Towards a more inclusive service development process for the wider population

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This paper presents a new service development process model for transport services for the inclusion of wheelchair users. In line with the principles of Universal Design, the new model aims to develop services for the widest possible range of users, including people using wheelchairs. The model is based on existing models, case studies in Brazil and Germany, and complemented with specific support material regarding wheelchair users, ultimately devised to guide the development of services that include such users. The paper illustrates a demonstration of the model in a real situation in Germany, with the development of a service for wheelchair users where early consideration of their needs results in clear benefits.

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There are more than one billion people worldwide experiencing some kind of disability (World Health Organization, 2011), of which around 10% are wheelchair users (Armstrong et al., 2008). Whilst mobility problems are not the only challenge wheelchair users face on a daily basis, such a large number of users makes the provision of public transportation services extremely important in our societies. Transportation has been a key service for the whole population, including people with disabilities, when it comes to facilitating their integration into the community.
(Cooper & Cooper, 2010). Such service has been essential in enabling access to employment, socialization, health services, and so forth (Van Roosmalen, Paquin, & Steinfeld, 2010). The relevance of the transport sector is amplified in urban contexts due to urbanization trends worldwide (Ferraz & Espinosa Torres, 2004).

In general, existing transport service options available to wheelchair users are either too specifically developed to meet their needs (and thus could often be stigmatizing), or do not consider such users in detail, nor other people experiencing disabilities. These extreme approaches reflect a type of service design that does not thoroughly promote inclusion. Examples of specific solutions for wheelchair users are: flexible transport services, special transport services, handicap transport and paratransit. These types of solutions, whose names are often used interchangeably, have been criticized for their relatively high cost of provision, lack of flexibility in route planning, and inability to manage high demand (Mulley & Nelson, 2009).

The buses in urban transit, a typical example of mainstream public transport services, illustrate the kind of service originally designed without considering the needs of wheelchair users. The first models were developed without any accessibility features/mechanisms for wheelchair users. This oversight has been rectified by many countries through the introduction of legislation, which requires public transport services to be made accessible for people with disabilities (Canadian Transportation Agency, 2000; Stahl, Brundell-Freij, & Brundell-Freij, 1995, pp. 23–34).

Traditional service development process models are not oriented to include people with disabilities and, therefore, do not contain specific characteristics of this diverse target group. Furthermore, existing generic models are very vague, presenting just some details, with definitions only at the phase level and, in some cases, at the activity level. Ultimately, these models lack specific tasks, guidelines, procedures and tools.

Our research aims to address the gap between the growing service sector market in the world economy, and the lack of adequate service design systems for people experiencing disabilities. More specifically, we propose a new service development process model for the inclusion of passengers with wheelchairs in the urban transport context.

The remainder of the paper is organized as follows. Section 1 provides an overview of the literature on service development process models, Assistive Technology and Universal Design. Section 2 introduces our research methodology approach. Section 3 presents the results from the analysis and Section 4 the
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