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# Accelerating learning and adaptation at organizational and societal scales: really adopting Design for All

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## Abstract

This reflective paper speculates on the problem of Design for All (also known as Universal Design) and its very low rate of uptake, in spite of widespread acknowledgement of its centrality and importance. The paper argues that framing the problem in a systemic perspective will help not only to understand some of the reasons for the low uptake, but also to make clearer how to increase uptake. This could then be a means to accelerate the learning and adaptation of the organizations that are tasked with adopting and implementing Design for All, as well as more global and proactive adoption by societal elements in general.

A number of policy documents, organizational mission statements and other such materials were analysed. The analysis found that Design for All, although included, does not form an integral part of these organizations' strategies. Rather it is an "add-on" layer. Further, this reflects not just a problem in organizations, but also points up that there is not a real commitment by society. The paper then frames arguments within a systems oriented perspective, and transfers this to the information design of major policy documents. By doing this, it is possible to expose some of the reasons that Design for All is treated as of lower priority or even irrelevant to a particular organization, as described by (Frاندzen 2012). More positively, it could also give impetus to the argument that Design for All should be included from the outset in all design endeavors, not by conventional argumentation, but by reason of its implicit entanglement in organizations and in the fabric of society.

## Introduction

Generally speaking, systemic approaches have not been used, to our knowledge, to address the issues of low take-up in organizations, including governmental organizations that make and issue policy, but do not themselves practice Design for All in any consistent way. To better understand what is meant by Design for All, the next paragraphs briefly introduce the term and its meaning.

'Design for All'<sup>1</sup> is the term adopted by the European Union (EU) for a policy of not "designing out" vulnerable populations. Following on from the Universal Design<sup>2</sup> movement that began in the 1970s

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<sup>1</sup> ""Design for All (DfA) is design for human diversity, social inclusion and equality".

<http://www.cencenelec.eu/standards/Sectors/Accessibility/DesignForAll/Pages/default.aspx>

in the United States, the EU placed emphasis on the removal of barriers of access to products and services for persons with disabilities and older people. Furthermore, the ageing of the population has put these issues high on the political agenda. All this places a clear direction on the social aspect of design, and in turn of design's impact on society. It is noteworthy that in both terms Universal Design and Design for All, the actionable word is 'Design'

The Design for All perspective has gradually been acknowledged and included in policies and strategies of many governments around the world, including countries of the European Union, the United States and Canada, Australia, India, Brazil and countries of the Gulf Coalition (such as Saudi Arabia, the United Arab Emirates and Qatar). A major step forward in 2006 was the recognition of the rights of disabled people by the United Nations<sup>3</sup>. This is a landmark in setting out the rights of people with disabilities according to the social model of disability, rather than the medical model. The former views people as disabled by societal attitudes and lack of provisions for helping disabled people have equal opportunities, whereas the later sees views people with problems as individuals who need to be 'fixed' or normalized as much as possible, or if not, institutionalized for 'special treatment'.

Throughout the decades since the 1970s, making people aware of the problems faced by people with disabilities and older people, has been very high on the agenda of those working in Design for All. Awareness has been greatly aided by the communities and organizations that represent disabled and elderly users, who have made visible both the problems and the needs of these populations. In addition, there has been the widespread dissemination of the message that some form of temporary disability is likely to affect all of us at some time in our lives, and, as we all hope to live long lives, we should also design for our 'future selves'.

Finally, a further type of outreach is education. Design for All is on the curriculum of departments of architectures, design and computer science and HCI in Universities in the EU, and seeks to influence and engage younger generations of designers in their formative years. As well, in recent year, efforts of European Standards Organisations<sup>4</sup> have also been concentrated on making use of this avenue to ensure Design for All principles and approaches are followed.

Those advocating for Design for All usually marshal at least five reasons for designers and/or their clients to adopt Design for All: these are related to demographic, legislative, economic and social/ethical reasons not to mention the inspiration that comes from looking for solutions to problems faced by those who are older and/or have physical, sensory or cognitive impairments (Darzentas & Miesenberger, 2005). Viewing the world from the perspective of these people, designers have repeatedly found solutions that are useful to the population at large, in effect, 'for All'. This last argument is what Hassel terms 'Reverse Inclusion' and claims that "fully engaging with the needs of disabled and elderly people can turbo-charge innovation and profitability" (2011).

However, despite wider awareness; the cogency of this reasoning; the publicizing of good practice, and efforts in education, much Design for All work is relegated to specialists in this type of design,

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<sup>2</sup> "Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" Mace  
[http://www.ncsu.edu/ncsu/design/cud/about\\_ud/about\\_ud.htm](http://www.ncsu.edu/ncsu/design/cud/about_ud/about_ud.htm)

<sup>4</sup> Cen/Cenelec ETSI <http://www.cenelec.eu/standards/Sectors/Accessibility/Pages/default.aspx>

undertaken by experts in accessibility. Many times, particularly in terms of web accessibility, but also in other areas, real world solutions comply with accessibility legislation at the lowest possible level of compliance. This means that although there is provision for people's needs, there has been no thought to the quality of the experience. Indicative of this situation is the story narrated by a wheelchair user, who wanted to work during an intercity train journey with his colleagues, and tried to book a first class compartment with wheelchair accessibility. He was told that there was only one space that was set aside for wheelchairs:

I had used that place many times before and knew exactly where it was and what it entailed [...] it is located in the family car. The seat is right next to the lavatory and quite close to the exit. This is also the place for larger luggage. This means that you are seated where people are coming and going all the time on their way in or out of the toilet. Quite often there is a lot of luggage as well. Together, this makes for a noisy environment with frequent disturbances that make it impossible to work. (Hedvall, 2013)

Many networks and groups of researchers working in this area come up against the same reactions over and over, with little variation. The overriding response, - after an initial consensus that Design for All is worthy goal, and that every organization should adopt and promote it-, is that designers; the clients they work for; and society at large, really consider the problem of accessibility as something of a luxury. The thinking seems to be that, indeed, something should be done for the minority of people who are served by implementing accessibility, but the majority who are without special needs should be the first priority. This puts Design for All, and all the work around it into the "add-on" category. It may be part of every organization and every designer's work ethic, but in practice, it is actually low on the list of things to be done.

In this paper, we try to show that were this attitude framed in systems terms, it would help make clear that Design for All should not be understood as being a discrete component in the arsenal of design approaches and practice. Rather it could be shown just how interrelated it is to every type of design activity, be that for a product, a system or a service. In this way, Design for All would have a better chance of being incorporated into every project from the outset, as it would have relevance to each subsystem in the system.

The paper analyses some preliminary evidence, in the form of policy documents, organizational mission statements and other such materials to demonstrate how Design for All although included, does not form an integral part of these organizations' strategies, nor in consequence, does it reflect a real commitment by our societies. It will frame arguments within a systems oriented perspective, and transfer this to the information design of the documents. The hope is that not only will this expose some of the thinking that considers Design for All as low priority or irrelevant to a particular organization, as described by (Frandsen, 2012). Rather, it could also give impetus to the argument that Design for All should be included from the outset in all design endeavors, not by conventional argumentation, but by reason of its implicit entanglement in organizations and in the fabric of society.

## Background

Systemic approaches are not unknown in work related to Design for All. They have been used by experts in the area to try to convey some of the complexity around the situation, and especially the need to look at the 'big picture' and overcome thinking in 'silos' which result in isolated and ultimately piecemeal solutions. For example:

- systemic approaches were used by researchers in Design for All and Assistive Technology to build a roadmap document for research in accessible and assistive technologies (Roe et al., 2011), where they were instrumental in mapping out both current and future concerns in the research directions. This was done using the method of Structured Dialogic Design (Laouris et al., 2011).
- the value of the 'whole systems approach' was illustrated with a report (DH Publications, 2006) showing the current situation of the state provision of wheelchairs, and explaining how this could be improved. Central to the treatment of the subject was focusing on the fact that a wheelchair was much more than a means to get from A to B, but instead it was a gateway to independence and to self-esteem for the mobility impaired individual. This meant that assessing whether an individual was eligible for a (motorized) wheelchair needed to take into consideration many more factors than the individual's physical condition. Using case studies, the authors were able to show how problems were created rather than solved by the use of silo approach. Wheelchair provision meant a reduction in dependence upon carers as well as on health and social services. In effect, it was helping turn a dependent consumer of expensive services into a productive independent member of society. By 'expensive' is meant not just economic cost, but also the cost in human resources. In one case study, the main carers of the mobility impaired person were his parents. As they were intensely involved in their son's care, one parent was never in a position to undertake employment, and the other parent, the sole breadwinner, suffered injury when pushing his son's manual wheelchair. Thus, as a result of his son being evaluated as not eligible for a motorized wheelchair, they lost the one family member in employment, as well as compromised his health, all of which created an even larger burden on social services and the health system.
- The same kind of holistic thinking is evident in communications regarding the care of frail older people (Cornwell, 2012). Again the report is compiled by stakeholders who are intimate with the problems caused by the 'silo approach' to care and provision of health services. As they explain, in the face of the increasingly large ageing population, many 'older old' people are in general good health, but are frail. Frailty is not a diagnosis, but is a useful term that describes the state of 'limited functional reserve' or 'failure to integrate responses in the face of stress,' as well as failure in 'functions such as staying upright, maintaining balance and walking [...] resulting in falls, immobility or delirium. A small insult can result in catastrophic loss of function' ((Rockwood and Hubbard 2004) quoted by Cornwell, 2012). In most countries, two systems are called in to help with the problems faced by frail older people: the health care system (hospitals and emergency services) and social care (providing home-based care or staffing care homes). The coordination between these two systems has been blamed for many people 'slipping between the cracks' and greater coordination has been seen as the remedy. However, Cornwell notes that the problems are more deeply rooted than this. She quotes a variety of problems such as lack of trained personnel; care for the elderly is both poorly paid and not considered as an attractive career choice: attitudes towards older people that are disrespectful and demeaning.

The documents referred to above represent attempts to reach solutions that are set within the domain of designing better services for people with disabilities: by providing the research on most needed areas; by employing a different set of criteria for wheelchair eligibility; and looking to the wider problem of frail older people and their needs, within society as a whole, rather than in terms of better coordination between two complementary governmental institutions. They do this by taking a systemic perspective on the situation of concern. This results in some clear recommendations that are rooted in stakeholder concerns and that are designed to affect all stakeholders for the better. For instance, in the case of frailty of older people, respect for all parties concerned, in the sense of effort made to preserve the self-esteem of older people as well as to develop a prestige for the profession of caring for older people.

By contrast, many documents setting out policy and strategy recommendations, although they may be strongly “evidence based”, the result of extensive fact finding surveys and data acquisition and rigorous interpretation, cannot arrive at such recommendations because the systemic approach is missing. In the next section, we present and analyse one such document.

## **The Communication on the European Disability Strategy 2010-2020**

A number of policy documents, reports and surveys are published every year that set out the provisions that governments make in the name of Design for All. Certain documents are key in setting the agenda for policies and legislation, for instance international agreements, such as the United Nations’ Convention on the Rights of People with Disabilities (UNCRPD, 2006). Of great importance for countries in the EU is the European Disability Strategy.

Since 2000, the EU sets out a Disability strategy, the current one being that covering 2010-2020. (European Union, 2010) The strategy is formed from taking account of different input. For instance, it looks upward to the UNCRPD, and tries to lay the groundwork so that the rights enshrined in the Convention can be practically implemented. It also uses public consultation from sources on the ground such people with disabilities and organisations that represent them.

The overall aim of the 2010-2020 strategy is to “to empower people with disabilities so that they can enjoy their rights and participate fully in society”.

More specifically, the strategy focuses on eliminating barriers across eight main areas: accessibility, participation, equality, employment, education and training, social protection, health, and ‘external action’. These areas were selected on the basis of the overall objectives of the EU Disability strategy, the United Nations Convention on the Rights of People with Disabilities (UNCRPD), the related policy documents from EU institutions and the Council of Europe, as well as the results of the EU Disability Action Plan 2003-2010, and a consultation of the Member States, stakeholders and the general public.

The Communication on the European Disability Strategy is a remarkable document is that it is wide-ranging and addresses all areas of life. It is a succinct 11 page document that sets out Objectives and Actions, Areas for Action; and Implementation of the Strategy. The Implementation section is a

reference to mechanisms or 'instruments' for the carrying out of the actions. These are: awareness-raising; funding; and research, (particularly, statistics and data collection).

In the 'Objectives and Actions' part, which is an introductory section, there is a call first to the EU's legal obligation, as signatories to the UNCRPD, to enforce the rights of people with disabilities, but there is also specific mention not just of the large numbers affected, but also of what is known as the business case for Design for All. This holds that designing accessible products and services will increase market share, due to the large numbers of people that want these products/services; that it also helps to foster innovation, etc. There is also an enticing note that the assistive technology market has an estimated annual value of over € 30 billion.

The 'Areas for Action' section forms the main body of the Communication. The eight areas for action are laid out in the form of a rationale for each area; suggested actions by the EU, many of which need to be carried out by member states, rather than by the EU directly; and the expected outcome of the action.

Under 'Areas for Action', (that are copied verbatim and numbered below 1-8) we present bulleted information -verbatim text drawn from the Communication- which explains the barriers that disabled people face and the need for the Action Area.

From this layout, it is possible to understand that the actions (which derive from the 50 points of the UNCRPD) and which have a legal import (words such as 'accessibility', 'participation' and 'equality') cannot be easily described discretely in terms of barriers.

1. Accessibility: make goods and services accessible to people with disabilities and promote the market of assistive devices
2. Participation: ensure that people with disabilities enjoy all benefits of EU citizenship; remove barriers to equal participation in public life and leisure activities; promote the provision of quality community-based services
3. Equality: combat discrimination based on disability and promote equal opportunities
  - Goods, services and participation in political and leisure activities are not always accessible for people with disabilities on an equal basis with other individuals (*authors' underlining*). For example:
    - Premises open to the public – such as shops, restaurants, cinemas, post offices, schools and courts of law – are often inaccessible to people with disabilities;
    - Access to transport and mobility infrastructure is a problem for many disabled people, acting as a barrier to work and social activities;
    - Services such as insurance, rented accommodation and banking are less accessible because of different standards or even refusal to provide service;
    - Only 5% of public websites comply fully with web accessibility standards;
4. Employment: raise significantly the share of persons with disabilities working in the open labor market.
  - People with disabilities have an average employment rate of around 50%.
  - Employment rates for people with very severe and severe degrees of disability are 19.5% and 44.1%, respectively
  - Inclusion: People are more at risk of poverty and social exclusion if they have problems finding work. The poverty rate for people with disabilities is 70% higher than average.

5. Education and training: promote inclusive education and lifelong learning for students and pupils with disabilities.
  - People with disabilities have fewer opportunities to participate fully in education.
  - In the 16-19 age group, the rate of non-participation in education is 37% for considerably restricted people and 25% for those restricted to some extent, while for those not restricted it is 17%. This is a significant disadvantage for personal development, social integration and job opportunities.
6. Social protection: promote decent living conditions, combat poverty and social exclusion.
  - People are more at risk of poverty and social exclusion if they have problems finding work. The poverty rate for people with disabilities is 70% higher than average
7. Health: promote equal access to health services and related facilities.
8. External action: promote the rights of people with disabilities in the EU enlargement and international development programmes.

Laid out in this way, the appeal is to improve the lot of people with disabilities, because of moral and ethical reasons, represented by the numbers of people involved and the evident discrimination. This is very powerful rhetoric, but is it effective?

## Contribution of Systems Thinking and of Design

A policy document represents the result of constraints and consultations. It is expected to provide concrete ways forward, in terms of recommendations. In the case of a Disability Strategy it must match the aspirations that the people with disabilities it is aimed to help, as well as those who have to follow and implement it. The first group must recognize that their needs and wishes have been taken into account, the second that they agree and see the merit in carrying out the strategy.

However, particularly with policies to increase the uptake of Design for All, the same pattern has been repeating itself for over a decade. While different public authorities may in principle agree with the disability strategy, it is a different dimension of effort needed to employ a person with intellectual disabilities, or to make web based and paper based information about government benefits accessible to citizens with sensory disabilities such as vision impairment. It requires something beyond superficial or passive awareness, and even beyond knowledge and training, although these are very important. It requires a change in culture and attitudes. In support of this point, a recent survey carried out in the UK (Aiden & McCarthy, 2014) showed that:

- nearly half (43%) of the British public say they do not know anyone who is disabled
- 67% of the British public feel uncomfortable talking to disabled people, with (21%) of 18- 34 year olds admitting that they have actually avoided talking to a disabled
- 36% of people tend to think of disabled people as not as productive as everyone else, and 24% of disabled people have experienced attitudes or behaviours where other people expected less of them because of their disability

These results are even more startling coming from a country where the Paralympics were held in 2012 and in the efforts to make the city accessible to disabled people, the games were widely hailed as changing peoples' attitudes (Holt, 2013).

This evidence of attitudes toward disabled people also entails a corollary that it requires effort on the part of the disabled person to overcome barriers that are not environmental, like steps into a



building, but are attitudinal and the result of prejudice. The resulting low self-esteem and confidence noted among people with disabilities can be very detrimental in erecting further barriers that prevent people from participating in society.

However, results from Eurobarometer surveys (Eurobarometer, 2012) on discrimination where people acknowledge that is discrimination against the disabled or against older people, showing that people may not engage with people who are disabled, but they have good levels of awareness of discrimination against them. That is, they realise that it is a problem, but are not actively motivated to do anything about it.

It is not enough to appeal to people's sense of moral rectitude, nor to warn them that they are designing for 'their future selves', nor to frighten them with threats of legislation, or to lure them with the promise of new and bigger markets. All of these have some appeal, but will soon get pushed aside if they are not 'core' to what the organization is doing,- to use the systemic terminology employed by Franzden (2011), -if there is not a 'structural coupling'.

Acknowledging that these attitudinal barriers are part of the problem is an example of the kind of work that is uncovered by systemic thinking designers. Since designers are increasingly being called in to help formulating strategies of organizations, and particularly strategies to do with social Innovation (Brown & Wyatt, 2010), this is hopeful that with more systemic design work, tackling attitudinal barriers will be part of the designed solutions. Further, some of this work is with public policy formulation using systems thinking (Ryan, 2014). Designers who are trained in using systems thinking can be instrumental in making more effective policies by helping to embed the "joined-up" attitude that is vital to understanding how organizations can really adopt and practise Design for All. As noted by a consultant for companies wanting to implement Inclusion and Diversity Strategies in their organisation:

"whole-systems thinking is important in the context of Inclusion and Diversity because most of the challenges we face as a society represent a set of interrelated elements in broader and more complex systems. These challenges cannot be solved in isolation apart from their impacts on the rest of the system." (Sweeney, 2014)

## Conclusions

The aim for the uptake of Design for All, is that just as social discrimination of children born out of wedlock, of people from different ethnic groups or of different sexual orientation has largely disappeared from some societies, it will be the same for people with disabilities, who will enjoy full rights and the ability to participate in society. This will be a result not of just of top-down policies and legislation against discrimination, but of take up and application of Design for All principles and values that will have passed into everyday thinking and usage.

To return to the example of the designated wheelchair space in the train, It will mean that trains will be designed with ramps into more parts of the train, with seats that can be removed or folded up easily to make room for people with wheelchairs, baby carriages, or luggage, or even cleaning and replacement. In short they will be designed for all.

It will also be the time when those entrusted with policy making in government look to designers and those practicing systemic thinking to help them to effect social changes. As Veale remarks, (2014) this is happening in Canada, but has yet to develop in other countries. The EU, whose strategy policy was under review in this paper, has yet to deploy designers of any sort, although the EU has recognized that Design is the key to Innovation (Commission of the European Communities, 2009). It is sobering to think that the problems are not to be solved by technology or design singly, as noted by the sculptor Tony Heaton, himself a wheelchair user:

"It's amazing that in 1969 we as a society managed to put a man on the moon and yet we still can't get a wheelchair user from one railway station to another nearly 50 years later... You have to come to the conclusion that it is a lack of will to create a more accessible world, not lack of technology or design skills." (quoted in Holt, 2013)

Our working hypothesis is that Design for All will be adopted more readily and will merge into everyday Design culture and practice if aided by a systemic design approach to its implementation. Such an approach will reach 'joined up thinking' and offer 'whole systems' thinking and recognize that inputs, processes, outputs and outcomes can be triggered to correspond with internal arrangements of organizations and structures. It will target the interrelationships between components to start changes to those arrangements.

This is work in progress and our investigation continues.

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