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Static Versus Dynamic Accessibility. Accessibility Management as a Tool to Enable Its Permanence over Time

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Abstract.
An accessibility monitoring or audit of an environment provides information at a given point in time (static view of accessibility). But accessibility, to be really effective, must be maintained over time. Therefore, it must be considered throughout all phases of the design process (different phases of the project) and construction (different phases of the work). But it is also essential that, once built, it is possible to maintain or even increase the level of accessibility initially achieved.
There are many cases in which, despite a good accessible project, during the life of the building the accessibility conditions worsen substantially because the need for a system that guarantees the permanence of accessibility over time is not contemplated.
This requires the adoption of a Universal Accessibility Management System (UAMS) which, as is done with other disciplines such as Quality or Sustainability, allows those responsible for the management of this environment to implement, prevent or correct the accessibility actions that correspond in each case.
For the development of a UAMS, the first thing to be defined is the scope to be considered and the scope. Furthermore, from the point of view of use, accessibility can be considered from the visitor's point of view (customer service; customer's perspective) or from the worker's point of view (workstation; employee's perspective).
In this article we will take as a reference two methodologies that have been widely used on numerous occasions, to analyse the strengths and weaknesses of each of them and their parts from a deep theoretical (processes and indicators) and practical (disruptors) knowledge.
The ultimate aim of this work is to identify the aspects to be considered in the definition of a UAMS, in order to be able to define and specify the keys to approach an accessibility audit from a dynamic perspective, that is to say. one that really guarantees the sustainability of the accessibility of that place over time.

Keywords.
Accessibility management. Dynamic accessibility. Built environment

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1. Introduction

Unfortunately, in many environments it is relatively common to find an accessibility situation that is not adequate, even though it was originally conceived correctly. This situation has often been motivated by a lack of maintenance, or a modification of use and where there has been no connection between the original accessibility and the one that exists today.

The consequence in all cases is the ineffectiveness of accessibility. This conception corresponds to a static vision of accessibility, a "still photo" coinciding only with accessibility at a given moment [1]

On the other hand, there is a concern, unfortunately still a minority, to try to guarantee accessibility over time (dynamic accessibility) for which a Universal Accessibility Management System (UAMS) is required. The structure and contents of this UAMS is what this study focuses on.

2. Approach / Method

The numerous complaints about the lack of accessibility in spaces where it previously existed, as well as the systematic evidence of audits carried out in different projects, show a reality in which a punctual consideration of accessibility in environments is not enough. An accessible toilet converted into a storeroom, a lowered counter used as a storage shelf, a TWSI (Tactile Walking Surface Indicators) strip blocked by furniture, or a grab bar in a toilet that no longer works properly, are just some of the common examples that can be found. Therefore, a rethinking is needed to consider the accessibility as a dynamic reality that requires a Universal Accessibility Management Plan (UAMP) to guarantee accessibility over time.

For this study, an analysis of two Universal Accessibility Management Systems (UAMS) is carried out. This documentary analysis is complemented with the direct experience of practical evaluation that the authors of this study have, in order to be able to assess their effectiveness from a more global and efficient perspective.

2.1. Accessibility Management in Smart Tourism Destinations (STD)

First of all, we will analyse the UAMS for Smart Tourism Destinations (STD) which Seggitur (an entity of the Secretariat of State of the Ministry of Tourism of the Government of Spain) has been developing for several years with studies carried out in more than 400 tourist destinations.

It is an accessibility evaluation system that forms one of the five axes that make up the destination evaluation method of this entity: Governance, Technology, Innovation, Sustainability and Accessibility [2].

This system takes UNE 178501 [3] and UNE 178502 [4] standards as a reference and bases this system on the following principles (aimed at a public management body that administers the tourist destination):

- Leadership: with a commitment from top management, defining an accessibility policy and objectives, providing the necessary means and resources, with participative, transversal and transparent management.

- Planning: with internal and external analysis in order to have an updated diagnosis of the current reality, actions to address risks and opportunities, mapping of threats, definition of actions to achieve objectives, etc.
- Support: through the provision of resources for the establishment, implementation, maintenance and improvement of the system. Including staffing, training, infrastructure and economic resources. Defining competences, raising awareness and communication as well as documenting all information.
- Operation: Continuous control of the different processes. Determine requirements and their services. Reviewing changes, determining the requirements to be considered and implementation of the Operational.
- Evaluation: monitoring through the established measurement criteria, having information on the point of view and opinions of tourists and citizens on the ITD, carrying out an evaluation with all the data and measurements obtained. In addition, an internal audit and management review should be considered to complete the performance evaluation.
- Improvement: Determine and select opportunities for improvement and implement the necessary actions to improve processes, products and services within the scope of UAMS.

Among the indicators that are established, the following stand out:

1. Commitment to accessibility: document stating the commitment to the continuous improvement of universal accessibility in the ITD.
2. Human and financial resources: quantification of the human and financial resources for the management of universal accessibility in the ITD.
3. Accessibility diagnosis: existence of a documented diagnosis of the ITD's universal accessibility, the scope of which covers the elements of the entire accessibility value chain.
4. Action Plan: document that includes the Universal accessibility improvement actions to be carried out in the ITD.
5. Training actions: number of training actions given and promoted by and in the ITD on Universal Accessibility and Design for All. In addition to the number of students trained.
6. Information on the accessibility of the destination: information publicly available on official destination websites.
7. Accessible information: existence of accessible information on the ITD in different media (physical and digital) and formats (visual, auditory and/or tactile).
8. Promotion of accessibility: percentage of the budget dedicated to initiatives to promote the accessible offer of the ITD.
9. Commitment to continuous improvement: Public document of commitment to the continuous improvement of universal accessibility in the ITD.
10. Degree of compliance with accessibility: percentage of universal accessibility measures of the ITD's Action Plan that have been complied with.
11. Accessibility in wayfinding: existence of accessible guidance, signposting and orientation systems in the ITD.
12. Accessible transport: accessible public transport vehicles (% taxis and buses) as well as accessible routes and itineraries (stops and vehicles).

2.2. Accessibility Management from the DALCO criteria

This system is based on the UNE-170001:2007 Certification standard, the first part of which defines the basic functional accessibility criteria DALCO (in Spanish an acronym for Moving, Grasping, Location and Communication) and the second part establishes a Universal Accessibility Management System, UAMS.

This standard and the system defined here has served as the basis for the implementation of a dynamic approach to accessibility in numerous entities in Spain. The accessibility certification developed from this document has led both certifiers such as AENOR [5] and consultancy firms such as CEIS [6] or ILUNION [7] to rely on specialists in the field to audit or assist in the implementation of this system.

It has been applied mainly to built environments (although also to products and services) of different types: urban public spaces, existing buildings, new buildings or others. And of different uses: offices, shopping centres, shops, hotels, museums, etc.

This accessibility management system is based on the following four sections:

- Responsibilities: management commitment, system review. Universal Accessibility Policy.
- Resource Management: Human resources (provision, qualification, training), materials, infrastructures and technical aids. Documentation
- Planning: Accessibility chains, compliance with DALCO criteria.
- Monitoring, Measurement, Analysis and Improvement: Corrective and preventive actions, data analysis. Accessibility Improvement Plan.

It is remarkable its similarity with the quality management system, since it was conceived in its design as a particular case of quality management, according to the contents of ISO [8].

2.3. Other cases

There are different accessibility evaluation methods, many in the form of checklists that can allow some comparison. For example, the NDA's Access Handbook Template [9] or as an accessibility consultancy methodology [10]. Particularly noteworthy is the European Commission's Technical Report on Conformity Assessment of Accessibility and Usability in the Built Environment UNE-CEN/TR 17622 IN [11].

Although beyond the scope of this study, it is also noteworthy to keep in mind the existence of accessibility management systems beyond the built environment, such as ICT, training, and others. [12].

These systems, although with significant differences in content, also guarantee a dynamic vision of accessibility as opposed to a one-off resolution of a problem (traditional vision of accessibility). Moreover, they are also a tool, through continuous improvement, to go beyond standards, and not to be limited to mandatory regulations [13]. The Universal Accessibility management system and its possible associated certification is conceived in other cases as an added value for the organisation [14].

3. Results

These two accessibility management systems are based on public methodologies endorsed by a standardisation body.

The scope in both cases is within the field of the built environment, although the first is more specialised for Tourist Destinations (municipalities, cities or regions) of a larger scale and which includes many elements (streets, buildings, products and services). However, the second one, although initially flexible for any scale, in practice has been found to be more effective for the implementation in entities where the built environment of one or several buildings is combined with the associated accessibility products and services provided there. (such as, for example, customer service or emergency evacuation assistance).

Both methodologies base some of their indicators on compliance with mandatory accessibility regulations. These are complemented by other indicators from guides, manuals or the experience of the designers of these methodologies. In turn, some of the indicators need to be broken down into sub-indicators, resulting in a nested structure of requirements. It is important to highlight that the result is not based on an arithmetic sum of scores, as not all the requirements have the same relevance and need to be weighted, as some of them are essential to complete the process.

The key aspects to be considered in a Universal Accessibility Management System (UAMS) are very similar in both cases, being the Involvement of all areas, Planning, resourcing, monitoring and continuous improvement, the key factors to be highlighted in common.

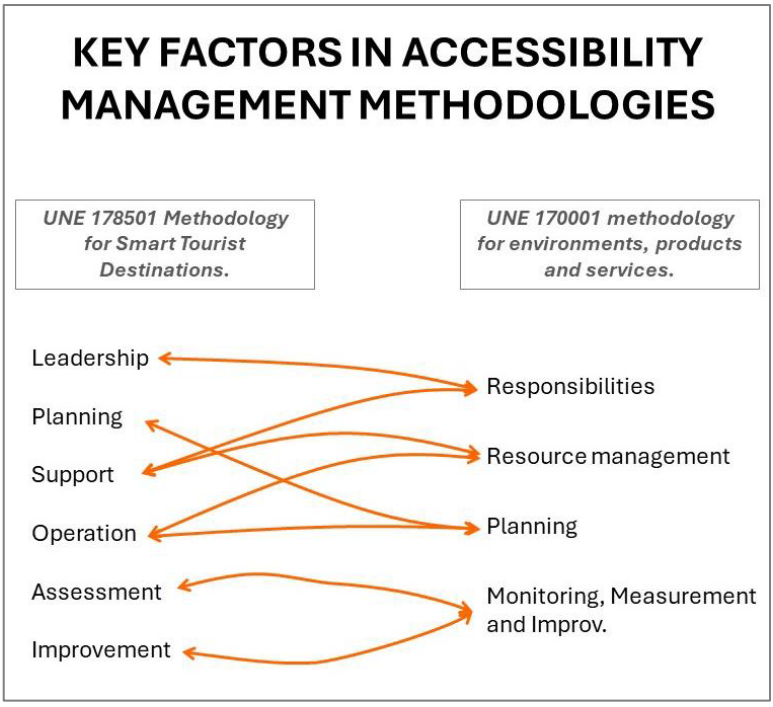

Figure 1. Comparative scheme that relates the key factors in the two accessibility management methodologies analyzed.

In both cases, the management system can be associated with a seal or certification that serves as a distinction for identification by the end user as an accessible environment. These distinctions are not of an indefinite nature but are limited in time, thus reinforcing the idea of the need to consider accessibility on an ongoing basis.

4. Conclusion

It is important to highlight the cross-cutting nature of this system, as it relocates accessibility not to a specific department (traditionally associated with Social Services or Works) but is now present in all areas of the entity: marketing, purchasing, product development, customer service, maintenance, etc. And involves the entire structure of the entity, from top management to the last technicians in each department. [15]

Some limitations are also evident. In the case of the DTI methodology, as it is centred on a public management body, the entire tourism part of the destination that depends on private management (and there is a lot of it) is relegated to the background, so that accessibility management is limited in scope. For example, the accessibility of privately managed accommodation, restaurants or even tourist attractions. This methodology, although it would require more effort, could be implemented perfectly well by including also privately managed settings and services.

In the DALCO methodology, some considerations are insufficiently developed, leaving them rather ambiguous and at the discretion of the assessing technician. Despite relying on the mandatory regulations, this is not a solution, as in most cases they are minimum requirements that fall far short of the excellence sought by a management system. The specification and development of many of the requirements that go beyond the minimum requirements established by legislation could be another aspect to be implemented in these methodologies.

In both cases, and as a final conclusion, it was found that the implementation of an accessibility management system has led to a reconsideration of accessibility, not as a one-off project to be carried out and that's all, but as a basic and permanent consideration to be kept in mind on an ongoing basis (Dynamic Accessibility).

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