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**UNOBSTRUCTED ACCESS TO INFORMATION AND
COMMUNICATION TECHNOLOGIES SERVICES: THE CASE
OF TURKEY**

*BİLGİ VE İLETİŞİM TEKNOLOJİSİ HİZMETLERİNE ENGELSİZ ERİŞİM:
TÜRKİYE ÖRNEĞİ*

Assist. Prof. Abdulkadir ÖZDEMİR

*Atatürk University, Faculty of Economics and Administrative Sciences, Management Information
Systems Department
Erzurum, Turkey*

Assoc. Prof. Abdullah NARALAN

*Atatürk University, Faculty of Economics and Administrative Sciences, Management Information
Systems Department
Erzurum, Turkey*

Res. Assist. Ahmet İlker AKBABA

*Atatürk University, Faculty of Economics and Administrative Sciences, Business Department
Erzurum, Turkey*

Abstract

About 15% of the world population and about 13% of Turkish population is comprised of disabled people; this means that every 8 people in Turkey possess limited disabled. Even if the ratios of the total seem to be low, when the issue is considered in terms of product and service demand of disabled, these ratios should not be neglected. However, disability is not only a common sense, but also a right and justice issue, because disabled people must have fundamental rights such as equal treatment, reputation,

ability to sustain their lives independently and being a part of the community. In this respect, we are obliged to provide required possibilities and opportunities for them to enjoy these rights. The necessities of disabled people are similar to non-disabled people so, disabled people should be perceived as an integrated part of the society and satisfy their necessities, instead of distinguishing them as a separate part. At this point, the most crucial duty belongs to all the corresponding individuals, institutions, and businesses. Access to information and communication technologies provides disabled to become integrated with the society and increase their life quality by offering easy mobility and access. Therefore this subject is very important for disabled. In this study, by addressing regulations arranged in Turkey for disabled in the fields of information and communication technologies, services and social responsibility projects of 6 leading telecommunication companies regarding disabled citizens are evaluated. Moreover, some suggestions which are believed to improve the case are included in the study.

Key Words: information, communication, technology, disabled people, Turkey

Öz

Dünya nüfusunun yaklaşık %15'ini Türkiye nüfusunun yaklaşık %13'ünü engelli vatandaşlar oluşturmaktadır. Bu da Türkiye'de yaklaşık her 8 kişiden birinin kısıtlayıcı engelinin olduğunu göstermektedir. Oranlar toplam içinde az görünse de bu vatandaşların mal ve hizmet talebi doğrultusunda değerlendirilirse göz ardı edilemeyecek oranlardır. Engelli meselesi sadece bir sağduyu değil, aynı zamanda bir hak ve adalet meselesidir. Engelli bireyler de eşit muamele, itibar, yaşamlarını bağımsız idame ettirme ve toplumun bir parçası olma gibi haklara sahip olmalıdırlar. Bu konuda bizim üzerimize düşen vazife ise, engelli bireylere bu haklardan faydalanmaları için gerekli imkân ve fırsatları sağlamaktır. Engelli bireylerin yaşama katılım alanındaki ihtiyaçları normal bireylerinkilerle farklı olmakla birlikte benzerdir. Bu bireyleri, toplumun ayrı bir kesimi olarak niteleme yerine bütünleşmiş bir parçası olarak algılayabilmek ve gerekli olanakları sağlayabilmek gerekir. Bu noktada en önemli görev konuyla ilgili tüm birey, kurum ve işletmelerindir. Bilgi ve iletişim teknolojilerini kullanma da engellilere hareket ve erişim kolaylığı sağlayarak yaşam kalitelerini artırma ve toplumla bütünleşme olanağı sağlamaktadır. Bu sebeple bilgi ve iletişim teknolojileri engelliler için büyük önem arz etmektedir. Bu çalışmada Türkiye'de bilgi ve iletişim teknolojisi alanında engellilere yönelik düzenlenen mevzuata değinilmiş, Türkiye genelinde haberleşme hizmeti sunan 6 büyük firmanın engellilere yönelik verdiği hizmetler ve gerçekleştirdikleri sosyal sorumluluk projeleri incelenmiştir. Ayrıca

uygulanması halinde engellilere fayda sağlayacağı düşünülen birtakım öneriler sunulmuştur.

Anahtar Kelimeler: bilgi, iletişim, teknoloji, engelli, Türkiye

I. DESCRIPTION OF DISABLED ¹

We see that words, “impairment”, “disability” and “handicap” are used for different meanings in foreign resources and international documents. All these expressions are translated into Turkish with one word only, “disabled”; however term handicapped is used in the law [1].

While the word “handicapped” is accepted as a term which requires putting “handicap” in the focusing point and objectifies the fact of handicap, disability, on the other hand, is accepted as a term which seems to be able to succeed in getting rid of this obligation by time and providing softening and flexibility in people’s minds [2].

A. *Disabled description of the United Nations:*

The description of disabled is given in the Declaration of the Rights for Disabled which is accepted by the General Assembly of the United Nations as “People who cannot carry out activities in the personal or social life by himself/herself due to a genetic or adventitiously gained insufficiency” [3].

B. *Disabled description of the World Health Organization (WHO):*

Different approaches are brought to the disabled term by the World Health Organization, the United Nations and the International Labor Organization (ILO). World Health Organization makes a description and classification which is based on the results of diseases and focuses on the health issues for the term [4]:

- **Impairment:** Impairment refers to an insufficiency or instability of psychological, anatomic or physical structure and functions in terms of health.
- **Disability:** Disability refers to losing and limitation of an ability to carry out an activity when compared to another human being who can be deemed to be normal due to impairment.
- **Handicap:** In the area of health, handicap addresses a disadvantage which prevents or limits the ability of carrying out an activity of a person when compared to another human being who can be deemed to be normal due to impairment or disability.

¹ In this study, the term disabled is used on behalf of the term handicapped as in the legislations of Turkish Republic.

C. *Disabled description in the Law no. 5378 for Handicapped of the Republic of Turkey:*

A person who has lost his/her physical, mental, spiritual, emotional or social abilities in various degrees and as a result cannot adopt social life or meet daily needs of his/her own and who requires services of protection, care, rehabilitation, consultancy and support is referred as disabled [5].

I. MOST COMMON DISABILITY TYPES IN THE WORLD AND IN TURKEY[6]

Visually disabled: Person with full or partial visual loss or disorder in one or both of his/her eyes.

Hearing-disabled: Person with full or partial hearing loss in one or both of his/her ears.

Speaking-disabled: Person who cannot speak due to any reason or who has disorder in his/her speech velocity, fluency or expressions or who has a voice disorder.

Mentally disabled: Person with mental disability in various degrees. Mentally retarded people or people with Down syndrome are included in this group.

Chronic Disease: Person who has a chronic disease which prevents his/her working capacity and functions and which requires permanent care and treatment.

Orthopedically disabled: Person who has a disability which is genetic or adventitiously gained and which prevents neural system or musculoskeletal system to operate regularly despite of all treatments and precautions.

Autistic disabled: Person who has neuropsychiatric or developmental disorder which may last all lifelong.

II. INFORMATION AND COMMUNICATION TECHNOLOGIES IN INTEGRATION OF DISABLED IN SOCIAL LIFE

The disabled, who constitute a majority in the society, cannot make use of technological developments in comparison to healthy people; however, recent technological developments tend to diminish problems of disabled [7].

Today, disabled people can carry out many activities without the help of others thanks to information and communication technologies, which enhances them to be integrated in the society and be more effective.

III. LAWS OF REPUBLIC OF TURKEY REGARDING INFORMATION AND COMMUNICATION TECHNOLOGIES [8]

There are many disabled oriented laws in Turkish Republic regarding Information and Communication Technologies, some of which are given below. Other than these, there are some decrees of the Council of Ministers, regulations, statements and other council decisions.

A. *Electronic Communication Law*

Item 4-(k) Considers special needs, including making use of technological developments, of disabled, old and others who require social protection.

B. *Global Service Law*

Item 3-(c) Takes precautions regarding affordable pricing and applicability of technological options for people with low income, disabled and who needs social support to make use of global service.

Item 4-(g) Commits to provide or support research, development, supply and availability of such disabled oriented technologies as information and communication technologies, motion facilitating devices and auxiliary technologies;

(h) Commits to provide access to information about such disabled oriented technologies as information and communication technologies, motion facilitating devices and auxiliary technologies.

Item 9-(l) States procedures and principles for people with low income, disabled and who needs social support to make use of global service by affordable prices in the basis of equity and not making any discrimination.

C. *Organizational Regulations of Information Technologies and Communication Authority*

Item 23-(1)(d) Doing studies and regulations regarding special needs, including making use of technological developments, of disabled, old and others who require social protection.

D. *Telegraph and Telephone Law*

Item 4-(j) Considers special needs, including making use of technological developments, of disabled, old and others who require social protection and provides special programs which include economic advantages for such users as specified in the principles, rules and conditions stated by the Authority.,

E. The Law regarding the Appropriateness of Approval of the Contract for Disabled Rights

Item 8-(2)(c) Encouraging the identification of disabled with an approach which is appropriate with the purpose of this Contract herein especially regarding all mass communication devices;

Item 9-(2) The Contracting States shall also take appropriate precautions for realizing the conditions given below:

(d) Making noticeable and understandable marks and signs in Braille² alphabet in all public buildings and facilities;

(e) Providing instant help for making access easier in all public buildings and facilities by means of guides, readers and professional sign language translators and devices;

(f) Encouraging help and support for disabled in appropriate manners in order for them to reach information;

(g) Encouraging disabled to access recent information and communication technologies including internet.

(h) Encouraging design, development and distribution studies for accessible information and communication technologies starting from the very first stage and therefore providing such technologies to be accessed by disabled in minimum costs.

Item 20-(b) Providing disabled to reach motion facilitating quality devices, auxiliary technologies, people and devices offering help by affordable costs;

(d) Encouraging manufacturers of motion facilitating devices and auxiliary technologies for paying attention to the needs of disabled.

Item 21-(a) Providing information for public in the manner that different disabled groups can also access this information by appropriate technologies and without paying an additional price;

(b) Making it easier for disabled to use sign language, Braille alphabet, body language and all other preferred communication devices or types in formal communications;

(c) Encouraging all private organizations providing public service to provide information or services, including internet, in a manner that disabled can reach and use;

² The alphabet which is formed by embossing on paper and easy to understand by finger for the use of visually disabled.

(d) Encouraging all private organizations providing mass communication services, including internet, to provide these services in a manner that disabled can reach;

(e) Supporting and accepting use of sign language.

IV. AVEA COMMUNICATION SERVICES INC.

A. Services [9]

i. Tariffs and/or Applications For Visually Disabled

Customers can listen to contract terms by clicking on the webpage <http://avea.com.tr/web/Hakkimizda/EngelsizErisim/AudioPage> In addition to this, those who are subscribers of Avea can listen to contract terms by dialing 500 and those who are not can listen to contract terms by dialing 4441500 via Avea Customer Services. Besides, customers of Avea can receive information about tariffs, change their tariffs, take information about recent promotions and benefit from such promotions via Avea Customer Services Interactive Voice Response System by dialing the same number.

Moreover, by contacting Invoice Interrogation and Payment Service free of charge by dialing 9333, customers can receive information about their invoices and make payment by credit card.

ii. Tariffs and/or Applications for Hearing Disabled

Hearing disabled can reach a copy of subscription agreement on the webpage http://avea.com.tr/web/~media/Files/bireysel/bireysel_abonelik.pdf. In addition to this, by visiting Avea Online Services Center, they can receive free of charge services specified below:

- Tariff information and alteration
- Existing usage quota information
- Product-service subscriptions
- Invoice and usage summary information
- Making payment by credit card
- Puk information

iii. Tariffs and/or Applications For Other Disabled

All disabled customers of Avea can speak with other Avea customers unlimitedly and for 400 minutes with customers of other GSM companies for 20" (Turkish Lira) per month by the tariff called "Let's speak hand by hand". Moreover, these customers can call 4443833 (Health Service at Home), 150 (Prime Ministry Communication Center), 153 (Municipal Police Office/Municipality) and 184 (Health Consultancy) services free of charge. They can receive information on the minutes left of their tariff by texting a message to 5555 by writing "SES" free of charge. The

detailed information about the scope and validity requirements of this tariff can be obtained on the webpage

<http://avea.com.tr/web/KonusMesajlas/Tarifeler/EleleKonusalimTarifesi>.

B. *Social Responsibility Projects* [10]

i. *The Project of "We create by our disabilities"*

Avea aims to create working opportunities for disabled as suitable to their disabilities, educations, working experiences, psychological talents and qualifications. 2921 disabled citizens have started working in private sector associations in between 2005 and 2011 as self-sufficient individuals. Thanks to this project;

- For working places where it is obligatory to employ disabled people, such employments have been provided in suitable manner for the working environment and by contributing to production process.
- Problems of transportation, not being able to find an answerer and rejection have been swept away.
- Such prejudices as disabled cannot produce or work in harmony with other people have been overcome.

The number of disabled employment by years is given in the table below.

Period	Number of Evaluations	Number of Employment	Rate of Employment
2005	1286	408	0,32
2006	1006	492	0,49
2007	1598	545	0,34
2008	1110	525	0,47
2009	1001	387	0,39
2009-2010	1272	564	0,44
TOTAL	7273	2921	0,40

V. **TURKCELL COMMUNICATION SERVICES INC.**

A. *Services* [11]

i. *Tariffs and/or Applications For Visually Disabled*

Turkcell informs its visually disabled customers about their invoices by Interactive Voice Invoice Information System. The customers making use of this system are called automatically after two days once their invoices are made out and informed about the amount of invoice, payment due date and summary of invoice.

If required by the visually disabled customers, they can receive their invoices in the format of prose e-invoice via Prose E-Invoice Service and have it read by reading software they use.

In addition, visually disabled customers can listen to newspaper news, columns and hundreds of books at the archives of National Library via the “My Partner Turkcell” application by dialing 8020. They can also benefit from voice educations prepared by Young Guru Academy (YGA) and Turkcell Informative Services.

Moreover, visually disabled customers can receive information about the location where they are at that moment by dialing 8081.

ii. *Tariffs and/or Applications for Hearing Disabled*

Turkcell has also improved its Visual Call Center service for the purpose of helping hearing disabled customers. Hearing disabled customers can make use of this service, which operates everyday between 10:00 and 19:00 except for Sundays by sign language, by calling Turkcell Customer Services free of charge. Moreover, by the service called “Make them listen while it rings”, hearing disabled customers make those who are calling them listen to the message “The person you have called is hearing disabled. You can send a SMS or MMS to him/her instead.”.

In addition to these, Turkcell Flagship Stores provide service in sign language for hearing disabled customers and help them meet their needs by the easiest manner.

B. *Social Responsibility Projects [12]*

i. *The Project of “Those running to future”*

The purpose of this project which is operated in cooperation with Turkcell and General Directorate of Youth and Sports of the Ministry of Youth and Sports is to raise young people who can represent Turkey in international level with success in future in such fields as tennis, swimming, weight lifting, athletics, skiing and bicycling of visually disabled. The bicycling of visually disabled which is a branch of Paralympics was started in Turkey as first thanks to this project.

ii. *The Project of “Sighting Eye”*

The communication of visually disabled customers is provided by Turkcell for year duration by the Bluetooth specialized mobile phones distributed to 5000 visually disabled citizens by The Ministry of Transportation, Maritime Affairs and Communication. When visually disabled customers of Turkcell send a SMS to 5554 by texting “GORENGOZ” via the mobile phones distributed by the Ministry; they receive a package of 200 minutes + 100 SMS + 100 MB mobile internet per month free of charge for 12 months which is valid for calls made to all other operators and fixed lines. Those visually disabled customers of other operators can also make use of this promotion when they carry their numbers to Turkcell.

Thanks to the device, visually disabled customers;

- Can record the locations on the device and therefore can choose the route by one button only,
- Can listen to date and time information,

- Can receive voice signal warning about the battery condition,
- Can surf the web, read their e-mails, read e-books, listen to radio,
- Can contact each other by Bluetooth,
- Can send their location as message,
- Can reach information about mass transportation services of municipalities by the Bluetooth infrastructure.

VODAFONE TELECOMMUNICATION INC.

A. *Services* [13]

i. *Tariffs and/or Applications For Visually Disabled*

The terms of the Vodafone subscription agreement is read via special software by Voice Subscription agreement application.

ii. *Tariffs and/or Applications for Hearing Disabled*

By the service called "Make them listen whoever is calling", hearing disabled customers make those who are calling them listen to the message "The person you have called is hearing disabled. You can send a SMS or MMS to him/her instead.". The only thing to do to receive this service is to send a SMS to 7060 by texting "ISITME".

iii. *Tariffs and/or Applications For Other Disabled*

Communication needs of all disabled customers are aimed to be met by tariffs called "Mini or Midi overcoming the Disabilities" details of which are given below:

Tariff	Price (per month)	Content
Mini overcoming the Disabilities	10"	20.000 SMS to other customers of Vodafone
Midi overcoming the Disabilities	20"	20.000 minutes to call other customers of Vodafone

B. *Social Responsibility Projects* [14]

i. *The Project of "The Academy of Dreams"*

The purpose of the project which is started in 2008 by cooperation of Vodafone Turkey with United Nations Development Program (UNDP) and Alternative Life Association (AYDER) is to help disabled to avoid social discrimination, and support them to be active and productive by art. Startting from the date of establishment; those who are physically, mentally, visually or hearing disabled, chronic disease groups and the poor young take lessons on vocal, rhythm, dancing, filming, disc

jockeying, instruments, painting, designing and yoga free of charge. Already there are 1170 young people who have graduated from this academy.

ii. *The Project of "Social Inclusion Band"*

Social Inclusion Band is a voluntary music band which is formed of various musicians for a common purpose. The members of band are those disabled and volunteers. The students of the "Academy of Dreams" can meet with other musicians and take to the stage with them for concerts by this project. The band has brought many national or foreign musicians with students together up to today.

iii. *The Project of "The Company of Dreams"*

It is established by participation of 14 young people receiving education in the Academy of Dreams on drama and dancing for the purpose of providing an alternative stage for socially or physically disabled young people. The first drama of the Company of Dreams, "A Love Story" is put on the stage and the brand new one "Grease" is still being performed these days.

VI. TURK TELEKOM INC.

A. *Services [15]*

i. *Tariffs and/or Applications For Visually Disabled*

Türk Telekom, which is the first ever communication company started invoice application for visually disabled, sends special invoices which are printed in Braille alphabet to its customers who demand so by the application of Braille Alphabet Invoice.

The Company provides its visually disabled customers to make use of communication services easily by Braille Alphabet Subscription agreement application without requiring assigning an agent.

Visually disabled customers also can reach information about the invoice and its due date by calling 163 thanks to Voice Invoice application.

Moreover, visually disabled customers of Türk Telekom can listen to hundreds of books free of charge in the Telephone Library which is established in cooperation with Türk Telekom and Visually Disabled Technology Laboratories (GETEM) of the Bosphorus University.

ii. *Tariffs and/or Applications For Other Disabled*

Disabled customers who can prove that the ratio of disability is equal to or higher than 40% by certification can make use of 3.000 minutes valid for all domestic calls for 12,5" per month and they can also benefit from internet services by a discount of 25%. The retail prices for such services are determined separately by service providers. The "Disabled User Prices" which are determined by making a 25% discount from internet service wholesale tariff prices are given in the table below.

Access Speed	Quota	Dealing Model		IP Level VAE Model	
		Monthly Price	Quota Exceeding Price	Monthly Price	Quota Exceeding Price
1Mbps	1 GB	11,42"	0,006225"	7,88"	0,004125"
1Mbps	2 GB	12,50"	0,005700"	8,63"	0,003750"
1Mbps	4 GB	13,41"	0,004624"	9,59"	0,003144"
Up to 8 Mbps	4 GB	14,50"	0,004624"	10,27"	0,003144"
Up to 8 Mbps	6 GB	18,55"	0,003959"	11,14"	0,002837"
Up to 8 Mbps	Unlimited (25 GB AKN ³)	26,34"	-	16,29"	-

In addition to these, Türk Telekom provides pay phone service which is comfortably accessible for those disabled customers with wheelchair in order to help their life become easier. There are pay phones in Turkey in 37 provinces at 210 spots of which mostly are high traffic areas such as airports, hospitals and bus terminals which are all comfortably accessible for those with wheelchair.

B. Social Responsibility Projects

i. Siirt Türk Telekom Elementary and Work School

The Türk Telekom Elementary and Work School, which is one of the 76 education facilities established in Turkey within the scope of the Türk Telekom Schools Project that is one of the largest social responsibility projects ever carried out in the field of education in the country up to today, improves disabled students' living skills and help them integrate in the society. There are pre-school education unit, 40 classrooms serving for autistic, hearing, visually disabled children and educable and teachable mentally disabled children, a sports saloon, physiotherapy unit and multi-purpose classrooms in Siirt Türk Telekom Elementary and Work School.

³ ADK: Fair Usage Application is an application established to provide all users of network resources to receive the same quality service. Once the monthly downloading quota is exceeded, the usage speed for left days of that month reduces. The usage speed will continue at the offered limit again in the following month.

VII. TTNET INC.

A. Services [16]

i. Tariffs and/or Applications For Visually Disabled

Visually disabled customers can receive information about the content of subscription agreement thanks to Voice Interactive Subscription agreement.

Visually disabled customers can receive information about invoices via Voice Interactive Invoice Service.

ii. Tariffs and/or Applications For Other Disabled

In case disabled customers who can prove that the ratio of disability is equal to or higher than 40% by certification applies by themselves or via their first degree relatives, they can make use of discounted internet services by the tariff called "TTNET is with you". Types of packages and details are given in the table below:

	1 Mbps 1 GB	1 Mbps 2 GB	NET4	NET6	NET UNLIMITED
Package Price	16"	19"	22,5"	25"	45"
Speed	1 Mbps	1 Mbps	8 Mbps	8 Mbps	8 Mbps
Quota	1 GB	2 GB	4 GB	6 GB	Unlimited
AKN ⁴	-	-	25 GB	25 GB	50 GB
Quota Exceeding Price	0,010743"	0,010743"	0,00879"	0,00879"	-

VIII. TURKSAT SATELLITE COMMUNICATION CABLE TV AND OPERATION INC.

A. Services [17]

i. Tariffs and/or Applications For Visually Disabled

Subscription agreement is provided in Braille alphabet for visually disabled customers. Moreover, visually disabled customers can listen to their subscription and invoice information via call center by calling 4440126.

Tariffs and/or Applications For Other Disabled

Discounts are applied in some of the internet packages for disabled customers by the tariff called "Non-disabled". The tariffs and details are given in the table below:

⁴ The usage speed shall reduce to 3 Mbps.

Tariff which is to be discounted	Regular Tariff Price	Non- disabled Tariff Price
Up to 10 Mbps 20 GB Quota	39"	29,25"
Up to 1 Mbps, unlimited	29"	21,75"
Up to 1 Mbps pay-per-use	12"	9"
Up to 5 Mbps pay-per-use	16"	12"
Up to 10 Mbps pay-per-use	20"	15"
Quota Exceeding Price	3"	2,25"

IX. RESULTS AND SUGGESTIONS

The rights of disabled to reach the most significant element of the information age and information society, information, should be protected in a manner that they can make use of this service as much as possible while institutions should bring new applications and make improvements in current applications for disabled customers. We hereby state some actions which we believe can be beneficial within this scope:

- Re-arrangement of websites of companies serving in communication sector in a manner that visually and hearing disabled can also make use of
- Employing personnel in at least one branch office of corporations per each province in order to help disabled as much as possible
- Corporations' providing services and applications suitable for each type of disability
- Announcing changes in services to disabled customers by different methods as suitable for their disability (For instance announcing changes in sign language for hearing disabled customers and in readable format by reading software for visually disabled customers)
- Extending visual call center service
- Extending Voice Library service
- Corporations' providing discounted services not only for disabled customers but also for those relatives of them who undertake their care
- Making it possible for disabled customers to make use of services by discounted prices by taking that most disabled citizens are unemployed into account
- Designing auxiliary technology devices in a manner that disabled customers can access and make use of comfortably
- Providing disabled customers to reach such emergency services as fire-fighting and ambulance easily

- Providing disabled the information and communication devices in terms of social responsibility projects or aid campaigns and extending use of such devices by disabled.

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