

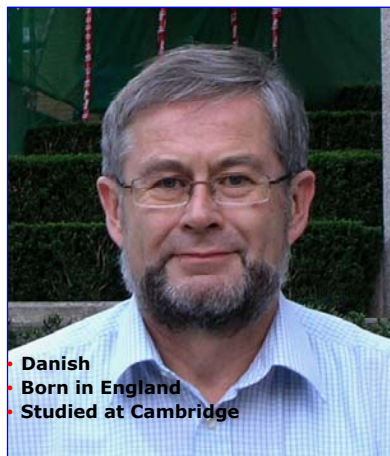
3 December 2008



Who I am and what I do

2

Who I am and what I do



- Danish
- Born in England
- Studied at Cambridge

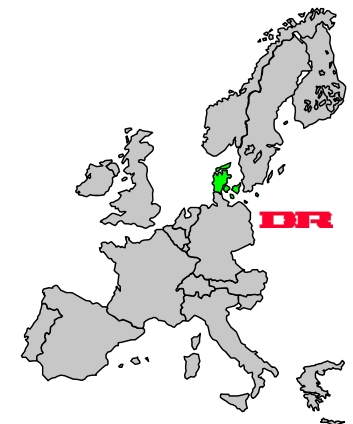


3

Who I am and what I do



- Work 50% at DR, Danish Broadcasting Corporation
- Strategic projects



4

Who I am and what I do

DR

- Work 50% at DR, Danish Broadcasting Corporation
- Strategic projects
 - Open standards for metadata-driven services like PVRs (personal video recorders)



5

Who I am and what I do



- Work 50% at DR, Danish Broadcasting Corporation
- Strategic projects
 - Open standards for metadata-driven services like PVRs (personal video recorders)
 - Access services on digital TV in Europe

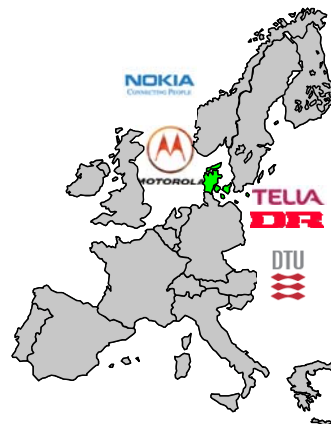
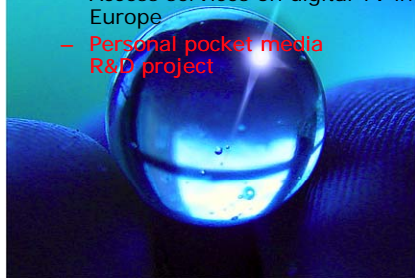


6

Who I am and what I do

DR

- Work 50% at DR, Danish Broadcasting Corporation
- Strategic projects
 - Open standards for metadata-driven services like PVRs (personal video recorders)
 - Access services on digital TV in Europe
 - Personal pocket media R&D project



7

Who I am and what I do

DR

- Teaching at academic institutions



8

Who I am and what I do

DR

- Teaching at academic institutions



- IT University of Copenhagen
- Danish Technical University
- University of Hong Kong
- Murdoch University, Perth, WA
- UNITEC, Auckland, NZ
- INA, Paris, France



9

Who I am and what I do

DR

- Independent consultant



- Branding & communications



10

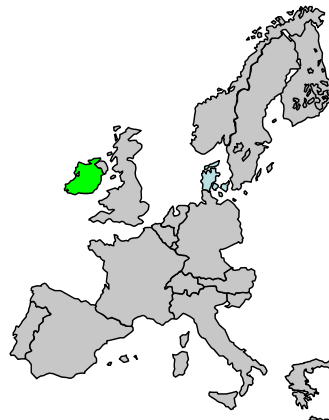
Who I am and what I do

DR

- Independent consultant



- Media policy & strategy
- FAS Ireland - Training & Employment Board (Media)



11

Who I am and what I do

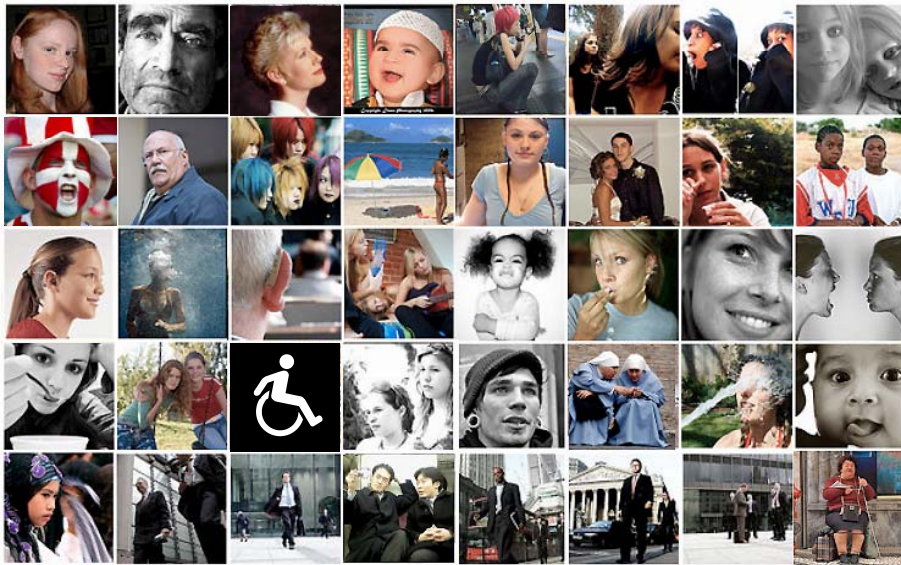
DR

- Independent consultant



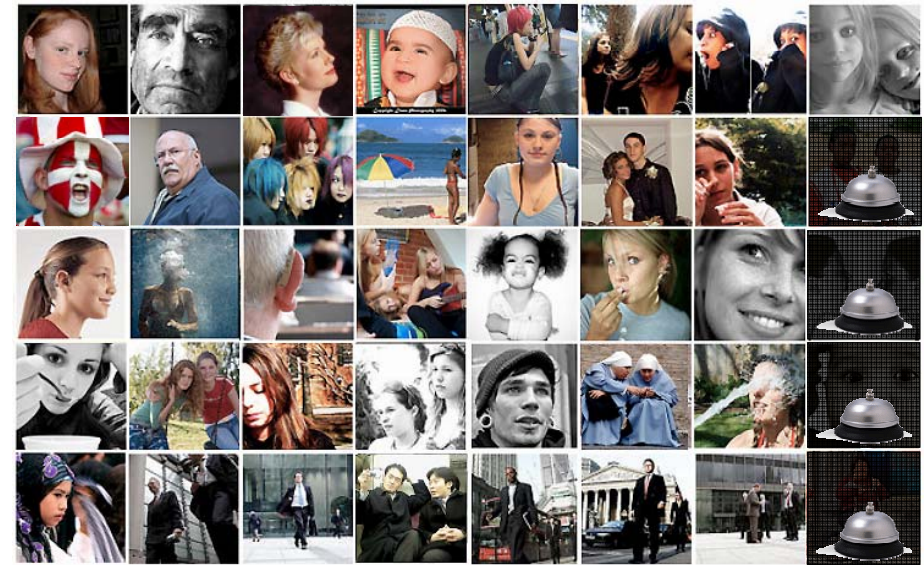
1. What is the problem?

DR



1. What is the problem? IT is not fully accessible to all

DR



1. What is the problem? Some need help

DR



1. What is the problem? IT offers new options...

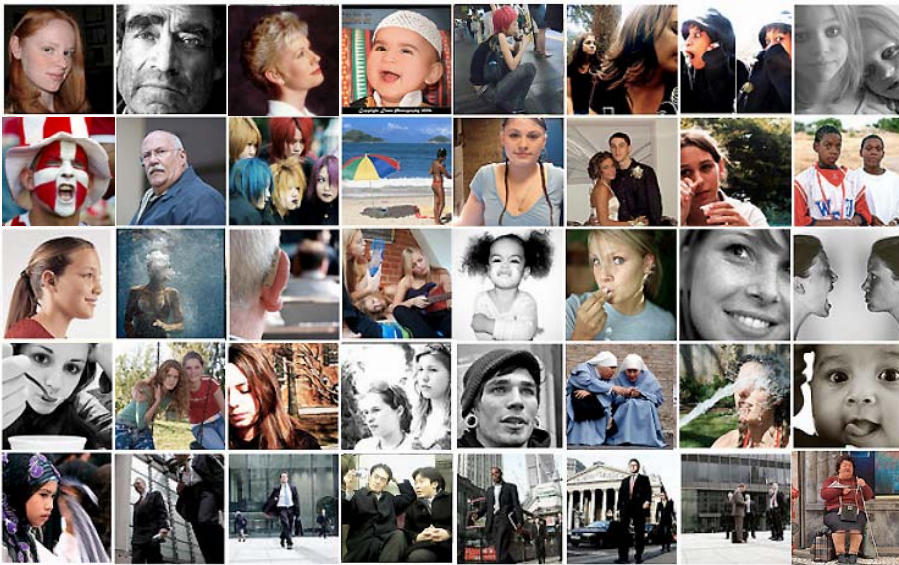
DR



1. What is the problem?

But first, what do we mean by e-inclusiveness?

DR



1. What is the problem?

e-inclusiveness \approx accessibility

DR



Source: Simeon Keates & John Clarkson. Countering design exclusion - an introduction to inclusive design. Page 52. Springer Verlag London (2004). [Based on Jakob Nielsen (1993)]

22

1. What is the problem?

e-inclusiveness \approx accessibility

DR



Source: Simeon Keates & John Clarkson. Countering design exclusion - an introduction to inclusive design. Page 52. Springer Verlag London (2004). [Based on Jakob Nielsen (1993)]

23

E-inclusiveness \neq Exclusion

DR

http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

The screenshot shows the 'Inclusive Design' website with the 'Exclusion Calculator' tool. The tool has a sidebar with 'In this section...' containing 'Disability surveys' and 'Capability loss'. The main area has a 'back' link and input fields for 'Impairment' (a dropdown menu), 'Sex' (Both), 'Min Age' (16), and 'Max Age' (102). Below these is a large empty box for the calculator's output. At the bottom, there is a copyright notice: 'Copyright © 2005 Cambridge Engineering Design Centre. Produced by CUED Multimedia Group'.

24

Definition

Data

Definitions

Applying Guidelines

Exclusion Calculator

Case Studies

E-inclusiveness ≠ Exclusion

http://www.eng.cam.ac.uk/inclusedesign/index.php?section=data&page=exclusion_calc

Exclusion Calculator

Impairment:

Sex: Both

Min Age: 16

Locomotion

Reach & Stretch

Dexterity

Vision

Exclusion Calculator

« back

Copyright © 2005 Cambridge Engineering Design Centre.
Produced by CUED Multimedia Group

http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

Exclusion Calculator

Impairment: -----

Sex: Both Min Age: 16

Locomotion

Reach & Stretch

Dexterity

Vision

« back

Copyright © 2005 Cambridge Engineering Design Centre.
Produced by CUED Multimedia Group

Exclusion **DR**
http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc


http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

Locomotion

Impairment:

Sex: Min Age: Max Age:

Not applicable Full capability



Not applicable

26

Exclusion **DR**

http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc


http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

Locomotion

Impairment:

Sex: Min Age: Max Age:

Not applicable Full capability



Cannot walk at all

27

Exclusion **DR**

http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc


http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

Locomotion

Impairment:

Sex: Min Age: Max Age:

Not applicable Full capability



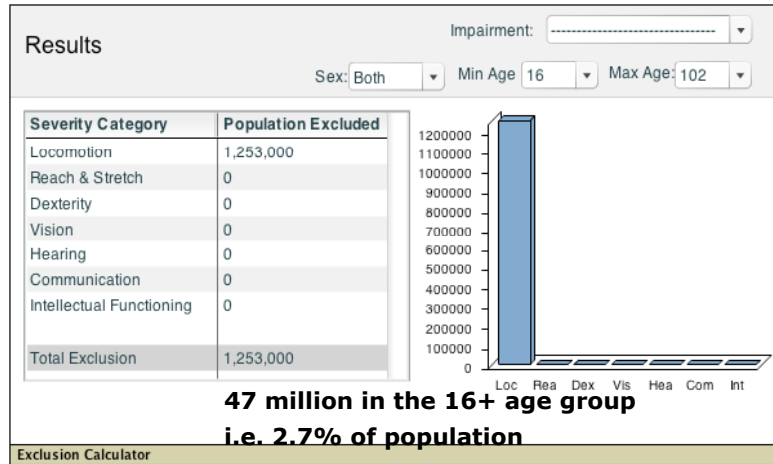
Always needs to hold on to something to keep balance

28

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

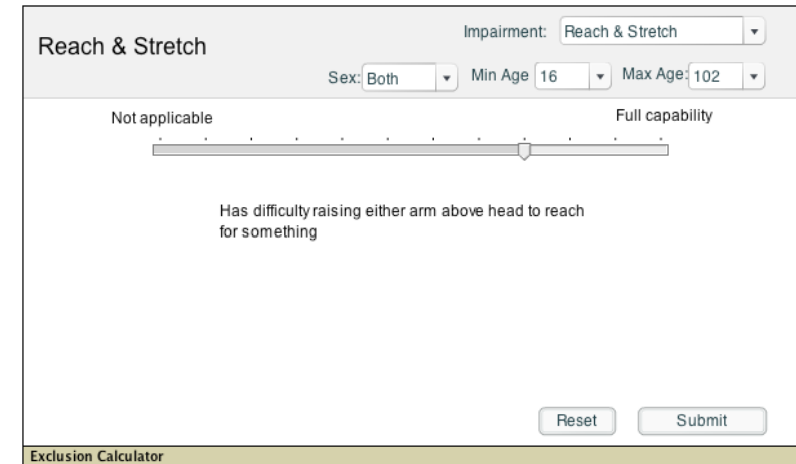


29

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

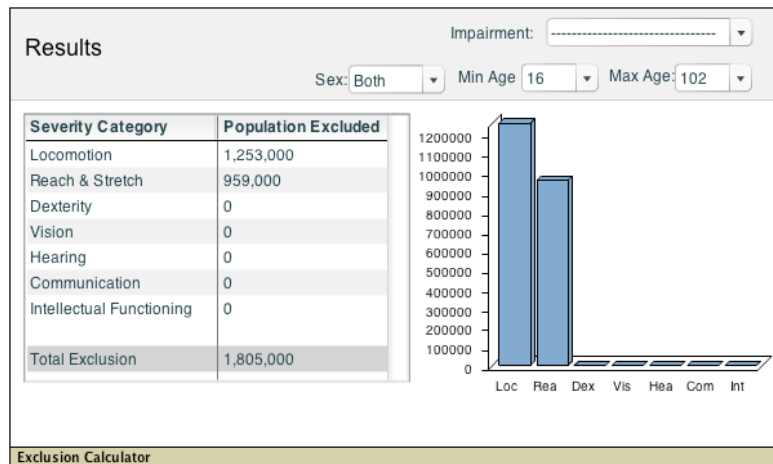


30

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

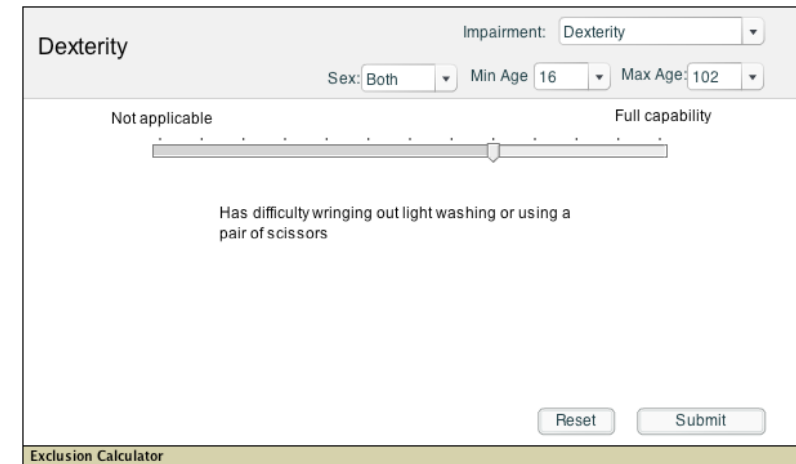


31

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

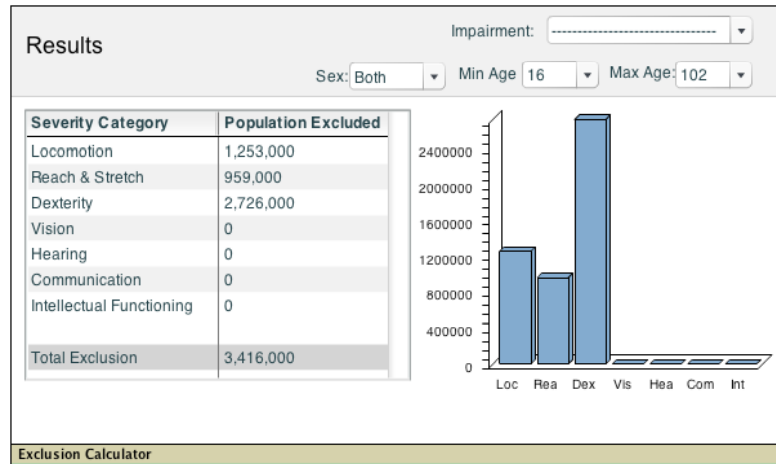


32

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

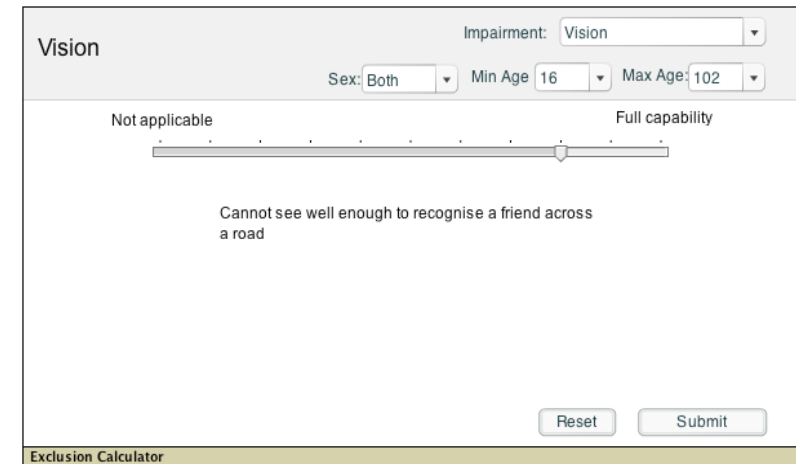


33

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

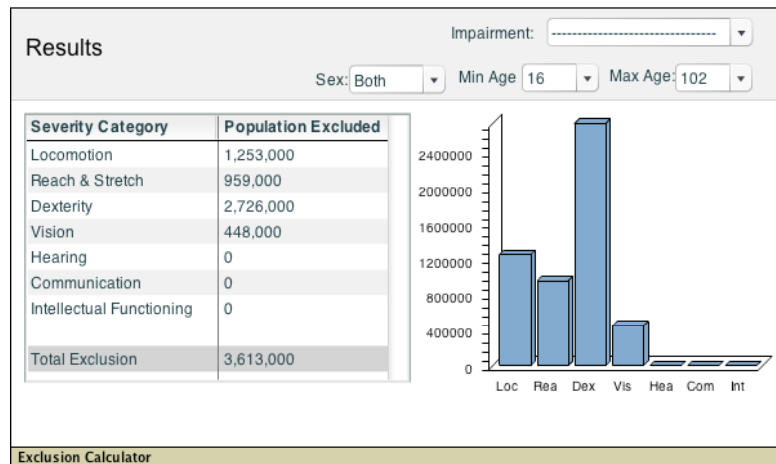


34

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

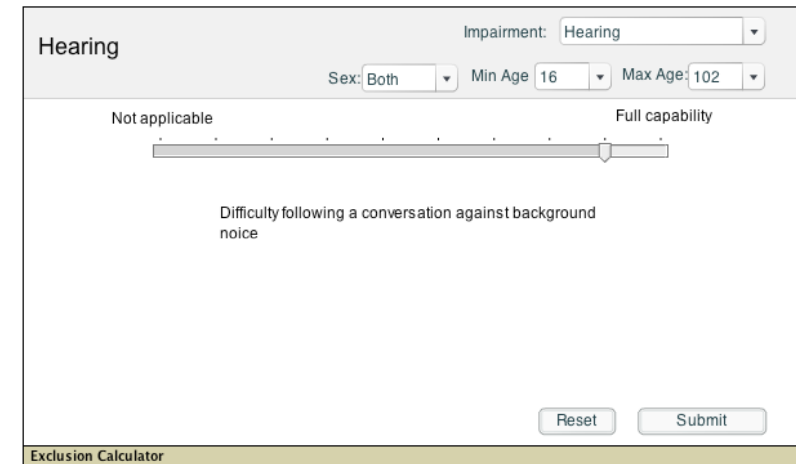


35

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

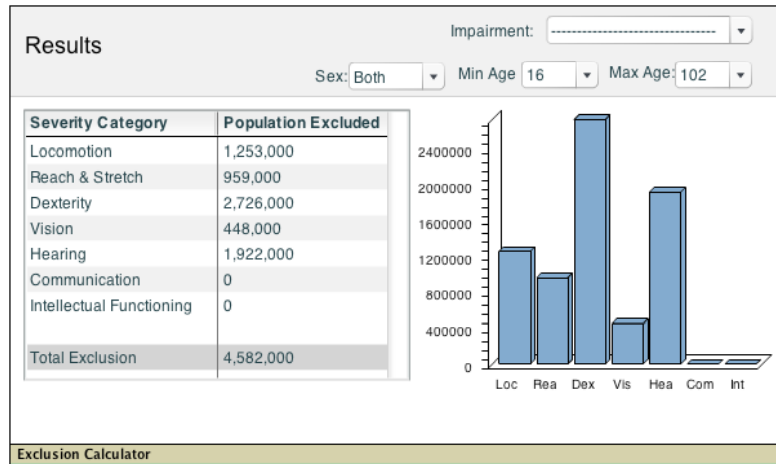


36

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc



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Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

Communication

Impairment: Communication

Sex: Both Min Age: 16 Max Age: 102

Not applicable Full capability

Other people have some difficulty understanding him/her/
Has some difficulty understanding what other people say or what they mean

Reset Submit

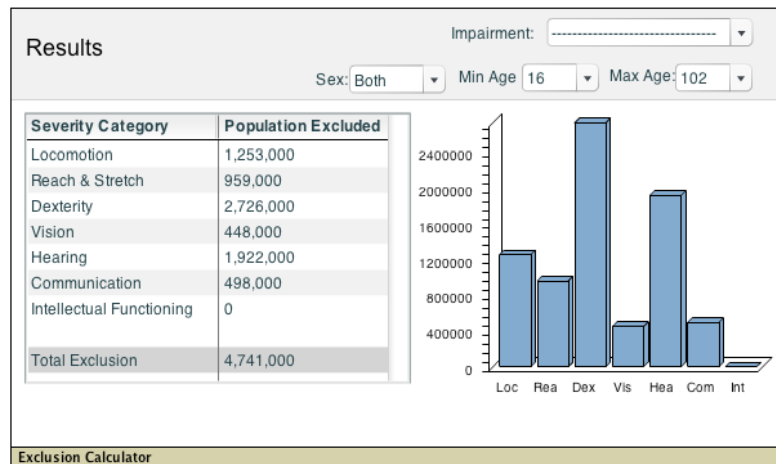
Exclusion Calculator

38

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc



39

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

Intellectual Functioning

Impairment: Intellectual Functioning

Sex: Both Min Age: 16 Max Age: 102

- ☒ Cannot count well enough to handle money
- ☒ Cannot write a short letter to someone without help
- ☒ Cannot read a short newspaper article
- ☒ Often forgets the name of people in the family or friends seen regularly
- ☒ Often forgets to turn things off such as fires, cookers or taps
- ☒ Cannot remember and pass on a message correctly
- ☒ Cannot watch a half hour TV programme all the way through and tell someone what it was about
- ☐ Often gets confused about what time of day it is
- ☐ Thoughts tend to be muddled or slow
- ☐ Often loses track of what is being said in the middle of a conversation
- ☐ Often forgets what was supposed to be doing in the middle of something
- ☐ Requires full Intellectual Functioning Capability

Reset Submit

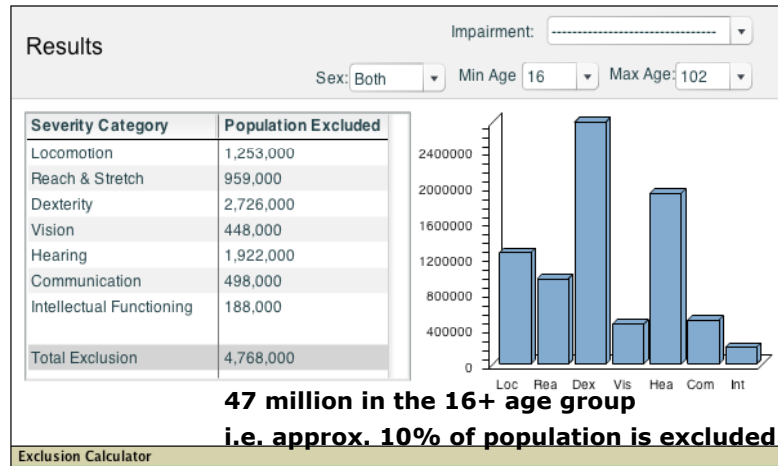
Exclusion Calculator

40

Exclusion



http://www.eng.cam.ac.uk/inclusivedesign/index.php?section=data&page=exclusion_calc

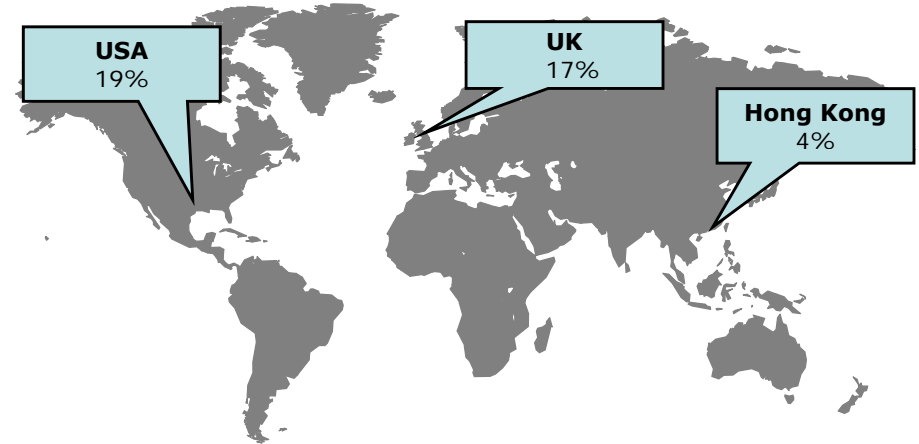


41

E-inclusiveness ≠ Exclusion



Different definitions of capacity and impairment from one country to the next



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E-inclusiveness: the rationale

impairment need not be equated with disability



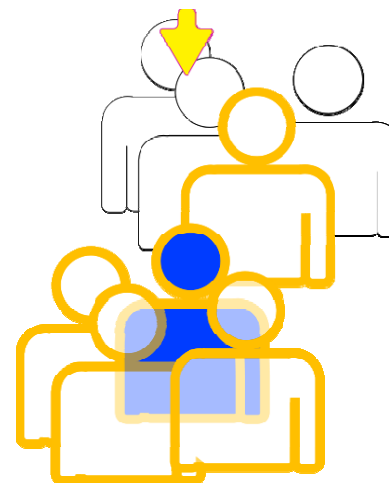
• Human rights

- Impairment:
- Perception
 - Cognitive
 - Motion

43

E-inclusiveness: the rationale

impairment need not be equated with disability



• Human rights

- Impairment:
- Perception
 - Cognitive
 - Motion

Disability:

- Impairments that manifest themselves through deliberate or inadvertant lack of support by others

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E-inclusiveness: the rationale

impairment need not be equated with disability

DR



• Human rights

"recognizes and respects the right of persons with disabilities to benefit from measures designed to ensure their independence, social and occupation integration and participation in the life in the community."

Article 26 of the Charter of Fundamental Rights of the European Union.

45

E-inclusiveness: the rationale

DR



Assistive and Inclusive:

- BBC offering subtitles on 100% of their television programmes.
- Benefits the deaf and hard of hearing



46

E-inclusiveness: the rationale

DR



Assistive and Inclusive:

- Signing outside peak viewing



47

E-inclusiveness: the rationale

DR



Assistive:

- Programmes for people with impairments well away from prime time.



A programme about skiing for the blind

48

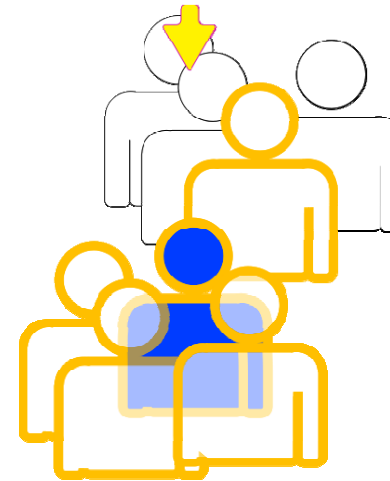
E-inclusiveness: the rationale



- **Human rights**
- **Demographics**
 - Populations are aging
 - “Baby boomers”
 - Makes economic sense to ensure elderly are independent for as long as possible

49

E-inclusiveness: the rationale



- **Human rights**
- **Demographics**
 - Populations are aging
 - “Baby boomers”
 - Makes economic sense to ensure elderly are independent for as long as possible
- **The Business Case**
 - Legal requirements
 - Corporate Social Responsibility
 - Costs & employees
 - Markets

50

1. What is the problem?

Conclusions

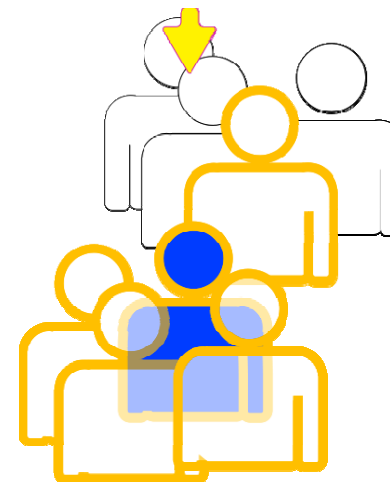


- There are a number of legal, ethical and economic reasons for working towards e-inclusiveness

51

2. How can we be more inclusive?

The case of digital TV



1. What are the problems people have when accessing digital TV?
2. What are their causes?
3. What options do we have in the short and medium term?
4. What would it take to get widespread adoption of access services?

52

2. How can we be more inclusive? The case of digital TV

DR



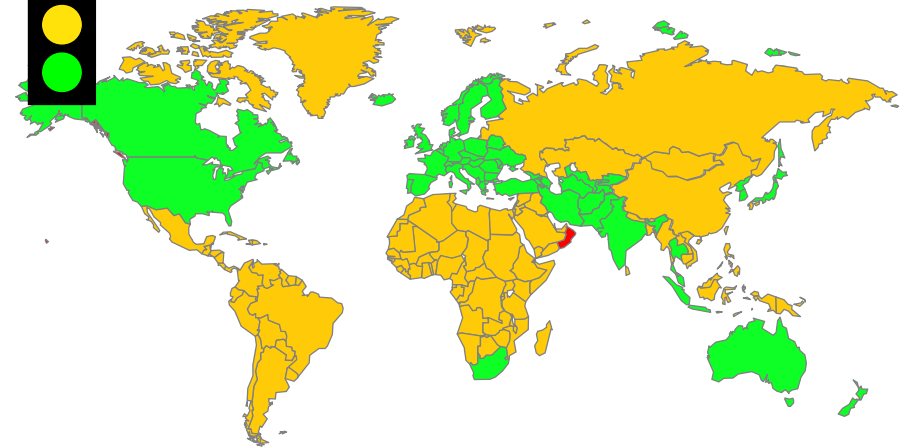
Access Issues with digital television	estimate (% of population)
1. Finds it difficult/impossible to hear the audio of TV programmes	1,8%
2. Finds it difficult/impossible to hear/understand speech in mother tongue	2,3%
3. Sometimes finds it difficult to hear/understand speech in mother tongue	2,3%
4. Finds it difficult/impossible to understand speech in a foreign language	No figures
5. Finds it difficult/impossible to see the visual component of a TV programme	0,7%
6. Unfamiliar with remote controls and interface conventions on digital television sets/ STBs	10,9%
7. Finds it difficult/ impossible to make use of access services such as Subtitles (SDH) or Audio Description	9,4%
8. Finds it difficult to switch gaze from screen to remote control device	3,4%
9. Finds it difficult to read subtitles (and other OSDs including EPGs)	3,4%
10. Finds it difficult/impossible to use the television receiver using a remote control device	10,9%
11. Finds it difficult/impossible to set up and configure TV set or Set Top Box	10,9%

Source: Calculations based on data from Grundy, E, Ahlberg D, Ali M, Breeze E, Sloggett A (1999). Disability in Great Britain: results from the 1996/97 Disability Follow-up to the Family Resources Survey. Charlesworth Group, Huddersfield, UK.

53

The switch from analogue to digital will be largely complete in 2012

DR



54

The political vision of Digital TV
after analogue shut-off



Our view of analogue shut-off





2. How can we be more inclusive? The case of digital TV

DR

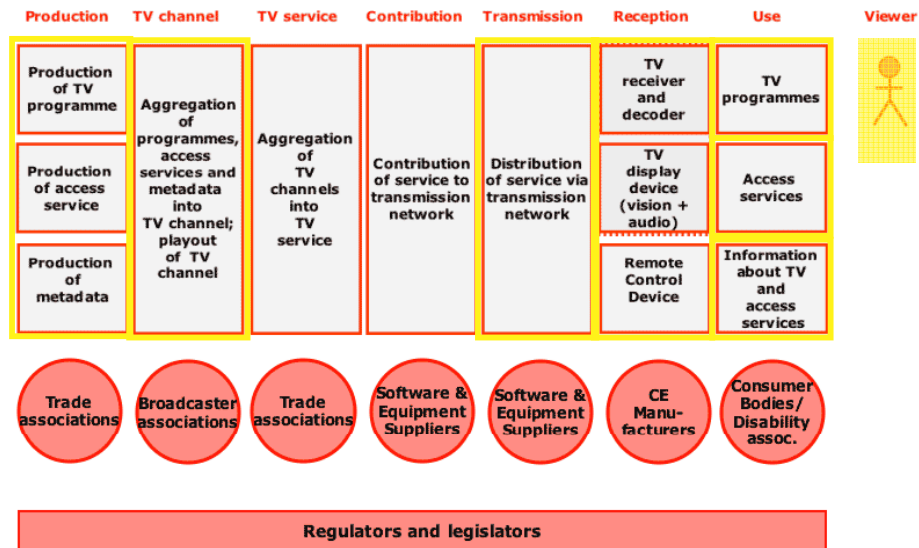


58

2. How can we be more inclusive?

DR

Stakeholders see things from their own perspective



59

Sunset solutions



Sunrise solutions

3. The options in the short to medium term

Access services and the platforms they are delivered on have a finite life

DR

1st generation

MPEG 2 solutions (DVB-T, DVB-S, DVB-C)



DR



62

DR



63

DR

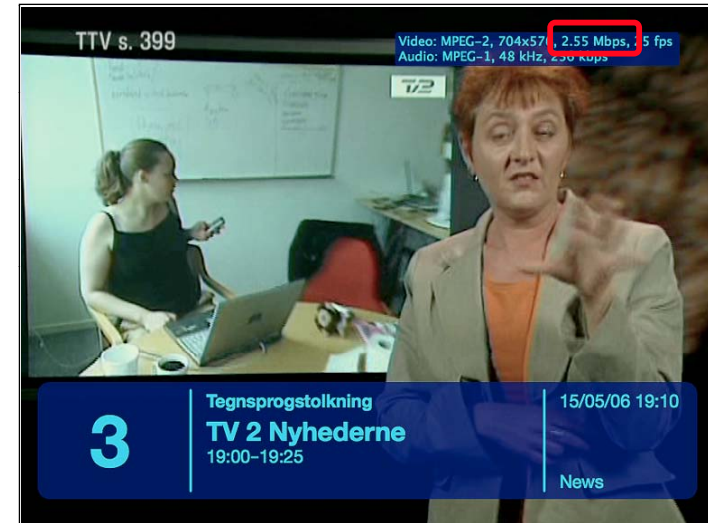


64





69



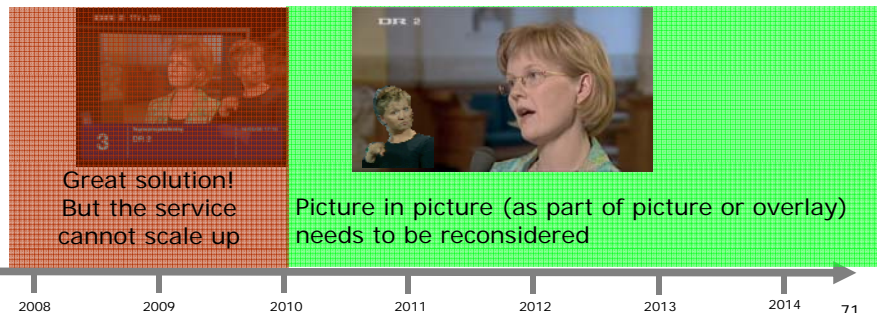
70

3. The options in the short to medium term

Some solutions are coming to the end of their useful lives.
Others are just emerging.

1st generation

MPEG 2 solutions (DVB-T, DVB-S, DVB-C)



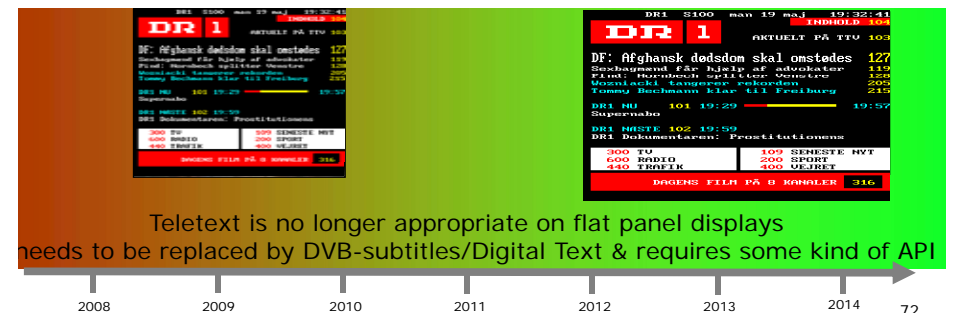
71

3. The options in the short to medium term

Some solutions are coming to the end of their useful lives.
Others are just emerging.

1st generation

MPEG 2 solutions (DVB-T, DVB-S, DVB-C)



72

3. The options in the short to medium term **DR**

Others are just emerging.

Ugly Ducking and Tiger Cub

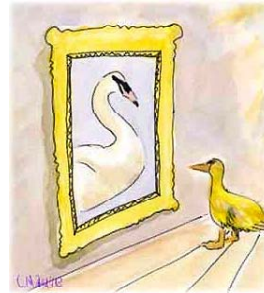
Tiger Cub

- Different
- Cuddly and sweet at first
- Represents a threat when it grows up!



Ugly Duckling

- Different
- Disliked at first
- Has a great future ahead!



73

3. The options in the short to medium term **DR**

Mature services - how long is their useful life?

1st generation

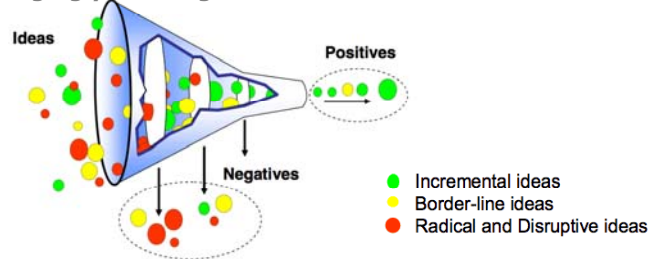
MPEG 2 solutions (DVB-T, DVB-S, DVB-C)



74

3. The options in the short to medium term **DR**

Spotting Ugly Ducklings for the medium term



2nd generation

MPEG 4 solutions (2nd generation DVB)

Hybrid DVB + IP solutions

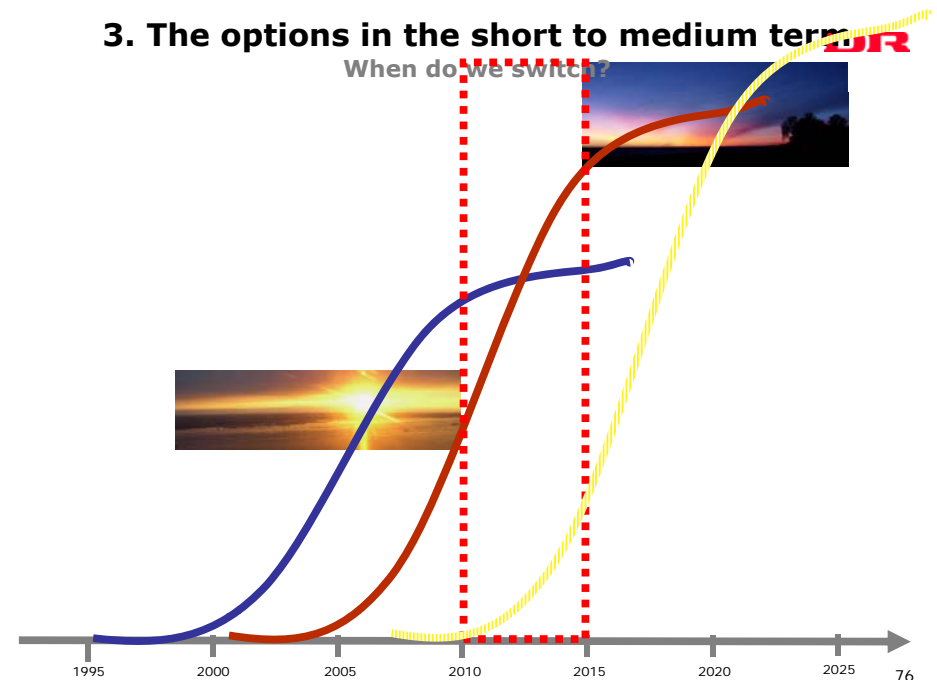
IPTV, P2P IP, B2H (?) solutions



75

3. The options in the short to medium term **DR**

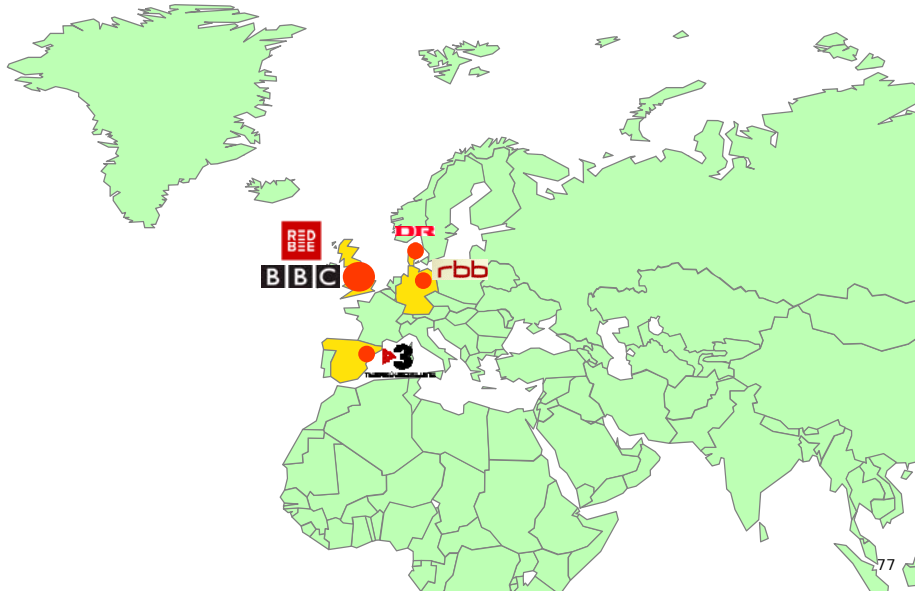
When do we switch?



76

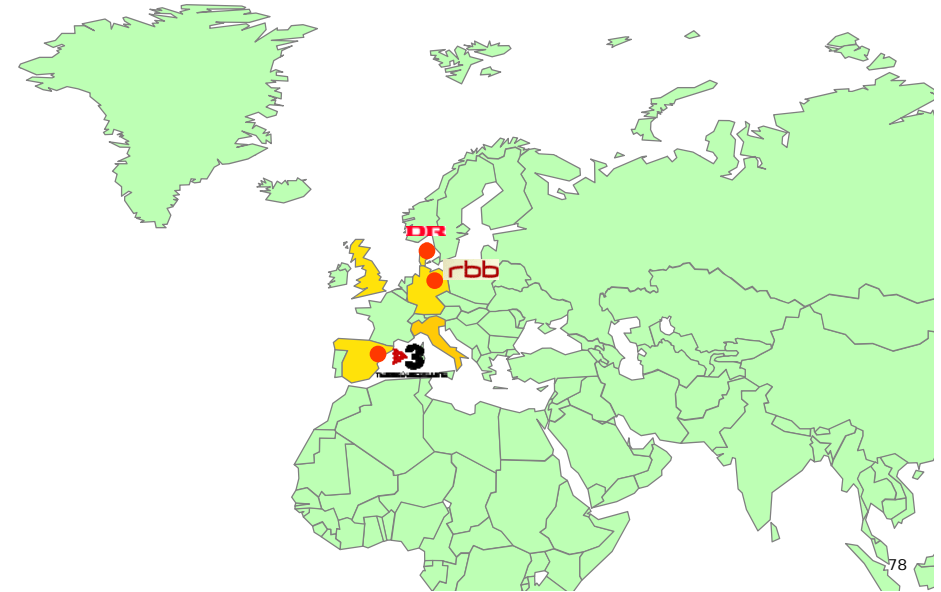
Mature services on 1st generation DTV **DR**

2009: Pilots of services in 4 territories



Proof-of-concept for emerging services **DR**

2009: Validation work in three territories



3. The options in the short to medium term **DR**

Spotting Ugly Ducklings for the medium term

Three success criteria:

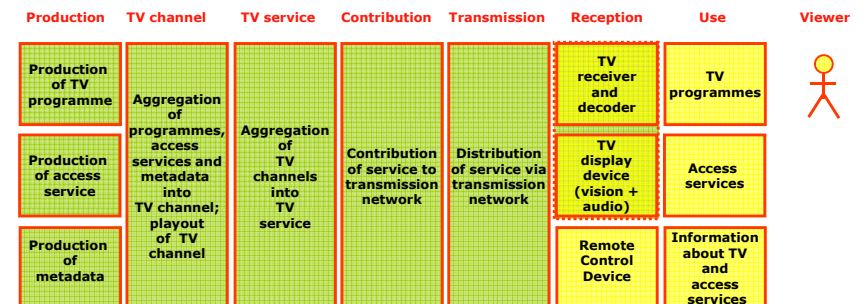


- 👍 Documented value for end users
- 👍 Support for technological solution
- 👍 Sustainable business model

All criteria need to be met

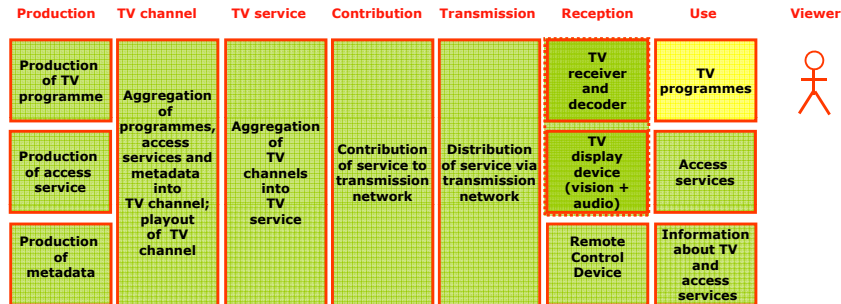
4. Promoting e-inclusiveness **DR**

Maturity model for each service



4. Promoting e-inclusiveness

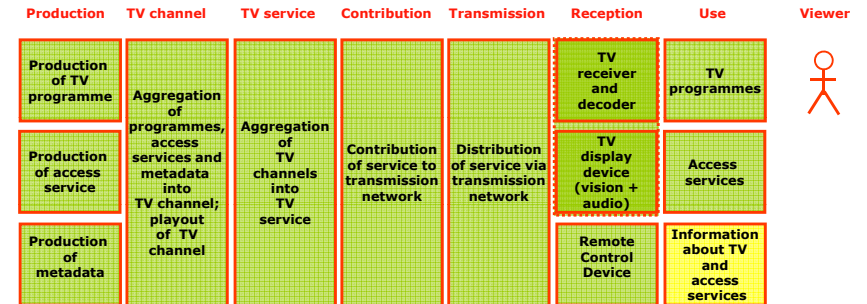
Interviews with each of the stakeholders



81

4. Promoting e-inclusiveness

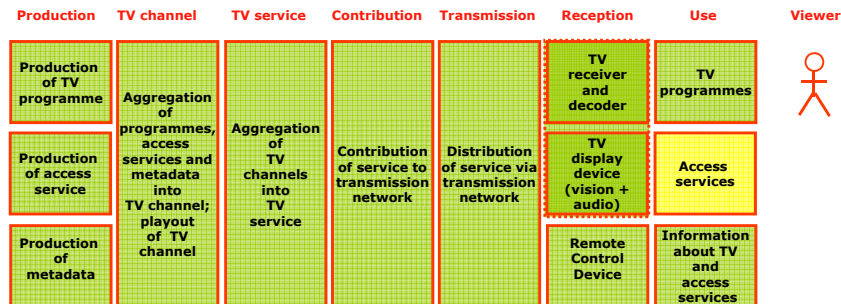
Identify areas of consensus



82

4. Promoting e-inclusiveness

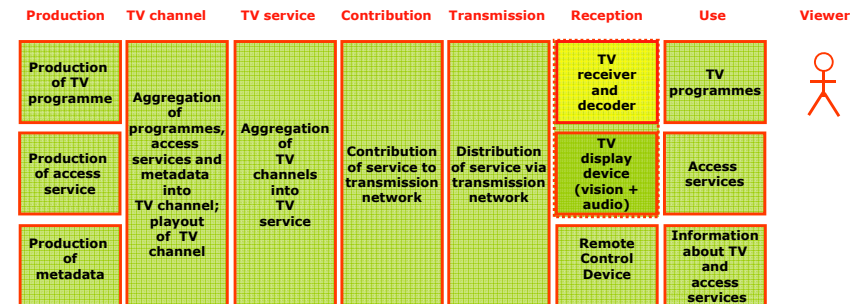
Identify areas of good practice



83

4. Promoting e-inclusiveness

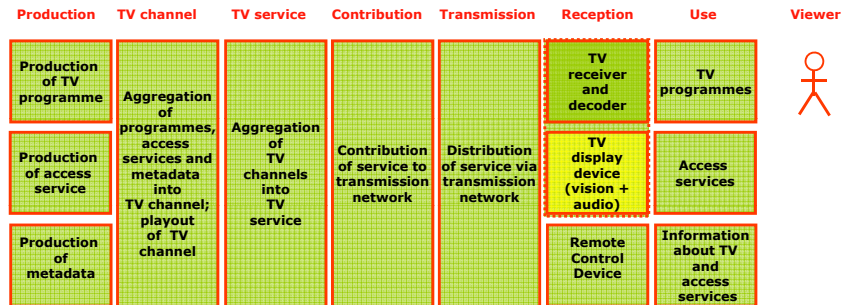
Which issues have to be addressed when?



84

4. Promoting e-inclusiveness

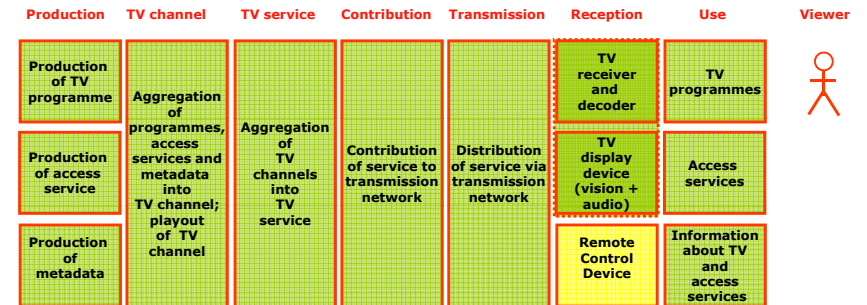
A generic maturity model



85

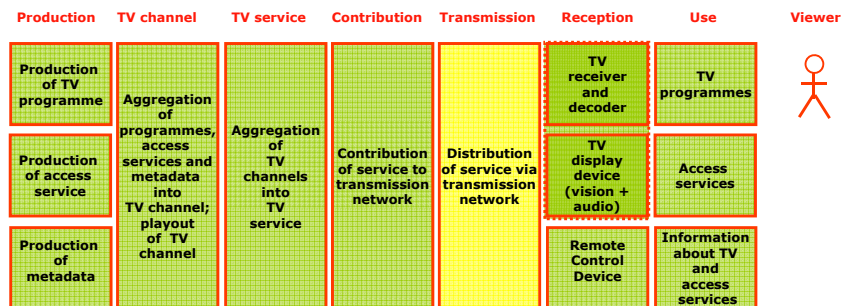
4. Promoting e-inclusiveness

problems > causes > options > implications of each



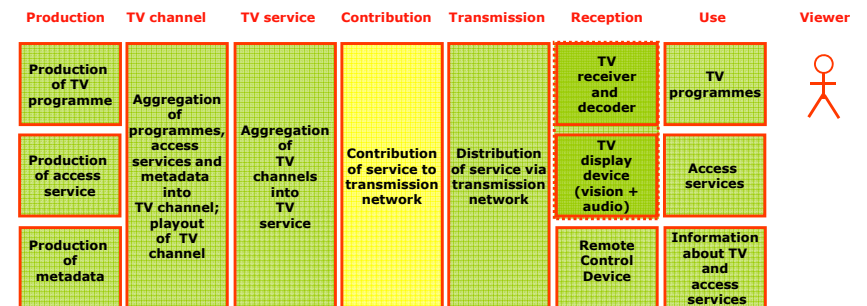
86

4. Promoting e-inclusiveness



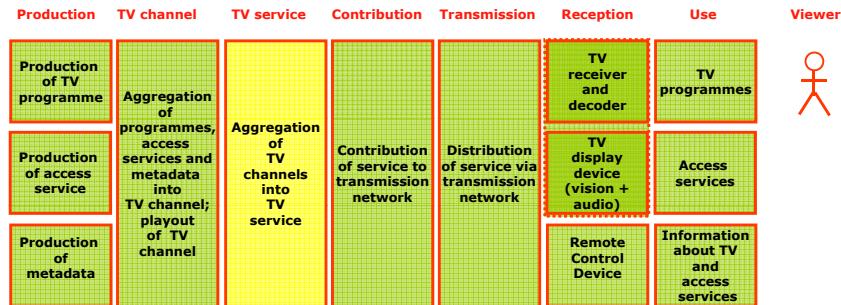
87

4. Promoting e-inclusiveness



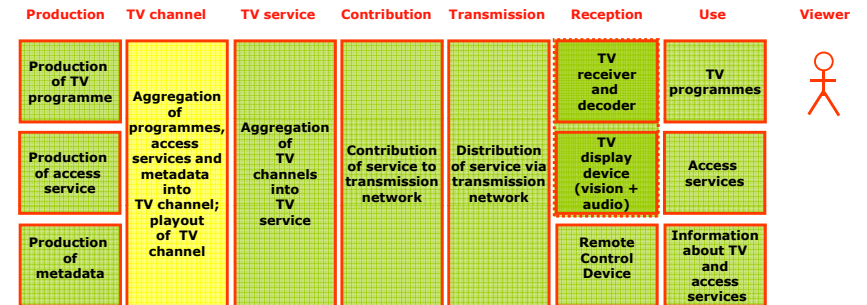
88

4. Promoting e-inclusiveness



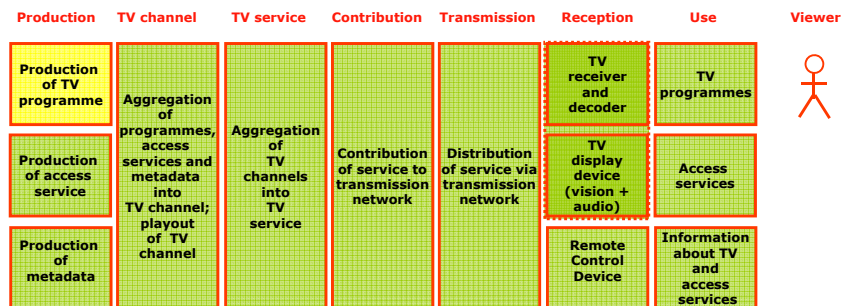
89

4. Promoting e-inclusiveness



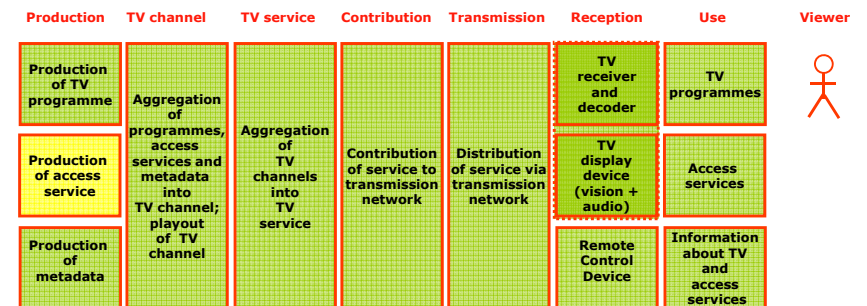
90

4. Promoting e-inclusiveness



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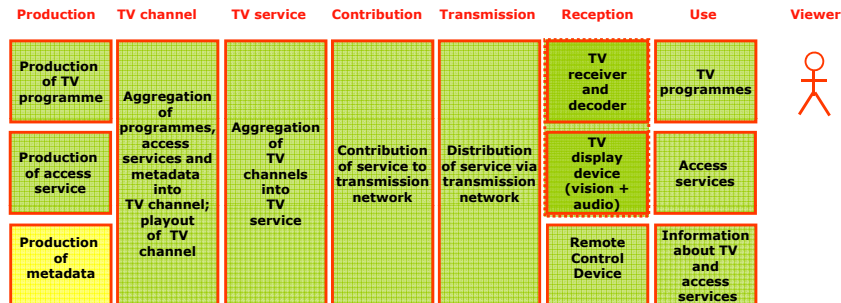
4. Promoting e-inclusiveness



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4. Promoting e-inclusiveness

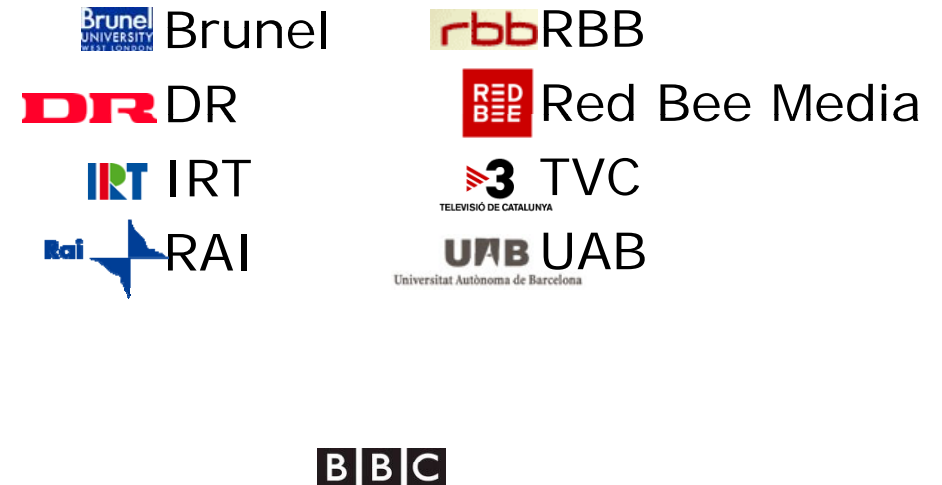
DR



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4. Promoting e-inclusiveness About the consortium

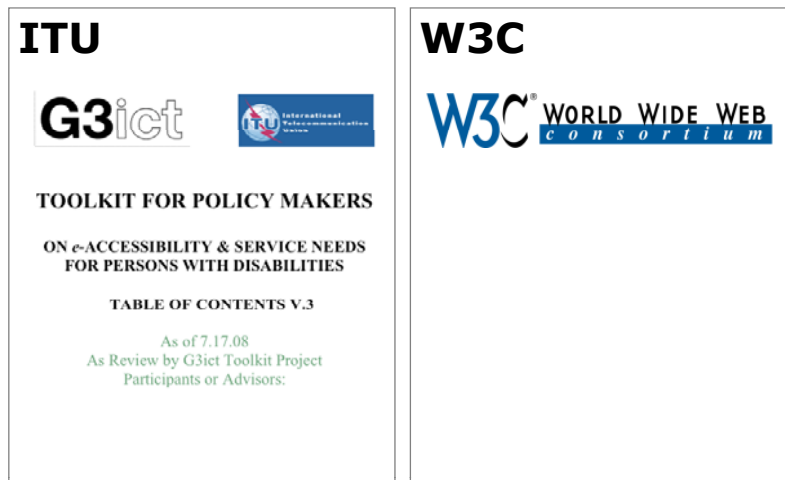
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TOOLKIT FOR POLICY MAKERS

ON e-ACCESSIBILITY & SERVICE NEEDS
FOR PERSONS WITH DISABILITIES

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As of 7.17.08
As Review by G3ict Toolkit Project
Participants or Advisors:

W3C

W3C® WORLD WIDE WEB
consortium

World Wide Web: W3C Accessibility Initiative

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- Web Standards from the W3C:
- Web Accessibility Initiative (WAI)
 - <http://www.w3.org/WAI/>
 -
- Recent developments in speech synthesis:
 - Speech Synthesis Markup Language (SSML) Version 1.1
 - <http://www.w3.org/TR/2008/CR-speech-synthesis11-20081107/>
- Recent developments in speech recognition:
 - Pronunciation Lexicon Specification (PLS) Version 1.0
 - W3C Recommendation 14 October 2008
 - <http://www.w3.org/TR/2008/REC-pronunciation-lexicon-20081014/>

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**Worst case scenario for access services
on 1st and 2nd generation digital TV!**



Thank you!



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