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ICT Assistive
Technology
Private Sector
Innovation Study

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e-Accessibility in Qatar



qatar assistive technology center



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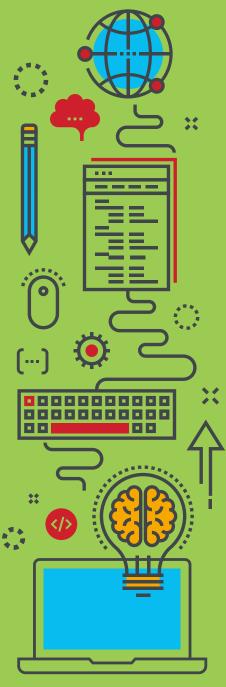
WORKING TOGETHER TOWARDS DIGITAL INCLUSION ACCESSIBILITY INNOVATION IN OATAR

Mada, Qatar Assistive Technology Center, is a nonprofit organization under the umbrella of the Ministry of Transportation and Communication committed to connecting persons with information and communication **UN Convention on Persons** with Disabilities (PWDs), in recognition that technology is pervasive across a breath of private sector activates and inherent in the Ministry of Transportation and Communications' strategy.

Mada works to improve digital inclusion for persons with disabilities in the State of Qatar. Mada's vision and mission are as follows:

Vision: "All people with a disability in Qatar reaching their full potential through Information and Communication Technology."

Mission: "Unlock the potential of all people with a disability in Qatar by enabling both individuals and their environment through Information and Communication Mada not only enables PWDs but also their environment. Mada believes it's not enough to simply empower an individual to truly support him/her to the fullest; it is equally critical, if not more so, to address the issues of the PWDs living environment to ensure that they have all that is needed to succeed.



Mada strives to accomplish its goals through strategic and operational partnerships with critical players within the PWD's ecosystem.

Mada prioritizes three key domains that have the potential to positively impact access to society by PWD's in Qatar. The three focus areas are Education, Employment, and Community. Mada enables the sectors through provision of advisory services and policy recommendations.

Mada is committed to fostering innovation and facilitating the development of new solutions particularly by emphasizing the creation of relevant Arabic language Assistive Technologies to better serve increasing local and regional needs. Mada Technology manufacturers and relevant private sector entities worldwide to develop innovative Assistive Technology as conducting relevant research studies to keep Mada and the region updated on the latest breakthroughs and international best practices.

periodical, which aims to be a key information resource for disseminating the facts about

latest trends and innovation in the field of Assistive Technology. This quarterly publication intends to be a window of information to the world, highlighting the pioneering work done in our field to meet the growing demands of Arabic Assistive Technology products and services in Qatar and the Arab region.

It is our pleasure to have your esteemed readership. Your involvement and feedback are highly valuable to us as it will allow us to improve future publications. This newsletter will be available by email and print, as well as other accessible formats upon request.

MADA team

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TAWASOL ==

FIRST ARABIC-BASED AAC SYMBOL SET DEVELOPED IN QATAR

Individuals with profound speech and language difficulties rely on Augmentative and **Alternative Communication** (AAC) systems to supplement or replace existing speech in order to effectively communicate with others. According to the American Speech-Language-Hearing Association (ASHA) "AAC includes all forms of communication (other than oral speech) that are used to express thoughts, needs, wants, and ideas. We all use AAC when we make facial expressions or gestures, use symbols or pictures, or write".

Speech-Language Therapists and Special Education Teachers in the Arabian Gulf constantly face challenges in using appropriate symbols for AAC systems as they have to depend on westernized symbols. Most of the free and paid-for AAC symbol sets available in the market have been designed in the USA and Europe for wordlists in English and European languages. These symbols often tend to have different cultural and contextual representations when presented within the local Arab society.

Additional challenges towards using westernized symbol sets within the region involve therapists and teachers being from a different language and cultural background compared to the AAC users.

The larger population in the Arabian Gulf States is composed of expatriates. leading towards the need to effectively communicate with people having different dialects and language fluencies. Furthermore, the Arabic language is spoken differently when communicating in formal Arabic and colloquial Arabic. All such factors, related to the need to effectively communicate within a society with varying verbal communication languages/styles along with different interpretation of visual symbols on a cultural and contextual level, had raised the need to develop an AAC symbol set to cater for the concern population.

In 2013 Mada embarked on a project to develop an AAC symbol set called TAWASOL Symbols which is focused towards the Qatari Arabic language and the modern standard Arabic MSA.

The project was launched in collaboration with University of Southampton and Hamad Medical Corporations, and funded by Qatar National research Fund (QNRF). The initial challenge was to select a suitable set of word and symbol lists that were culturally and contextually appropriate towards the local society.





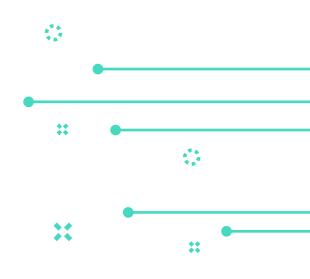
"AAC includes all forms
of communication
(other than oral speech)
that are used to
express thoughts,
needs, wants, and
ideas."



The process began by collating word lists from AAC users attending relevant institutions (school and clinics). The next step involved comparing this list to a list of the most frequently used words in spoken Arabic as well as written Arabic for literacy schemes. This allowed to come up with a selection of core symbols and fringe vocabularies. A dedicated online platform was built to compare the newly developed Arabic symbols with existing English language symbols from the ARASAAC symbol set. Further, the online platform allowed to collect votes and comments from evaluators who helped towards selecting the final set of Arabic symbols. The pool of evaluators consisted of Linguists, AAC users, Parents, Therapists, and Teachers. Multiple cycles of voting were conducted before deciding on the final set of symbols. Currently, the Arabic symbol set is available for use through its website – www.tawasolsymbols.org – alongside with the ARASAAC English symbol set.



More symbols will be added to Tawasol in the future in order to expand the range of vocabulary in the current symbol set which includes 800 locally designed symbols.



MADA Conducts ICT Assistive Technology Private Sector Innovation Study

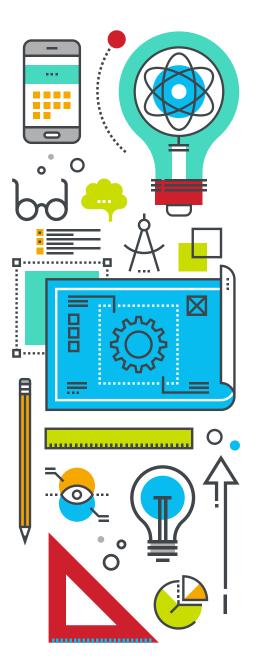
Historically, the private sector has made a vital contribution towards the growth and maturity of the Assistive Technology (AT) industry around the world. Being a relatively new field of work, the Assistive Technology industry is still considered a niche market with limited resources and client base. Recent trends indicate that the Assistive Technology sector is becoming mainstreamed, with its features being incorporated within common products like mobile phones and televisions. However, this industry still has considerable room for growth to cater the needs of persons with disabilities in the Arab region.

According to a study conducted in 2010 by the Australia's Productivity Commission, "The non-government (disability) sector facilitates and contributes to building social capital, which is the relationships, understanding and social conventions that form an important part of the mediating environment that shapes economic and social opportunities, and the extent of non-government activity is often viewed as an indicator of the health of society".

Recognizing the value of private sector contribution towards the Assistive Technology market, Mada (Qatar Assistive Technology Center) decided to conduct a study that aimed to ascertain the factors that would facilitate private sector growth for the ICT-related Assistive Technology industry in Qatar, and evaluated the findings to create recommendations on stimulating growth within this sector. The purpose of this study was to understand and evaluate the best practices set by the international private sector and their approach to innovation both within their home markets and abroad.

The study sought to identify which strategies could work best within the local context and potential steps the private sector could take to improve their innovative footprint in the Assistive Technology market within Qatar.

A varied approach was taken, both to engage locally to identify best practice within the ICT sector, and externally with private organizations who have excelled in the disability sector in other countries.



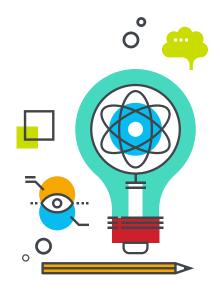
It was found that a combination of factors have influenced the Assistive Technology private sector's growth and innovation. The primary elements responsible for this have been as follows:

- National Disability-Related Policies: a natural evolution in the establishment of innovative Assistive Technology products and services has been the presence of national policies that effectively cater towards the local needs of persons with disabilities. It is important to create mechanisms to monitor the Assistive Technology needs of local persons with disabilities and convey them to the market for potential development of relevant solutions.
- Access to funding and market space for start-ups to create disability-related products and services: the private sector faces many challenges in the counterparts in mainstream industry do not. Chief among them is the advancement of the disability agenda within the country, whose grasp of accommodation is still in the early stages. Assistance from the government would not only promote private innovation. but further advance the government's own agenda for a truly inclusive population.

 Availability of funding mechanisms for end users to access Assistive Technology related products and services in all domains of life such as Education, Employment, and Community: a long standing solution for the progression of individuals with disabilities are sustainable funding models enabling solutions to be purchased. Within the Arab region, there are countries providing free medical services to citizens; however, that might not be the case when it comes to providing Assistive Technology solutions. Sustainable programs must be implemented to allocate funds for the provision of disability solutions (e.g. Assistive Technology products and services) for every disabled individual within education, workplace, and community in order to ensure the access to an evaluation for accommodation.

The key to success is the holistic approach to disability accommodation, together with a sustainable infrastructure. Mada intends to appropriately disseminate the study among the private sector industry and relevant public sector entities in Qatar.

The implementation of the study findings can considerably impact the regional Assistive Technology market by educating relevant parties of current and future trends as well as providing them with a more sustainable ground for developing innovative solutions.





SHIFTING MARKET TRENDS ASSISTIVE TECHNOLOGY **INDUSTRY**

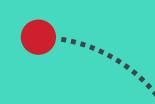
FROM SPECIALIZED **TO MAINSTREAM**

The field of Assistive Technology (AT) gained its initial and the implementation of AT recognition as a profession with the Technology-Related Assistance Act for Individuals with Disabilities (The Tech Act) being signed into law in the United States in 1988. This act formally defined, for the first time, the terms "Assistive Technology Services". Since its official inception, the field of AT has continuously evolved at a rapid pace, primarily driven by constant technological breakthroughs achieved throughout this era.

Predominantly, the development have been perceived as an expensive affair. This is because AT products can often be highly specialized and technologically complex in design. These products are developed to meet the specific needs of a small part of the population. Such factors frequently led to AT solutions being expensive and targeted towards a niche market

The advent of computers and smartphones, coupled with swift evolution of Information

& Communication Technology (ICT) services, have greatly impacted the AT industry. The propulsion of computer usage within multiple settings (e.g. has opened up a whole new set of "mainstream" needs that can be catered by AT. For instance, the Text-to-Speech (TTS) technology used in screenreader software for the blind is nowadays being integrated into mainstream applications like GPS devices and others.



AT integration into mainstream devices such as smartphones is also increasingly becoming a normal trend. Major mobile phone operating systems like iOS and Android are released with a complete set of accessibility suite.

These features include screenreading apps like Voiceover (iOS) and Talkback (Android), "intelligent" apps such as Siri (iOS) and OK Google (Android) that allow to communicate and operate devices using voicebased commands, display contrast settings etc.

Since devices like mobile phones work in various accessibility features are also available in multiple languages such as Arabic, further increasing the reach of AT usage. Modern day inclusion concepts like Universal Design (UD), coupled with factors like the steady growth of elderly populations, and improved rights and legislations accommodating needs of Persons with Disabilities (PWDs) in external environments like education and workplace settings, have led to the implicit incorporation of AT features within mainstream products. Further examples of such products were showcased at international AT events like the M-Enabling Summit 2016 by non AT-related organizations like Facebook and Amazon.

Facebook talked about a feature called Automatic Alternative Text, which attempts to verbally describe the contents of photos posted on Facebook. Amazon

featured Alexa, a mainstream device that plays music, answers questions, reads the news, and reports the weather and more by listening to voice commands. Additionally, Alexa also allows to control lights, switches, and thermostats. Although a large part of AT is becoming available in mainstream products, the need for highly specialized AT (e.g. Braille Notetakers, Eye gaze based AAC systems) will still remain as they serve the complex needs of individuals with profound disabilities, and such AT will continue to be relatively expensive due to high development costs and a smaller market segment.

The future of AT appears to be of a scenario where ATrelated products and features will be used by a wide ranging section of the population, not only PWDs, thus making these solutions more affordable and cost-effective.



The future of AT appears to be of a scenario where AT-related products and features will be used by a wide ranging section of the population.



"DISABILITY IS AN EVOLVING **CONCEPT AND THAT DISABILITY** RESULTS FROM THE INTERACTION BETWEEN PERSONS WITH **IMPAIRMENTS AND ATTITUDINAL** AND ENVIRONMENTAL BARRIERS THAT HINDERS THEIR FULL AND **EFFECTIVE PARTICIPATION IN SOCIETY ON AN EQUAL BASIS** WITH OTHERS."

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)



E-ACCESSIBILITY IN QATAR



e-Accessibility is vital to empower all the members of the community, including the blind, partially sighted and the elderly. As stated by the World Health Organization (WHO), "e-Accessibility refers to the ease of use of information and communication technologies (IC+Ts), such as the Internet, by persons with disabilities" (WHO, 2013).

International e-Accessibility standards and guidelines have been established and adapted throughout the world to promote e-Accessibility. Examples of such standards are World Wide Web Consortium (W3C) standards for ease of access to information, Web Content Accessibility Guidelines (WCAG) providing referenceable technical standard for web content accessibility.

To conform to these standards and guidelines, in May 2008 Qatar became a signatory to the United Nations Convention on the Rights of Persons with Disabilities. The convention provides a new approach to support the changing perception of disability and promote the human rights of persons with disability by provisioning equal opportunities to access digital

content. In 2011, Mada played a vital role in incorporating Qatar's e-Accessibility Policy, which proved to be an important building block in promoting e-Accessibility and Assistive Technologies in the country. The policy laid the foundation for several national initiatives in Qatar, further establishing and maintaining its signatory position at the UN Convention.

Mada offers services that include consultations to web developers and content managers, providing them with insights of up-to-date e-Accessibility concepts and practices to promote and support their commitment towards developing accessible websites and digital platforms.

An initiative by Mada called the "Qatar E-accessibility Award" provides scores and ranking of Government and major organizations in Qatar based on WCAG 2.0 compliancy.

Mada certifies the websites as per the monitor results. which are based on succession criterion of e-Accessibility. The three levels of accreditation are Level 1: Access Planning, Level 2: Access Certified, and Level

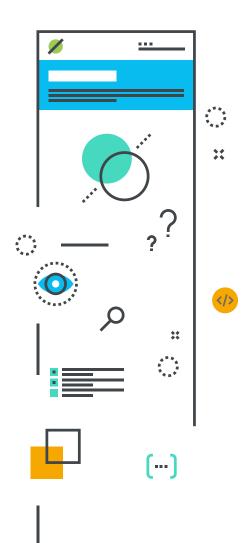
3: Access Award, A minimum score of 90% thorough usability testing by the e-Accessibility team of Mada are prerequisites to awarding Level 2 certification.

A good example of accessible website of Qatar is that in Hukoomi (www.gov.qa), which is the country's official e-Government Portal. Mada's e-Accessibility team has worked closely with the Hukoomi website developers, improving accessibility and usability of the dynamic content and other features. As a result of its continuous compliance with accessibility guidelines WCAG 2.0 (AA), Hukoomi website has successfully received Level 2, Access Certified Qatar National Web Accreditation from Mada.





TOP TEN WAYS TO MAKE YOUR WEBSITE ACCESSIBLE



- THE WEBSITE MUST BE OPERATABLE WITH A KEYBOARD FOR PEOPLE WHO **CANNOT USE A MOUSE**
- ALL NON-TEXT ELEMENTS AND **CONTENT MUST HAVE A TEXT EQUIVALENT**
- ALL CONTENT AND USER INTERFACES **MUST BE IN A LOGICAL SEQUENCE**
- WEBSITE LAYOUT NAVIGATION. **CONTENT, AND FUNCTION MUST ALWAYS BE CONSISTENT**
- WEBSITE DOCUMENT STRUCTURE HAS TO BE USED APPROPRIATELY
- **ESTABLISHED INFORMATION AND** RELATIONSHIP BETWEEN CONTENT **STRUCTURE**
- **USE SCALABLE SIZING AND** POSITIONING OF TEXT AND VISUAL **LAYOUT**
- **USE DIV ELEMENT WITH CSS STYLING** FOR WEB PAGE LAYOUT
- WEBSITE CONTENT AND PURPOSE MUST g BE UNDERSTANDABLE TO EVERYONE
- **COLOR SHOULD BE USED** APPROPRIATELY WITH GOOD VISUAL **CONTRAST AND NOT USED ALONE TO CONVEY A MEANING. PROMOTING AN ACTION OR RESPONSE**

A GLOBAL PERSPECTIVE **ON DISABILITY**



Disability is a global issue that affects communities all around the world. According to the World Health Organization (WHO) and the World Bank, there are more than 1 billion persons with disabilities on the planet. That means that over 15% of the world's population have some sort of limitation when it comes to their sight, hearing, learning, communication, and mobility functions.

The issues that persons with disabilities face are also universal. Employment, health care, and education are still largely inaccessible to the disabled no matter where they live. Poverty and maturity of infrastructure impact the severity of these obstacles, but disabled people all around the world are bound by a common set of challenges that need to be overcome. That's why when the WHO and the World Bank published the World Report on Disability (WRD) in 2011, governments and policy makers from around the world looked to the international document to reflect on their own national strategies tackling disability and accessibility.

The report made several key findings as well as a set of recommendations. The first key finding of the report was that persons with disabilities are very susceptible to unemployment. In North America, Europe, Australia, South Korea, and Japan, the employment rate of PWDs is 44%, half of the rate of employment among able-bodied people.

Another key finding of the report discussed the barriers in accessing health care for persons with disabilities. The report found that half of the world's disabled population cannot afford health care, and that they are more likely to face inadequate care, be denied care outright, or be treated considerably worse than nondisabled people.

The WRD also addressed the issue of education and children with disabilities. The report states that there are considerable education completion gaps and that this pattern is even more acute in poorer countries. As a result of all these factors, persons with disabilities are largely forced into a life of dependency, even when it comes to simple day-to-day tasks.

> There are more than 1 billion persons with disability on the planet."

The key findings of the WRD were also predicated on a series of fundamental truths about disability. They are:

- The prevalence of disability among people is high and growing due to factors such as ageing, violence, road traffic accidents, and natural disasters
- Women and the poor are impacted more greatly by disability than others
- Most of the obstacles persons with disabilities face are avoidable, meaning that disability itself can be overcome

The WRD didn't stop at investigating some of the main issues facing PWDs and the underlying factors that drive them. The report also made a set of recommendations aimed at providing a strategic framework for governments and policy makers around the world to work within.

WORLD REPORT ON DISABILITY





The nine recommendations are meant intersectional and to be addressed by decision makers and advocates together, thus providing a comprehensive vehicle for change in the quality of the lives of disabled people around the world.

The nine recommendations of the 2011 WRD are:

- 1. Enable access to all mainstream systems and services
- 2. Invest in programs and services for persons with disabilities
- 3. Adopt a national disability strategy and a plan of action
- 4. Involve persons with disabilities
- 5. Improve human resource capacity
- 6. Provide adequate funding and improve affordability
- 7. Increase public awareness and understanding about disability
- 8. Improve the availability and quality of data on disability

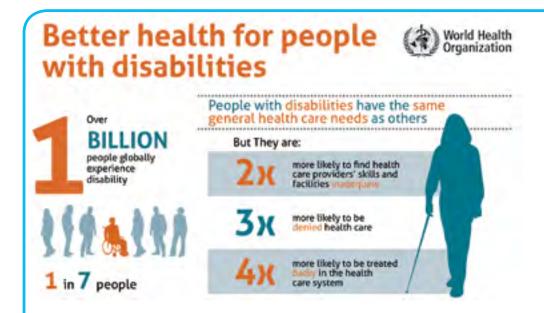
9. Strengthen and support research on disability

The recommendations and the findings of the report have since informed many national initiatives around the world across the health, education and employment sectors.

Three years later, the WHO released "The 2014-2021 Global Disability Action Plan", which was seen as a substantial step towards achieving the recommendations made by the 2011 WRD. The action plan was endorsed by all member states of the WHO, agreeing to implement the following basic principles:

- Removing barriers and improving access to health services and programs
- Strengthening and extending rehabilitation, assistive devices and support services, and community-based rehabilitation
- · Enhancing collection of relevant and internationally comparable data on disability, and research on disability and related services

Unlike the World Report on Disability, the action plan explicitly outlines proposed actions for member states. international and national partners, as well as the United Nations secretariat. The action plan also outlines a monitoring mechanism to continuously assess the achievement of all objectives.



Both the report and the action plan are guided by the founding principles of the 2007 United Nations Convention on the Rights of Persons with Disabilities. These are:

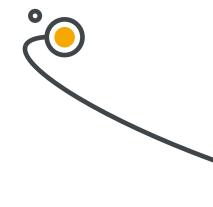
- Respect for the inherent dignity, individual autonomy, including the freedom to make one's own choices, and independence of persons
- Non-discrimination
- Full and effective participation and inclusion in society
- Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity
- Equality of opportunity
- Accessibility
- Equality between men and women
- Respect for the evolving capacities of children with a disability and the right of children with disability to preserve their identities
- Respect for the continued dignity and value of persons with disabilities as they grow older

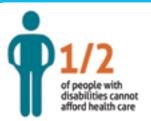
At the heart of all the recommendations made by the United Nations and its several bodies has been the insistence on the need of better data.

The Model Disability Survey has subsequently been held up as an ideal approach to get better and more accurate data regarding persons with disabilities.

According to the WHO, "The Model Disability Survey (MDS) is a general population survey that provides detailed and nuanced information about how persons with and without disabilities conduct their lives and the difficulties they encounter. regardless of any underlying health condition or impairment. The MDS helps member states identify the barriers that contribute to the problems people encounter, which, in turn, helps guide policy and service development. The MDS can also contribute to monitoring the Sustainable Development Goals (SDGs)".

Within the Qatari context, Mada creates policies and programs that are guided by the WHO World Report on Disability and the action plan. As such, the center is truly informed by a global perspective on disability.





more likely to suffer catastrophic health expenditure



These out-of-pocket health care payments can push a family into poverty

Rehabilitation and assistive devices can enable people with disabilities to be independent





people globally have moderate to profound hearing loss Production of hearing aids only meets:

10% of global 3% of developing need countries needs

Making all health care services accessible to people with disabilities is achievable and will reduce unacceptable health disparities





make health



train all health care workers in disability issues including rights



invest in specific services such as rehabilitation

Source: Rapport mondial sur le handicap: www.who.int/disabilities/world_report



VARYING DEGREES OF DISABILITY EXTEND THROUGHOUT THE OATARI POPULATION, **INCLUDING CHILDREN, WITH PREVALENCE** RATES REMAINING FAIRLY CONSTANT BETWEEN **AGES 10 AND 50. ABOUT 4% OF QATARI** HOUSEHOLDS INCLUDE A DISABLED MEMBER. **BUT PERSONS WITH DISABILITIES OFTEN FACE DISCRIMINATION, REMAIN LESS EDUCATED** AND HAVE INSUFFICIENT ACCESS TO THE MAINSTREAM LABOR MARKET.

Qatar National Development Strategy 2016

In the year 2010, there were only 163 Qataris with disabilities who were employed (133 men, 30 women)

> The Ministry of Development **Planning and Statistics**

ACCESSIBLE TRANSPORTATION

A LOOK AT UBER'S **EXPANSION OF SERVICES FOR PERSONS WITH** DISABILITIES.

For millions of people around the world, Uber, the San Francisco-based transportation app, offers a convenient gateway to car services in hundreds of cities around the world. Users of the technology are able to request a wide range of vehicles, including boats and food delivery services in some cities, just by touching their smartphones. Until recently, persons with disabilities requiring wheelchair accessible vehicles have been shut out from this technological revolution.

However, with the launch of uberASSIST & uberWAV, things are changing. Now, persons with disabilities across major cities in the world are able to access both Wheelchair Accessible Vehicles (WAV) and standard vehicles driven by specially trained drivers to assist those with different disabilities. The accessible services are a result of partnerships built between Uber and local stakeholders that are working to provide more extensive accessible transport services. To ensure the availability of WAV services at all times, Uber has even partnered with traditional taxi services that already operate large fleets of accessible cars.

For example, uberWAV in New York City will connect you with a standard accessible yellow cab. In that instance, payment is made directly to the driver, and not through the app as with all other requests. In cities like Toronto, a standard accessible taxi arrives, and payment is done through the app, creating a truly seamless Uber experience.

In addition to uberWAV. Uber has also rolled out another service, uberASSIST, training drivers to assist riders into vehicles that can accommodate folding wheelchairs, walkers, and scooters. This service is designed for those persons with disabilities, or the elderly, that don't require to remain seated in their mobility device while traveling.

With the introduction of these services, persons with disabilities are able to enjoy greater freedom in cities where pre-arranged bookings are required to access WAV services. It also creates a more accessible market for drivers. creating further impetus for more accessible cars to be on the road.

This policy has the potential to have a huge impact on the lives of persons with disabilities, especially in cities where there is limited access to public transportation. Even in larger cities like London, there are only a few accessible stops on the system, making it virtually impossible for most persons with disabilities to travel throughout the large metropolis.

Currently, uberWAV is available across many major cities in the United States. Canada and Europe. Recently, Uber in the MENA region has announced that will be unveiling both uberWAV and uberASSIST within the upcoming year. This is great news for riders with disabilities in Qatar and throughout the Arab world.

MAKING **CONNECTIONS** THAT MATTER

A success story driven by accessible ICT

Saleh Al Kuwari is an aspiring Qatari entrepreneur

When Saleh Al Kuwari first started working with the assessment team at Mada, communication technology was barely present in his life. Using a mobile phone from the pre smartphone era, Saleh was eager to make a digital leap into the world of advanced communication tools. By harnessing the power of social media tools, Saleh, an aspiring journalist, wanted to connect to readers and viewers worldwide without being held back by his visual disability.

Aged 42, Saleh had found touch phones impossible to navigate with his visual disability. Although the iPhone, his device of choice, came equipped with a range of accessibility features, using a standard mobile phone defined his comfort zone.



The steep learning curve that faced Saleh, along with all the hesitancy it carried, was the first challenge that faced his assessor.

To start familiarizing Saleh with the use of a touchscreen, Mada suggested to start using an iPad, which utilizes the same operating system as the iPhone but provides a larger surface. This would allow Saleh to familiarize himself with the use of a touchscreen brought to life by built-in text-to-speech technology.

Armed with powerful communication technology, Saleh gained confidence and was motivated to learn how to use it in a way that improved his ability to communicate, and ultimately, his quality of life.

After each session, Saleh would be given a set of tasks by the assessment team to hone his newly acquired skills. This would range from setting up an email to creating and sharing video content with his WhatsApp contact list. Throughout the entire process, Mada conducted all the training and follow-up in Arabic, thus offering a localized and custom-designed training experience that was built on an intimate understanding of the client's abilities and ambitions.



After an intensive learning period of a month and a half, Saleh was given the opportunity to navigate the technology on his own for a week.

During this time, the Mada assessment team took a back seat to ensure that Saleh was able to use the technology independently. It was a critical stage in the work that was being done with Saleh on introducing the technology, particularly in light of the steep learning curve that was at the heart of the process.

Using a separate SIM card from his everyday phone, Saleh was allowed to play with the new device without the fear of being disconnected. This proved to be a critical step that alleviated the pressure of implementing the new device. However, when Saleh came back to the Mada center one week later. he had completely adapted the new device, and was using it exclusively.

Using his new App Store account, Saleh had independently downloaded several Arabic language news apps, and for the first time was able to access newspapers and magazines that he aspired to eventually write for.

It broke down barriers to a world that Saleh, despite his passion and journalistic skills, was virtually locked out of.

One of the most impactful uses of the technology on Saleh was his new ability to use navigable maps. Although he had lived his entire life in Doha, he had never been able to independently navigate the city, thus forbidding him from gaining a complete sense of his whereabouts and distances between key areas in his everyday surroundings. By introducing this technology to him, Saleh was now given, for the first time, the ability to create a virtual map in his mind, one that can be navigable and measured. He was also able to make spiritual strides with his technology.

Using an app to read the Holy Quran, Saleh was able to explore the text in greater detail by utilizing the phone's builtin accessibility feature. This improved ability nicely rounded off the social and cultural impact that the technology had on his life. Now, Saleh's technology gives him greater confidence and a heightened sense of self.

He is able to communicate more effectively, and expresses himself more accurately.

He has forged new platforms for sharing his writing and video content. By creating an implementation strategy that was focused on delivering customized training in the Arabic language, the Mada assessment team was able to ensure that Saleh created organic and sustainable connections with the new technology, ensuring a lifetime of connectivity and exploration.

"After working with the Mada assessment team, I now have equal access to technology. This has given me a much needed boost to work even harder on my projects in the near future."



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- FOR SUBMISSION OF **ARTICLES AND FEEDBACK CONTACT US AT:** INFO@MADA.ORG.QA
- MADA.ORG.QA
- +974 4459-4050

