

Sensory accessibility services in TV stations broadcasting in Catalan: the current situation and proposals for the future

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Abstract

This paper presents the main results of the project “Sensory accessibility services in TV stations broadcasting in Catalan: current situation, needs, and proposals for the future”, funded by the Catalan Audiovisual Council. Its aim is to offer an overview of the state of the art of the accessibility services that are currently offered from a sample of seven television stations broadcast in Catalan. The main conclusion is that although Spanish TV stations are legally obliged to produce accessible contents, accessibility is still a pending issue for the majority of broadcasters.

Keywords

Media accessibility, audio description, subtitling for the deaf and hard of hearing, sign language interpreting, Catalan-language television.

Resum

En aquest article es presenten els resultats principals del projecte “Serveis d’accessibilitat sensorial a les televisions catalanes: situació actual, necessitats i propostes de futur”, finançat pel Consell de l’Audiovisual de Catalunya. El seu objectiu era oferir una visió panoràmica de l’estat de la qüestió dels serveis d’accessibilitat que s’ofereixen actualment a partir d’una mostra de set televisions que emeten en català. La conclusió principal és que, malgrat que les televisions a Espanya tenen l’obligació legal d’emetre continguts accessibles, l’accessibilitat és encara una assignatura pendent per a la majoria d’emissores.

Paraules clau

Accessibilitat als mitjans, audiodescripció, subtitulació per a sords, interpretació en llengua de signes, televisió en català.

1. Introduction

People with disabilities or functional diversity represent 15% of the population¹ and access to communication is a right recognized in the United Nations Convention on the Rights of Persons with Disabilities (CRPD), a text which Spain ratified in 2007 with the optional protocol of Porto and later, the European Union in 2010. This ratification represented the acceptance of an international human rights treaty for the first time. Following the accession to the CRPD, the European Union has launched

various initiatives with the aim of guaranteeing and enforcing the rights of people with disabilities, such as the Audiovisual Media Services Directive of 2010, in which Clause 46 reads as follows:²

“The right of people with a disability and of the elderly to participate and be integrated in the social and cultural life of the Union is inextricable linked to the provision of accessible audiovisual media services. The means to achieve accessibility should include, but need not to be limited to, sign language, subtitling, audio-description and easily

understandable menu navigation.” (Directive 2010/13/EU of the European Parliament and Council 2010, 6)

Additionally, Article 7 of the same Directive states that “[t]he Member States shall encourage media service providers under their jurisdiction to ensure that their services are gradually made accessible to people with a visual or hearing disability” (Directive 2010/13/EU of the European Parliament and Council 2010, 15). In 2016 a proposal³ was presented to amend this Directive which did not directly address issues of accessibility but referred to the European Accessibility Act⁴ which has already passed the first steps in the European Parliament and establishes accessibility requirements for a wide range of products and services, including those of audiovisual communication. However, this proposal has been negotiated in recent years and, finally, in April 2018 the Council of the European Union and the European Parliament reached an agreement to definitively amend Directive 2010/13. This modification provides for new requirements for Member States to make their audiovisual content increasingly accessible to people with functional diversity. The latest action of the European Union regarding matters of disability took place in 2016, with the approval of Directive 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies.⁵ Meanwhile, both in Catalonia and in Spain as a whole, there is also legislation on media accessibility; in Spain, this can be seen in State Law 7/2010: General Order on Audiovisual Communication; and, in Catalonia, in Catalan Law 13/2014 on Accessibility, the introduction to which states:

“The importance of promoting accessibility as an instrument to enforce the principle of citizen equality was first translated in Catalonia in Decree 100/1984, of 10 April, regarding the suppression of architectural barriers. Seven years later, Parliament passed Law 20/1991, of 25 November, on the promotion of accessibility and the suppression of architectural barriers, and later the Government approved Decree 135/1995, of 24 March, by which the aforementioned Law was unfolded and the Accessibility Code was approved. These regulations laid the foundations for the suppression of architectural and communicational barriers and for the promotion of technical aids to improve the quality of life and autonomy for people with disabilities or reduced mobility. This regulation has brought about an important breakthrough for Catalonia, but, even after years of being in force, there are still people with physical, sensory, intellectual or mental disabilities, as well as the elderly or persons with other functional diversity who experience situations of unequal opportunities, discrimination, and difficulties with social participation and the exercise of their rights due to the existence of physical and/or communicational barriers holding them back”. (Catalan Law 13/2014, of 30 October on Accessibility 2014, 1)

This new legislative context has also been accompanied by a change of perspective as to what is meant by “disability” and “accessibility”. Toledo (2018, 1), taking inspiration from the definition provided by the United Nations (UN), argues that “accessibility consists of ensuring equal access to everyone and breaking down the barriers between people with disabilities and their goals, while also ensuring their civil, political, economic, social and cultural rights”. Toledo (2018) also notes that media accessibility is now finding refuge in the area of translation studies, and specifically in Audiovisual Translation, since both accessibility and translation share a common denominator: providing access to information and entertainment. Additionally, ‘sensory’ accessibility services could be interpreted as specific cases of intralingual, interlinguistic, and intersemiotic translation.

On the other hand, Greco (2016) argues that accessibility is not a human right by itself, but rather a tool and a prerequisite that allows the achievement of human rights. Furthermore, in 2017 the UN’s International Telecommunication Union (ITU) published a report on the access to telecommunications by people with disabilities, in which it was supported a transition from the medical model of disability –which only takes into account the physical problems of the individual and whose sole purpose is rehabilitation– to a more social model, which sees society as bearing sole responsibility for preventing people with functional diversity from being able to interact with their environment. In this regard, Li and Looms (2015, 268) state that the barriers to information which viewers may experience are due to the lack of appropriate accessibility technologies and services rather than to the disabilities they may possess. Therefore, this change of paradigm entails the empowerment of this group by providing them with tools and services to allow them to have equal access to audiovisual content. It is precisely in this context that this work has been prepared, presenting the main results of the project “*Sensory accessibility services in TV stations broadcasting in Catalan: current situation, needs, and proposals for the future*”, funded by the Catalan Audiovisual Council.⁶

The project sought to examine the situation of accessibility services offered by television stations that broadcast in Catalan from a representative sample that included stations of varying ownership, reach, and characteristics, in pursuit of the following objectives:

1. To analyse the type of available accessibility services (focusing on audio description, subtitling for the deaf and hard of hearing, and sign language), including both live or linear broadcasts as well as the à la carte service;
2. To analyse web accessibility;
3. To analyse the degree of accessibility and accessibility services of the applications.
4. To evaluate the volume of services offered and their level of legal compliance.

The achievement of these objectives has allowed us to gain an overview of the current situation and to be able to identify future work objectives to increase accessibility services, both in terms of quantity and quality, in order to ensure universal access to television stations broadcasting in Catalan.

2. Methodology

The study, which is of a descriptive nature, opted for a qualitative approach. It was decided that the study would include *betevé*, Radiotelevisión Española, and *Televisió de Catalunya* (TV3, *Esport3*, *Super3/33*, and *3/24*) as the public broadcasters and *Televisió de Girona*, *8tv*, and *El Punt Avui TV* as the private ones. Though not belonging to the Autonomous Community of Catalonia, *IB3 Televisió* (from the Balearic Islands) and *À Punt Media* (from Valencia) were also included because they broadcast in Catalan as well. However, in the end *À Punt Media* had to be discarded because it was found that the broadcasts had not begun and, furthermore, we were unable to collect information about their accessibility policies. Thus, the final sample included a total of seven television stations, both public and private and at the state, regional, or local levels, which provided the desired level of representativeness.⁷

This study is based on two main sources of information. On the one hand, we used laws, reports, websites, applications, and content of online television stations. And on the other, data and information provided to us by those responsible for the accessibility of the television stations included in the sample. Below we shall explain in greater detail the methodology used and the different steps that were followed to collect and analyse the data.

In order to evaluate the web accessibility of the television stations, we analysed each of their websites. First, we searched for information about accessibility and accessible content by reviewing one by one the various items we deemed essential. We then analysed all the television stations in the sample with the help of *Achecker*⁸ and *TAW*,⁹ two specialized tools that automatically evaluate the different aspects of web accessibility for which they have been designed. These tools were not applied with the intention of commenting on all the problems individually, since some aspects are very technical and must be resolved by professional web developers, but rather to obtain an overview of the situation.

We also studied the degree of accessibility of applications for mobile devices and tablets of all the television stations that had them. Since in this case there are no international standards or automated tools that can be used, we produced a list of criteria that we systematically reviewed with a sample that included eight channels corresponding to five stations with 20 different programs and 57 broadcasts in total.

Regarding accessibility services through the *à la carte* service, our analysis was also carried out from a sample of programs and broadcasts viewed by computer and/or through mobile

applications. In total, there were eight channels corresponding to seven stations, 62 different programs and 170 'chapters' or broadcasts in total.

The evaluation of linear television accessibility services consisted of the viewing and analysis of a sample including 8 channels corresponding to 5 stations with 18 different programs and a total of 70 broadcasts viewed. In the case of television stations in the sample which we already knew did not offer any accessibility service, no programs were selected.

It is important to mention that a visually impaired researcher, acting as a super-user, helped us to carry out part of the analysis of each of the websites, as well as of the applications for mobile devices and tablets. In this way, we were able to complete the analysis with a subjective assessment based on the experience of a user with a functional diversity who is accustomed to interacting with this type of environment with a screen reader, and more specifically with *VoiceOver*.

Quantification of the accessible content was made possible thanks to the data provided to us by the persons in charge of accessibility from each television station. Once the information was obtained, it was compared with the applicable law in each case (state or regional).

Finally, in order to conduct the interviews, the people from each television station responsible for accessibility were contacted. As noted by *Fàbregues et al.* (2016), researchers who opt for a more qualitative methodology tend to be inclined towards the use of interviews in order to better understand the object of study from the perspective of the interviewed person. The interview was considered a key research tool for several reasons: firstly, to contrast and add to the information obtained by other channels; secondly, to resolve doubts arising from the first observations and preliminary analysis of the available data; thirdly, to gain an understanding of their experience in the field of accessibility, which included the difficulties they had to face, the feedback obtained so far from viewers, how they are organized, and their future plans, among other things; and, finally, to offer them the opportunity to explain themselves, since it was anticipated that the results would highlight all of the work that was lacking with regard to accessible services. Some of these arguments coincide with those presented by *Fàbregues et al.* (2016), who consider interviews to be a good option when the intention is to triangulate the data or when the researcher deems that the participant should have more control over the "questioning", for example. For this reason, we prepared a semi-structured interview with a series of generic questions organized into thematic blocks, such as the organization of the accessibility department of the channel in question (if there is one), whether or not they offer accessibility services or website accessibility, etc., which was then adapted to the specific attributes of each case. The people who agreed to be interviewed in person or who responded to our questions by email were:

a. Rosa Vallverdú, Head of the Accessibility Department of TVC (01/02/2018).

- b. Jordi Colom, Technical and Innovation Director of betevé (01/02/2018).
- c. Àlex Martí, Director of TV de Girona (02/02/2018).
- d. Joan Carles Martorell, Director of IB3 (interview sent by email on 24/01/2018 and returned 04/02/2018 and 07/02/2018).
- e. Francisco Armero, Director of Broadcasting and Accessibility of TVE (sent by email on 10/02/2018 and returned on 19/02/2018).

In the case of 8tv and El Punt Avui TV, the people we contacted to discuss issues of accessibility felt that an interview was unnecessary since they did not offer accessibility services. Once transcribed, the interviews were used to more precisely present and contextualize the current situation while reproducing, among other things, the explanations given on why, in some cases, certain stations still do not offer accessible content or, in other cases, why the volumes thereof still fail to meet the legal minimum requirements.

This paper presents the results of the study in five sections. In the first section, the results of the web accessibility analysis are reviewed; in the second, the types and presence of content accessible via linear television stations are presented; in the third, accessibility services offered through their on demand services are analysed; in the fourth, we review the degree of accessibility of applications for mobile devices and tablets; and lastly, in the fifth section, we evaluate the volume of accessible content from each television station in the sample in accordance with the established legal minimums. Finally, we summarize the main conclusions of the study and offer a few proposals to improve the current situation.

3. Web accessibility

With regard to web accessibility, the following is stipulated in the annex of the European Accessibility Act:

“In order to maximize their foreseeable use [of the products and services offered by media providers] by persons with functional limitations [...] shall be achieved by [...] making websites accessible in a consistent and adequate way for users’ perception, operation and understanding, including the adaptability of content presentation and interaction, when necessary providing an accessible electronic alternative [...]”. (Annex to the Proposal for a Directive of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States as regards the accessibility requirements for products and services 2017, 7)

Also note that Article 33 of Catalan Law 13/2014 of 30 October 2014 on accessibility states that “websites must at least comply with the determined level of accessibility and must contain information regarding said level and the date on which the last review of its accessibility conditions was made.”

Although Directive 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies exempts television stations from complying with said directive and the fact that Catalan law is not applicable to all the television stations in the sample, we still wanted to evaluate their level of accessibility to determine the current situation. As shown in Table 1, we have verified that in most cases the situation is far from being ideal in terms of accessibility.

According to our analysis, we have found that none of the websites analysed are totally accessible and that they all present some problems. In any case, Televisió de Catalunya is the broadcaster which best meets the desired standards, followed by betevé, 8tv, RTVE, and TV Girona. However, even Televisió de Catalunya, which ensures that it is designed to meet the AA level –which is the level used as a reference for the analysis¹⁰ presents problems according to the technical tools used for the automatic analysis, as shown in Table 2.

The websites of betevé and IB3 Televisió have the most known problems. It was also shown that in most cases the problems are

Table 1. Web accessibility of the television stations in the sample

	8tv	Betevé	El Punt Avui TV	IB3	RTVE	TVC	TV Girona
Claims to meet the AA level	x	✓	x	x	x	✓	x
Offers information about web accessibility and/or accessible content	x	x	x	x	x	✓	x
The structure of the website and the distribution of headers is suitable for screen readers	✓	✓	✓	x	✓	✓	✓
All images, links, and buttons are accessible or tagged with alternative text	✓	x	✓	x	✓	✓	✓
The screen and the video playback buttons are accessible	x	✓	x	✓	x	✓	x
Presents problems according to the specialized technical tools used	✓	✓	✓	✓	✓	✓	✓

Source: Authors.

Table 2. Amount and type of problems detected

Televisions	Achecker			TAW		
	Known errors	Probable errors	Potential errors	Issues	Warnings	Unverified issues
8tv	5	0	540	38 (25 P)	172	16
Betevé	277	0	1.286	236 (177 P)	2,164	14
El Punt Avui TV	48	0	340	4 (1 P)	1	18
IB3	250	18	1.149	194 (143 P)	1,156	14
RTVE	60	6	2.277	11 (7 P)	86	17
TVC	48	0	1.149	85 (65 P)	1,423	18
TV Girona	108	2	961	30 (22 P)	260	17

Source: Authors.

related to perceptibility (P), which entails that the information and interface components should be shown to users in a way they can understand. For example, to ensure accessibility it is necessary to include alternative text for all types of non-textual content (links, buttons, images, etc.), to provide synchronized alternative options for time-dependent synchronized multimedia content, and that the content can be presented in various ways without losing any information or content in any way. Therefore, it seems that this is one of the aspects in which the television stations should strive to improve the accessibility of their websites if they wish to ensure the right to information of all of its users, especially those with functional diversity.

4. Accessibility services for linear television

Once the analysis of all the programs and channels in the sample had been completed, it became clear that Televisió de Catalunya is the most complete broadcaster (as summarized in Table 3), since it incorporates the three accessibility services we evaluated. However, as we will see later, the volume of each service offered varies enormously.

Televisió de Catalunya, which subcontracts the preparation of all its accessible content, subtitles almost of all its programs apart from a few related to sports or music. Audio descriptions are provided in particular for fictional content, but not exclusively. However, this service is only available for Smart TVs. The midday and evening newscasts on channel 3/24 are

provided in sign language each day. It is worth mentioning that Televisió de Catalunya is the only broadcaster that incorporates audio-subtitles –subtitles read by a voice in order to ensure that blind or visually impaired people also have access to this service– as part of the accessibility services it offers. It is also the only one to offer accessible content for younger audiences, which is a worrying fact that must be taken into account in order to evaluate the discriminatory treatment often faced by children with functional diversity. It should be noted that the program grid includes icons for subtitles but not for programs with audio-descriptions or sign language interpretation.

IB3 Televisió and betevé also offer accessible content, but they still have not taken into account the needs of the blind or visually impaired. In particular, IB3 Televisió subtitles all the news (midday, evening, weekends, and its rebroadcast programs), 80% of films –which it obtains from Televisió de Catalunya through the Federation of Autonomous Radio and Television Organizations (FORTA)– and a few previously recorded programs. They also broadcast the Tuesday sessions of the Parliament of the Balearic Islands with sign language interpretation, as well as the Ramon Llull Awards once a year.¹¹

Betevé broadcasts the evening news edition of *Btv notícies* from Monday to Sunday at 8 p.m. with subtitles through teletext, a method which they are currently modernizing. In terms of fiction, the teletext subtitling service is offered for films which have been previously broadcast on TV3. Additionally, from Monday to Friday betevé broadcasts an informative bulletin at 8:55 a.m. through DTT in Catalan sign language which is

Table 3. Accessibility services offered for linear television

	8tv	Betevé	El Punt Avui TV	IB3	RTVE	TVC	TV Girona
Offers accessibility services	x	x	x	x	x	✓	x
Allows searches for accessible content	x	x	x	x	x	x	x
Grid with icons identifying accessible content	x	x	x	x	x	✓ x	x

Source: Authors.

then shared through its social networks. Each year, they also broadcast the *Pregó de la Mercè* with a Catalan sign language interpretation service through DTT and online. It is worth emphasizing that during the interview we were informed that they intend to launch an audio-description service for fictional products soon.

5. Degree of accessibility of applications for mobile devices and tablets

Of the seven broadcasters in the sample, only four have apps for smartphones and tablets, but Televisió de Catalunya is the only one to offer accessibility services. Even so, only those from IB3 Televisió and RTVE present a simple browsing design for screen readers and only Televisió de Catalunya has all the buttons and links labelled with alternative text to make them accessible. Therefore, it seems that with regard to applications the accessibility situation is even worse than in the case of websites (see Table 4). The reasons for this could be the fact the law doesn't explicitly state anything about this, nor are there any international standards in this regard.

6. Content accessible through the à la carte service

The only broadcaster that offers accessibility services for à la carte programming is Televisió de Catalunya, but at the moment this only includes subtitling for the deaf and hearing impaired as well as sign language (see Table 5). In the case of audio descriptions, the service is currently only available for Smart TVs.

7. Volume of accessible content and level of legal compliance

Beyond the qualitative aspects linked to accessibility, we wanted to complete the analysis with a quantitative assessment of the current situation. The Spanish accessibility law approved in 2010 calls for a volume of broadcasting hours for different accessibility services depending on whether they were public or private stations until 2013. Additionally, the Plenary Session of the Audiovisual Council of Catalonia issued Agreement 19/2013, of 20 February, which approved the General Instruction of the Catalan Audiovisual Council on accessibility to broadcast audiovisual content. The objective of this document is to ensure accessibility to televised media by progressively incorporating subtitling services, Catalan sign language interpretation, and audio-description, which affects all broadcasters of the Generalitat as well as local entities in Catalonia. It has been established that this agreement is based on the General Law of Audiovisual Communication, since the obligations to be met by providers of audiovisual communication services with regard to the volume of accessible content are the same. Table 6 shows the percentage and number of hours of accessibility services offered by type in 2017, based on the data provided by the interviewed people responsible for such matters at each station. Although current legislation does not mention it, we also included audio-subtitling since TVC has offered this since late 2008 when foreign languages are spoken and subtitled.

The figures show that there is a clear lack of compliance with current legislation. Only in the case of Televisió de Catalunya, despite an unequal distribution between channels, did the subtitling percentage approach or even exceed the threshold indicated by law. In the case of sign language interpretation

Table 4. Accessibility of applications for mobile devices and tablets

	8tv	Betevé	El Punt Avui TV	IB3	RTVE	TVC	TV Girona
Has an app	x	✓	x	✓	✓	✓	x
Has accessibility services	-	x	-	x	x	✓	-
Has a section dedicated to accessibility	-	x	-	x	x	x	-
Simple navigation design for screen readers	-	x	-	✓	✓	x	-
All buttons and links are tagged with alternative text	-	x	-	x	x	✓	-
Accessible playback screen	-	x	-	x	x	x	-

Source: Authors.

Table 5. Accessibility services for à la carte programming

	8tv	Betevé	El Punt Avui TV	IB3	RTVE	TVC	TV Girona
Offers accessibility services	x	x	x	x	x	✓	x
Allows searches for accessible content	x	x	x	x	x	x	x

Source: Authors.

Table 6. Volume of accessible content (2017)¹²

Accessibility service	Private television stations				Public television stations				
	Llei	8tv	El Punt Avui TV	TV Girona	Llei	Betevé	IB3	RTVE	TVC
Subtitling percentage	75%	0%	0%	0%	90%	1.2% ¹³	24.3%	0%	Esport3: 30.7% 3/24: 70.75% TV3: 85.76% Super3/33: 96.6%
Weekly number of hours with audio-description	2 h	0	0	0	10 h	0	0	0	Super3/33: 8.3 h TV3: 8.9 h
Weekly number of hours with Catalan sign language interpreting	2 h	0	0	0	10 h	0.4 h ¹⁴	2 h	0	3/24: 9 h
Yearly number of hours with audio-subtitling	-	0	0	0	-	0	0	0	477 h

Source: Authors.

and audio-description, it fails to reach the stipulated number of hours but it far exceeds that of the other broadcasters. It should also be noted that the sign language interpretation service is limited almost exclusively to the news.

8. Conclusions and proposals for improvement

The main conclusion of this study is that despite the shortcomings detected, the situation has improved significantly taking into account that the publication of the law coincided with the beginning of the economic crisis and that the managers of the television stations in question mostly attribute the lack of more accessibility services to issues of budgetary availability. This improvement was already noted at the state level by Díaz-Cintas (2010), but in the specific case of Catalan the improvement can also be seen by taking into account, for example, that betevé did not offer any accessible content prior to 2007 and now it is conducting tests to incorporate a third accessibility service: audio-description. The increase in the volume of accessible content published in the annual report of the Catalan Audiovisual Media Corporation, as well as the progressive incorporation of new services by Televisió de Catalunya, also show that the issue of accessibility is starting to have a palpable weight in the public agenda. Now, whether for economic reasons or for internal organization, the only broadcaster from the sample which currently has a specific department and staff responsible for accessibility is Televisió de Catalunya. It is also worth noting that this broadcaster, together with the Autonomous University of Barcelona, has been participating for years in various European projects for technological innovation with the objective of improving its accessibility services. Therefore, besides the budgetary issue there is also an important factor involving the internal policies of each chain and of the concept of accessibility not only as a fundamental right but also as a

service that benefits society as a whole. Apart from deaf or congenitally blind people, there are also those who lose their vision or hearing with age, foreigners who want to learn Catalan and use subtitles for support, or citizens who want to learn foreign languages and listen to programs in their original version with the help of subtitles in Catalan, as well as other cases.

In summary, Table 7 offers an overview of the accessibility situation of television stations that broadcast in Catalan based on the sample studied. It is thus worth considering if the low volume of accessible content is simply due to an economic issue or if there is also an important component of a lack of social awareness. Additionally, it would be interesting to propose a new line of research to compare the case of Catalonia with other European countries in order to see where we are in relation to other places with a similar socio-economic situation. Studies such as Toledo's (2018), which compares accessibility legislation and the preparation of subtitles for Brazilians who are deaf or hearing impaired with the situation in the United States, Canada, and the United Kingdom could serve as a good starting point or reference of interest.

The results indicate that it would be necessary to implement various measures in order to ensure compliance with the law, not only in terms of legal considerations but also ethics and respect for the rights of people with functional diversity. In this sense, it is important for there to be channels of communication between users and television stations in order to understand their needs and degree of satisfaction. It would also be advisable to establish working groups with the demographics involved in order to monitor the improvements to be introduced. For example, with regard to the television stations it was detected that sometimes there are complaints due to technical problems with the user's television set rather than causes attributable to the broadcaster.

Throughout this study we detected various elements concerning accessibility to television stations that broadcast in

Table 7. Overall situation of the television stations in the sample

	8tv	Betevé	El Punt Avui TV	IB3	RTVE	TVC	TV Girona
Complies with applicable laws	x	x	x	x	x	x	x
Has accessibility services for linear TV	x	✓	x	✓	x	✓	x
Has accessibility services for TV on demand	x	x	x	x	x	✓	x
Level AA web accessibility	x	x	x	x	x	x	x
Accessible apps	x	x	x	x	x	x	x

Source: Authors.

Catalan which could be improved with little or no economic effort. First: there are a number of technical aspects which could be addressed with relative ease. It would also be advisable to incorporate icons for all accessibility services pertaining to à la carte television. However, it should be emphasized that it would be advisable to opt for icons that do not include letters – such as, for example, those suggested by the Danish Television Corporation–,15 which is an indispensable requirement for any pictogram intended to be universal since there are many writing systems and it is thus necessary to find an alternative that everyone can understand. The content can also be grouped by type of accessibility service in order to conduct searches according to this criterion. Another aspect that could be taken into account is the recommendation of Orero *et al.* (2007) to be mindful of the implementation of certain programs because it would not be necessary to add audio-description to all programming if this service is provided. Finally, it is necessary to review the formal subtitling parameters such as position or colour, since we have observed that subtitles are often poorly segmented or overlap with other types of text on the screen, such as in the case of the news, which can make reading difficult.

Second: given that most broadcasters are interested in increasing the amount of accessible content, new approaches should be explored in this regard. This could be done in a variety of ways. On the one hand, it would be appropriate to examine automatic solutions, which is an option to which certain groups have shown to be receptive since this could reduce costs and facilitate an increase in supply. On the other hand, greater collaboration could be promoted among broadcasters, between broadcasters and associations of people with functional diversity, or perhaps even between broadcasters and the university, which is training professionals with these professional profiles. Finally, the possibility of offering official aid to promote the implementation or maintenance of these services could also be assessed.

Third: except for Televisió de Catalunya and probably RTVE for its experience in Spanish, broadcasters would need to receive more information and training on issues of accessibility since the general impression we got from the interviews is that these areas are most often lacking. Although the services are

subcontracted, the contracting party must establish the quality threshold it wishes to set. In collaboration with the Catalan Audiovisual Council, a conference could be organized at the university regarding television accessibility in order to promote positive synergies between the various broadcasters, to bring together practices that work to the benefit of all the rest, and to facilitate dialogue between the television stations and users in order to establish regular channels of communication.

Fourth: Televisió de Catalunya has a supplementary information service that which consists of the weekly issuance of an email message through a distribution list that provides information about all the programming that week with audio-descriptions directly to the subscribed persons or entities.16 We feel that this is a very good practice that could be extended to the other television stations with accessibility services.

Fifth: although Directive 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies excludes broadcasting service providers from compliance therewith – the final processing of which is still a pending matter for the European Parliament – it *does* require them to make their websites accessible. Therefore, given that the final approval of this law is planned for the year 2018, we feel it quite advisable for television stations to take into account the problems detected on their websites and to take steps to resolve them.

Sixth: we propose the establishment of a protocol to gather and use the Catalan sign language interpretation offered at public events with the aim that all television stations will be able to benefit from it and re-broadcast it as well.

Seventh: collecting some of the proposals of Orero *et al.* (2007), it would be good to resume the idea of a reasonable timetable set by law which establishes the times and volumes of accessible content. The case of Brazil may prove to be especially illustrative because the official calendar decided in 2006 has been extended by 11 years which has allowed for a more progressive transition towards media accessibility (Toledo 2018). It would also be prudent to devise policies to encourage audiovisual accessibility, such as tax deductions for example.

Finally, television stations could consider incorporating workers with functional diversity who also know the field of audiovisual accessibility, since their experience would surely provide an

enriching contribution. This would contribute to greater internal awareness and would also help to increase the social visibility of these groups. At the very least, it would be good to have regular spaces for communication and exchange between those in charge of television stations and representatives of user associations in order for them to jointly evaluate the current situation of accessible broadcasts and to plan new avenues for action and future improvement.

It's worth noting that Orero *et al.* (2007, 41) had already stressed that "in order to promote the development of media accessibility, five key factors have been identified: regulation, communication, training, production and signalling". As far as we have been able to determine, these recommendations continue to be valid and are still very necessary more than ten years later. We therefore hope that this new reminder will bring about important changes and will serve as a starting point to qualitatively and quantitatively improve the accessibility services of television stations broadcasting in Catalan.

Notes

1. See <<http://www.un.org/en/events/disabilitiesday/background.shtml>> [Accessed: 29/04/2018]
2. The excerpt below, as well as the other quotations originally in English, have been translated by the authors of this article.
3. See <<https://ec.europa.eu/digital-single-market/en/revision-audiovisual-media-services-directive-avmsd>> [Accessed: 29/04/2018]
4. See <http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/583859/EPRS_BRI%282016%29583859_EN.pdf> [Accessed: 29/04/2018].
5. See <<https://ec.europa.eu/digital-single-market/en/web-accessibility>> [Accessed: 29/04/2018].
6. You may access the full report at <http://ddd.uab.cat/record/189381>.
7. It should be noted that TVC, specifically TV3, has a significant audience in Catalonia during 2018, and thus the inclusion of more local broadcasters with a very limited viewership would not have produced a greater degree of representativeness of the results.
8. See <<https://achecker.ca/checker/index.php>>
9. See <<http://www.tawdis.net/index.html?lang=es>>
10. Levels A, AA, and AAA of web accessibility are achieved by complying with the Web Content Accessibility Guidelines (WCAG) developed by an initiative of the World Wide Web Consortium. Level AA, which is the benchmark in this study, has the requirements of offering live subtitles, audio description, and changes in text size, among other things.
11. It should be noted that it was impossible for us to view the subtitles from Catalonia because the option to transmit the subtitles outside of the islands was deactivated. As a result of our consultation, they are currently working on being able to offer the content with the corresponding

accessibility services outside of the Islands.

12. The data is presented in percentages or hours depending on how the volumes of accessible content required by current legislation and in the aforementioned Agreement are expressed.
13. See <http://pagines.uab.cat/umag/sites/pagines.uab.cat/umag/files/UMAG_files/conference/presentations/final_umag_presentation_marie_junge_ernst_dr_290518.pdf> [Accessed: 09/07/2018]
14. This is not done with subtitling and Catalan sign language interpretation because, in the first case, almost everything is subtitled, and, in the second, this service is provided mostly only for the news.
15. This data is approximate, since it was not possible to take into account subtitling hours from movies given the variable nature of such information. In any case, although the percentage may be a bit higher than what is shown here, it is clear that it remains far from what has been established by law.
16. This data is approximate, since it does not include the Pregó de la Mercè which is also issued in Catalan sign language.

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