see - The signage is not done in raised texture maps, and so can't be accessed by someone who can't see -Coinage in India is not disabled-friendly, with the coin sizes being very similar to each other and difficult to demarcate -Bank literature is not available in large print or Braille formats and so can't be read by persons with low or no vision Suggested Solution: -Conduct sensitization and training programs for the staff train Branch Banking them about the needs of customers with disabilities -Textured maps and signage should be made readily available at branch locations -The branch layout should be simplified so		-Websites are often not accessible using assistive technologies like screen readers, and are not navigable using non-traditional input devices Suggested Solution: -Websites need to be made accessible and should comply with the Web Content Accessibility Guidelines (WCAG) which clearly specify how best to make the web interface usable for persons with disabilities	-There aren't many speaking ATMs with audio jacks which can be used by persons who can't use the touchscreen -The number pad display is not uniform amongst various banks, and so can be problematic for persons relying on tactile memory Suggested Solution: -Banks should introduce more speaking ATMs, which have an audio jack that can be plugged into a listening device, which helps a customer with visual disability use an ATM	-Mobile banking apps are not accessible using phone screen reading software Suggested Solution: - Phone apps need to be made accessible and should comply with the W3C Guidelines which specify how best to make the mobile interface usable for persons with disabilities

Visual Disability (Cont'd)	Branch Banking	Phone Banking	Internet Banking	Payment Terminals and Kiosks	Mobile Banking
	that someone with a visual disability is not at a disadvantage -In case the customer desires, bank literature, statements and other documents should be made available in alternate formats (e.g. large print, Braille, PDF)				
Hearing Disability	-Branch officials have not been sensitized to the requirements of someone who is hearing impaired, who might require them to write down their statements -Sign language interpreters are not on call to help translate in case a person with disability needs them -Alert and announcements in banks are usually based on sound notifications, and so can often be missed by customers with hearing disabilities Suggested Solution: -Conduct sensitization and training programs for the	-There is great reliance on spoken directions and no option for a deaf customer to have a conversation about phone banking with their bank -No provision for options such as text relay that can be used by deaf customers to do banking transactions -The options on an automated Voice Response System (VRS) at a bank's call center are often unclear and are incomprehensible Suggested Solution: -Banks should attempt to introduce text relay services, which can be used by deaf		-Alerts and notifications in an ATM are usually in the form of a loud noise or a beep, which will be missed by a person with hearing disability Suggested Solution: -ATMs should have a light which flashes in case of a notification, which will come to the attention of the user	

Hearing Disability (Cont'd)	**Branch Banking**	**Phone Banking**	**Internet Banking**	**Payment Terminals and Kiosks**	**Mobile Banking**
	staff train them about the needs of customers with disabilities -Designated branches should have a sign language interpreter on call for assistance of customers with hearing disabilities -Notifications and announcements, such as at a teller, should be accompanied by a visual alert as well (e.g. a blinking light, or a number flashing on a screen)	customers to communicate with bank officials via the phone -The VRS system should be in clear, understandable and audible tones for the ease of customers			
	Branch Banking	**Phone Banking**	**Internet Banking**	**Payment Terminals and Kiosks**	**Mobile Banking**

Cognitive Disability	Branch Banking	Phone Banking	Internet Banking	Payment Terminals and Kiosks	Mobile Banking
	-Bank literature and documents are complicated and the language is not easy to comprehend; this could be a problem for someone with a learning disability -Banks have a bias against someone with a learning disability and despite rules against this, are reluctant to open account for customers with cognitive disabilities **Suggested Solution:** -Conduct sensitization and training programs for the staff train them about the needs of customers with disabilities -Bank documents, scheme information and so on should be in clear, easy to understand language	-The options on an automated VRS system at a bank's call center are often not clear and are incomprehensible Suggested Solution: -The VRS system should be in clear, understandable and audible tones for the ease of customers			

ANNEX 2 – BANKING AND ACCESSIBILITY GUIDELINES

Area of Banking	Guidelines/Recommendations
Mobile Banking	Web Accessibility Initiatives international guidelines on mobile accessibility: http://www.w3.org/WAI/mobile/
Internet Banking	The Web Content Accessibility Guidelines lay down the principles for making websites more accessible for persons with disabilities: http://www.w3.org/TR/WCAG/ Australian Industry Standards for Electronic Banking: http://www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking- Royal National Institute for the Blind's Good Practices and Standards for Electronic Banking: www.rnib.org.uk/aboutus/Research/reports/2012/Banking_Experience_CP.pdf
ATMs and payment kiosks	Americans with Disabilities Act ATM Standards, 2010: www.firstdata.com/downloads/thought-leadership/atm_ada_accessibility.pdf Australian Industry Standards for ATMs: www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking-/ATM-Standard Canadian Guidelines on Self Service Interactive Devices: A summary is available at "Standard B651.1-09", sourced from http://hub.eaccessplus.eu/wiki/Canadian_standard_for_accessible_design_for_automated_banking_machines Dutch Guidelines on Payment Terminals: http://hub.eaccessplus.eu/uploads/a/a1/Dutch_Guidelines_on_payment_systems.pdf
Phone Banking	Australian Industry Standards for Automated Phone Banking: http://www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking-/Automated-Telephone-Banking-Standard
Branch Banking	New Zealand Banker's Association Voluntary Guidelines on Meeting Needs of Older and Disabled Customers: http://www.nzba.org.nz/banking-standards/code-of-banking-practice/voluntary-guidelines-to-assist-banks-to-meet-the-needs-of-older-and-disabled-customers/

ANNEX 3: LAWS, REGULATIONS, GUIDELINES AND PROGRAMS ON ACCESSIBILITY FROM SELECT COUNTRIES

Governments and banking associations around the world have recognized that there is a severe lack of services for persons with disabilities. At various levels – national (mandatory) and private (voluntary) – standards and guidelines have been introduced to better the delivery of financial services. Countries such as Australia, Canada, and the United States have been at the forefront of this drive, and have to a large part been successful. However, the problem arises at the implementation level. In several economically weaker countries (like India), though guidelines have been formulated, they are often not followed by banks because of their perceived non-crucial nature. In order to come up with best practices and guidelines, it is necessary to see the successes in the past. This section will look at some examples of standards and guidelines, as well as the success of efforts being made in that region.

Australia

The Disability Discrimination Act was passed in 1992 to promote the rights of persons with disabilities in certain areas such as housing, education and provision of goods and services.[84] The law was passed to ensure Australia's compliance with its international law obligations, to have a standard and uniform law for the whole country and to ensure that persons with disabilities do not face discrimination. While Australia has a general legislation on the subject, specific to banking law there have been advances made by the voluntary associations of banks across the country.

The Australian Bankers' Association (ABA) provides analysis and advice, and contributes to the debate and discussion on public policy on banking and other financial services, in order to put forth the banking industry's views. It has released voluntary Industry Standards[85] to improve the accessibility of electronic banking. This has also been accompanied by an action plan, which looks at various steps of implementation which are required for the Standards to be put in place. These standards cover various areas: automated teller machines, electronic funds transfer at the point of sale, automated telephone banking and internet banking.[86]

The standards for ATM[87] regulate the design and operation guidelines, including aspects like lighting, approach, height, measurements, input and output controls, color, contrast and so on. The EFTPOS standards[88] look at the functioning of various card readers, and how they need to cater to disability needs, be it visual, physical, dexterity or any other aspect. It also specifies the requirements for layout, location, and design of these machines. The internet banking

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[84] Australian Human Rights Commission, A Brief Guide to the Disability Discrimination Act. Retrieved June 15, 2014, from http://www.humanrights.gov.au/brief-guide-disability-discrimination-act

[85] Australian Banker's Association Industry Guidelines available at http://www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking-.

[86] *Id.*

[87] Australian Bankers' Association Industry Standards for ATMs available at http://www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking-/ATM-Standard.

[88] Australian Bankers' Association Industry Standards for EFTPOS available at http://www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking-/EFTPOS-Standard.

standards[89] govern the various W3C requirements and implementation by banks and other financial institutions, and specify how the navigation and accessibility of websites can be improved for users with any disability.

In 2004, a study was conducted to see how well the website accessibility standards were being implemented by banks.[90] The accessibility of the home page of 8 major and regional Australian Banks, as rendered in Internet Explorer 6, was assessed against WCAG 1.0 Checkpoints at all priority levels in December 2003.[91] The findings of the study were not very positive; they at least show some efforts being taken at improving the bank websites:
"Our findings show that while none of the banks met the standard, some of them had good levels of technical conformance. We cannot ascertain the impact of the introduction of these standards as there are no previous studies to benchmark against. However, we hope that this comparative study will encourage the banks further in their accessibility endeavors."[92]

A similar study was conducted by WebKey IT more recently in early 2013, analyzing the main pages of seven large banks. However, the situation did not seem to be much improved: "The banks have been roundly criticized for the design of their websites, with small fonts and poor navigation hindering access for Australia's disabled."[93] Evidently, more needs to be done in order to increase the implementation of the forward-thinking and comprehensive guidelines adopted by the ABA.

Canada

Canada has had a long history of introducing laws for persons with disabilities. In 1977 the Canadian Human Rights Act was passed, which specified that all Canadian citizens had to be treated equally, but did not specifically address the needs of persons with disabilities. Subsequent to this act, several organizations worked to highlight the problems and obstacles faced by persons with disabilities, and the Obstacles Report was published to identify problem areas, which was based on an investigation into the troubles that persons with disabilities faced.[94] The Canadian Government has introduced several legislations to aid persons with disabilities; these include the Blind Persons Act and the Employment Equity Act.[95] There are also web accessibility standards in place for the Government of Canada[96], and regulations such as the Accessibility for Ontarians with Disabilities Act (AODA) in Ontario, which are in line with the international web content accessibility guidelines.[97]

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[89] Australian Bankers' Association Industry Standards for Internet Banking available at http://www.bankers.asn.au/Industry-Standards/ABAs-Accessibility-of-Electronic-Banking-/Internet-Banking-Standard.
[90] Celic, S., Faulkner, S., & Arch, A. (2004), A look at internet banking accessibility in Australia. Retrieved June 15, 2014, from http://ausweb.scu.edu.au/aw04/papers/refereed/celic/paper.html
[91] *Id.*
[92] *Id.*
[93] Dinham, 2013.
[94] Guide to Disability Rights in Canada, available at http://www.1800wheelchair.ca/news/post/disability-rights-in-canada.aspx.
[95] Guide to Disability Rights in Canada, available at http://www.1800wheelchair.ca/news/post/disability-rights-in-canada.aspx.
[96] Web Standards for the Government of Canada, available at http://www.tbs-sct.gc.ca/ws-nw/index-eng.asp
[97] Web Content Accessibility Guidelines Overview, available at www.w3.org/WAI/intro/wcag.php.

The Canadian Standards Association (CSA) is a not-for-profit organization that develops standards for various aspects of engineering and services, and provides a certification to products. Many banks align to its standards when it comes to such things as kiosks, ATMs and other aspects of accessibility, as they discuss the various technical specifications which need to be followed by various banks and financial institutions.[98] These laws and standards have evidently had a positive effect, as there are several examples of banks which have expanded their services comprehensively for customers with disabilities.

China

China has a significant population which suffers from some form of disability; official statistics put the numbers at 83 million.[99] In May 2012, the China Banking Regulatory Commission asked banks across the country to improve the access of their services to persons with disabilities; in its circular, it stated that the protection of rights of persons with disabilities must be coupled with the provision of services to them. It further iterated that doing so would increase social harmony and overall sustainable development of the banking industry.[100]

The circular stated that each banking institution should "develop guidelines to help banks meet their responsibilities, provide appropriate services and facilities, employ staff who are familiar with the needs of disabled persons, increase financial knowledge among the disabled population and properly handle their complaints…while actively promoting progress in the improvement of services for disabled persons."[101]

European Union

In 2008 a report was released on the "framework for further development of EU legislation or other co-ordination measures on e-accessibility"[102], which while not being specific to banking, takes a look at existing approaches to business websites, assistive technologies, self-service terminals (such as ATMs) and computer hardware and software. It also considers the existing EU legislation and some sectors which have undergone reform in order to suggest a framework on e-accessibility, which includes some specific changes that can be made by the industry.

In 2007, the Dutch National Forum on the Payment System produced a document on "Guidelines for user-friendly payment terminals".[103] These guidelines include advice on making payment terminals accessible and easy to use for persons with disabilities and older persons. These guidelines include instructions on producing a user-friendly payment terminal, provide design principles, and give instructions on aspects such as how to place the ATM.

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[98] Current Standards Activity, available at http://standardsactivities.csa.ca/StandardsActivities/default.asp.
[99] "Banking for the disabled in China", available at http://english.gov.cn/2012-05/14/content_2137050.htm
[100] "Banks required to improve services for the disabled", available at
http://news.xinhuanet.com/english/china/2012-05/14/c_131587455.htm
[101] "Banks required to improve services for the disabled", available at
http://news.xinhuanet.com/english/china/2012-05/14/c_131587455.htm
[102] The 2008 EU Report is available at http://www.umic.pt/images/stories/publicacoes2/framework.pdf.
[103] Dutch Guidelines for User Friendly Payment Terminals, available at
http://hub.eaccessplus.eu/uploads/a/a1/Dutch_Guidelines_on_payment_systems.pdf.

India

Article 14 of the Constitution of India states that the government must give equal protection of the law to any person within the territory of India.[104] This recognition of the importance of non-discrimination means that the State must ensure that persons with disabilities do not suffer disadvantages when it comes to accessing public services. Further, the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 ("the PWD Act") was enacted to give effect to the proclamation on the full participation and equality of persons with disabilities on both central and state governments. In the banking sector, the Reserve Bank of India (the country's central bank) has promulgated several orders to increase services for persons with disabilities. In one circular, the RBI mandated that banking facilities (including check book facility, operation of ATM, locker, etc.) cannot be denied to the visually challenged as they are legally competent to contract.[105] In another 2008 circular, the Reserve Bank of India mandated that banks should make accessible ATMs available: "Banks should make at least one third of new ATMs installed as talking ATMs with Braille keypads and place them strategically in consultation with other banks to ensure that at least one talking ATM with Braille keypad is generally available in each locality for catering to needs of visually impaired persons."[106]

This Circular also mandated that ramps be made available at bank branches and ATMs to ensure that persons using wheelchairs can access all services.

Unfortunately, while the guidelines exist, there has not been effective implementation by the banks and they have not been enforced. Some banks, such as Union Bank of India have indicated that they will deploy Voice Guided ATMs at accessible locations.[107] However these efforts have not been universally adopted by all banks, and other more comprehensive steps have not been taken to make banking more accessible.

Israel

In 1998 the Israeli Knesset passed the first three sections of the new Equal Rights for Persons with Disabilities Law (Employment, Public Accommodations and Commission for Equal Rights of Persons with disabilities), leaving seven additional sections for future legislation.[108] However, the law has not been passed in its entirety and has been implemented in some areas only; this aspect has been criticized by several scholars.[109] There are no guidelines available on banking and financial institutions, though there are several examples where Israeli banks with an international presence have introduced progressive policies.

Leumi has made several strides at making its bank branches more accessible to the disabled public. Special adjustments have been made at branches for those customers with physical

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[104] Article 14: Equality before law - The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India (Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth).
[105] Available at http://rbi.org.in/scripts/NotificationUser.aspx?Id=4226&Mode=0.
[106] Available at http://rbi.org.in/scripts/NotificationUser.aspx?Id=4923&Mode=0.
[107] See generally: Banking Accessibility in India report on the CIS website.
[108] "Israel's Equal Rights for Persons with Disabilities Law: Current Status and Future Directions", available at http://dsq-sds.org/article/view/626/803.
[109] *Id.*

disabilities as well as visual, hearing and other disabilities.[110] At selected branches, special banking stations are available for customers with disabilities to complete all necessary banking transactions and to receive all necessary banking services. Sound tones have also been placed in branch elevators to better assist the persons with hearing impairments.[111] The bank also provides services such as video chat in sign language for its customers, an audio induction feedback loop for customers who are hearing impaired, as well as providing ATM and website accessibility.[112]

New Zealand

The Human Rights Act of 1993 prohibits discrimination on the basis of a number of criteria, which include disability. "It is unlawful to discriminate on the basis of disability in any of the areas of public life covered by the Act. The Act covers disabilities, which persons have presently, have had in the past, or which they are believed to have. It is also unlawful to discriminate against relatives or associates of persons with a disability, because of that disability."[113]

The New Zealand Bankers' Association has released voluntary guidelines[114] to help banks meet the needs of older and disabled customers. These guidelines highlight the reasons and benefits to the banks to adopt such standards, as well as to assert the rights of the disabled customers. The guidelines discuss training and sensitization of the customer service staff, redesign of the physical access to banks, and specific recommendations for the design and extension of ATMs and bank websites. The document also includes general suggestions, such as taking disability rights group in consultation when coming out with new measures, providing personal banking, improving the print literature of the bank, and so on.

South Africa

It was revealed in September 2011 that a Disability Act is being crafted in South Africa to deal with enforcement, non-compliance and implementation of the UN Convention on the Rights of Persons with Disabilities.[115] In order to ensure the proper implementation of the convention, the South African government was developing a National Disability Policy and its implementation guidelines.

The Code of Banking Practice[116] is a voluntary code released in 2012 that sets out the minimum standards for service and conduct expected from banks with regard to the services and products it offers. This recognizes the requirement that reasonable measures be taken to attend to the physical needs of persons with disabilities; it further commits to recognizing the banking needs of customers with disabilities and taking reasonable measures to enhance their access to those services and facilities. Thus, while not being specifically addressing accessibility in banking

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[110] "Accessibility at Leumi", available at http://english.leumi.co.il/WnnnWn/18822/.

[111] *Id.*

[112] *Id.*

[113] "Guide to Disability", available at http://www.hrc.co.nz/enquiries-and-complaints-guide/what-can-i-complain-about/disability.

[114] New Zealand Banker's Association Voluntary Guidelines available at http://www.hrc.co.nz/hrc_new/hrc/cms/files/documents/27-Nov-2009_12-33-48_Banking_guidelines-disability_older.doc.

[115] Disability in the Workplace, available at http://www.mywage.co.za/main/decent-work/work-and-illness/disability.

[116] South Africa's Code of Banking Practice is available at http://www.standardbank.co.za/site/Code_Banking/COBP%20Final_2012_2.html.

services, it does lay down the foundation and basic requirements for taking accessibility into consideration.

Switzerland

In Switzerland, the private sector pioneered the movement towards accessible banking. Credit Suisse, Switzerland's second largest bank, established its Center of Accessibility in 2007. This organizational unit is the single point of contact regarding accessibility at the corporate level. Credit Suisse makes its products and services available for those with visual, hearing or mobility impairments, as well as the elderly. This applies to its branches as well as its ATMs, web pages, online banking, account statements, and advisory process. One important aspect of Credit Suisse's commitment in this area, beyond barrier-free products and services, is the large scale training that it provides to its employees to make them aware of issues affecting persons with disabilities. La *Fédération Suisse des Aveugles et Malvoyants* (Swiss association of the blind and visually impaired persons), produces a systematic report on the accessibility of Swiss banks which benchmarks the accessibility performance of the financial services industry.[117]

United Kingdom

In the United Kingdom, the Equality Act was passed in 2010. The primary purpose of the Act was to codify and merge the complicated and numerous laws which formed the basis of anti-discrimination law in the country. The law requires equal treatment in access to employment as well as private and public services, regardless of the protected characteristics of age, disability, gender reassignment, marriage and civil partnership, race, religion or belief, sex, and sexual orientation. This is the primary basis for enforcing the rights of persons with disabilities to access financial services.[118]

The Royal National Institute for the Blind (RNIB) released a document on good practices and standards[119] for improving accessibility to persons with print disabilities. This was supported by the British Bankers' Association and the Financial Services Authority. This laid down the economic benefits that would accrue to the bank if inclusive banking service is implemented; it also discussed an empirical analysis of the problems that are being faced by customers with disabilities or older customers, so that banks can better formulate policies for the future. It advocates various examples of good service and good practice that the banks can implement in order to make themselves more accessible; these range from guidelines for ATMs, enhancing the physical environment, and internet banking. It also identified some case studies by leading banks, and highlighted what the banks had been doing right. In association with the RNIB's "Making Money Talk" campaign, Barclays has committed to rolling out talking ATMs by the end of 2012, where speech output will be deployed by audio jacks.[120]

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[117] For description of services please visit: www.credit-suisse.com/accessibility. The following brochure also gives a good overview about the accessibility services for customers at Credit Suisse: https://www.credit-suisse.com/media/cc/docs/responsibility/accessibility-service-guide-en.pdf.

[118] Laura Whataley, "Banks face massive payouts to deaf customers", available at http://www.actiononhearingloss.org.uk/news-and-events/all-regions/press-releases/banks-face-massive-payouts-to-deaf-customers.aspx.

[119] Royal National Institute of Blind People report on accessibility of banking available at http://www.rnib.org.uk/aboutus/Research/reports/2012/banking_experience_for_web.doc.

[120] "Barclays Bank Agrees to Install Talking ATMs as Part of RNIB Campaign", available at http://lflegal.com/2011/11/barclay-atm/.

The Lloyds Banking Group was the first bank in the United Kingdom to incorporate innovative voice technology for its employees and customers with disabilities. The company realized that when it provides Internet Protocol (IP) telephones to most of its desks, the technology would be considerably different from that used before, and so a survey was taken to identify the persons who would be adversely affected by the new technology unless reasonable adjustments were made. Consultations were held with organizations such as Cisco and RNID, and it was realized that the new telephones have a screen, which needs to be visually accessible in order for the phone to be used, which was problematic. The various adjustments that were needed were identified, such as incorporating large buttons, providing for extra amplification, blind-user training, and textphone technology and so on. Lloyds Banking Group, as a result of these consultations, decided to press for an IP phone which did not depend on sight of screened information for comprehensive operation.

It partnered with Cisco and Tenacity Inc to introduce an "accessaphone", which meets all of the accessibility requirements that Lloyds was seeking. After several months of testing and demonstration, it was deployed in various sectors of the bank, and this is the first time this has happened in the UK industry. Lloyds had also conducted a study of the business costs and benefits of incorporating such new technology, and found that their performance would have been impacted had a switch not been made, and this would have hampered their customer service as well as competitiveness; it would also have led to employee dissatisfaction and drawn the risk of legal action.

Northern Bank introduced the first talking ATM in United Kingdom in 2005. Prior to 2005 the base software in the ATMs had been upgraded, and this was able to support the addition of the audio software.[121] A third party was hired to modify the audio as was required, and customers with visual impairment were asked to test the different functionalities and texts before they were deployed for correct synthetic voice, speed and clarity of delivery, and also the content.[122] Initially, only the internal ATMs were modified for security reasons, but due to the good response, more and more of the bank's ATMs are audio-capable. Currently, more than a fourth of its ATMs are accessible for all.

United States of America

In the United States, there are several laws that govern rights of persons with disabilities. The Americans with Disabilities Act (ADA) was passed in 1990 and it prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications.[123] Further, Section 508 of the Rehabilitation Act establishes requirements for electronic and information technology developed, maintained, procured or used by the Federal government. Section 508 requires Federal electronic and information technology to be accessible to persons with disabilities, including employees and members of the public.[124]

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[121] "We need more talking ATMs", available at http://conversation.which.co.uk/money/talking-cash-machines-atm-rnib-making-money-talk-campaign-banks/.

[122] See generally: "Making Money Talk", available at www.rnib.org.uk/getinvolved/campaign/yourmoney/documents/make_money_talk_word.doc.

[123] A Guide to Disability Rights Laws, available at http://www.ada.gov/cguide.htm

[124] *Id.*

In 2012, updated ADA standards were issued for banks, mandating that ATMs be made accessible for persons with disabilities. The updated rules have added supplemental regulations or advisory guidelines that few banks—other than the national institutions—comply with for advanced instructional and security features for blind or physically disabled customers.[125] While this exercise has started, it has not been completely effective so far.

"According to research outfit Phoenix Marketing International, more than half of the 225,000 bank-based machines—and close to a quarter of the 215,000 ATMs operated by independent sales organizations (ISOs) on behalf of retailers and the like—don't meet the updated standards for ATMs, falling short of new privacy or access standards or speech-enabled technology requirements."[126]

Local and regional banks in the United States are struggling to comply with the guidelines.[127] National banks, such as Wells Fargo, are doing relatively better. For example, Wells Fargo Bank was threatened with a class-action lawsuit for discrimination against customers with disability and agreed to install talking automated teller machines for the blind, becoming the first bank to do so in 1999.[128] Since then, almost all the ATMs of the bank in its state of California are accessible for those with visual disabilities. The bank worked with ATM manufacturers like Diebold and NCR to come up with such machines; this technology is now being used by such vendors across the world. By and large, the threat of lawsuits appears to have helped to keep the banking sector working hard to ensure that standards are met.[129]

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[125] Glen Fest, "Making ATMs Accessible", available at http://www.americanbanker.com/magazine/121_10/complying-with-ada-guidelines-makes-atms-more-accessible-1042410-1.html.

[126] *Id.*

[127] Robin Sidel, "ATMs fall short of disability rule", available at http://online.wsj.com/article/SB10001424052970204276304577265710282201338.html.

[128] Arthur Louis, "Wells to use ATMs that Talk", available at http://dredf.org/press/Wells_Fargo_ATMs_SF_99.shtml.

[129] "Talking ATM History: Litigation Plays a Role", available at http://lflegal.com/2009/09/atm3/.