[music playing]

[Narelle] Hi, and□
welcome to another□

episode of The□
Digital Access Show.□

Mark Muscat is the CEO...□

of Digital Access Solutions□
And Assistive Technology,□

the parent, founder, the owner□
of The Digital Access Show.□

And we actually had a talk□
about it, and thought we really...□

wanted to have a bit more□
of a discussion around...□

the Web Content Accessibility□
Guidelines principle...□

of Operability.□

Because that is often□

where a lot of websites fail.□

Hi Mark, and thank□
you for coming on.□

[Mark] Hi, Narelle. Thank you.□

Good to be back on yet again.□

I don't know when we did□
the last one, which was…□

perceivable.□

[Narelle] Yeah, it was.□
[Mark] And…□

[Mark] Yeah. It□
was a while back.□

[Narelle] It was.□

And really between□
perceivable and operable.□

They're where most of the issues□

that we find for□

accessibility, aren't they?□

For digital accessibility.□

[Mark] They're the two□
main groups for any...□

compliance for...□

the guidelines.□

So we're understanding, and...□

it's the third major one.□

-[Narelle] Robust, yeah.□
-[Mark] Robust is probably...□

something that's got really...□

two clauses in robust but that's□
probably going to increase...□

with the updates to the WCAG,□

so that will probably...□

change in time where we'll have...□

some more…☐

levels of conformance.☐

I think it's breaking down☐

into three conformance groups.☐

But anyway, we'll do it.☐

We'll cover that when☐

that comes into play.☐

But operability is…☐

pretty much the guts of any web…☐

accessibility conformance☐

testing and auditing,☐

because that is…☐

focused on the…☐

the operation of…☐

various parts☐

within the web page.☐

Can it be used by people with

keyboards as well as mouse?

Can it be a …

person who is using

the website access…

all the controls with their…

respective assistive technology

equipment and software?

And it just goes on.

So we'll cover that

as we go through.

I don't know where you want

to lead on with this, but yeah.

[Narelle] I think…

you know, well, one of

the biggest problems…

that we find is

that first guideline,☐

which is keyboard accessibility.☐

Most websites tend to fail on☐
this, even if the menu is right,☐

it will be other☐
things, isn't it,☐

where you just with a keyboard,☐
can't access the content.☐

[Mark] Precisely.☐

So this is when we☐
talk about keyboard,☐

we're talking…☐

about the functionality of using☐
the various keyboard commands.☐

There's basically☐
using the tab key☐

and the shift tab☐
keys to actually…☐

move forward and□

backwards through…□

the controls and content□

that is found on a website,□

or web page.□

And we are…□

focusing on the ability to…□

bring up various controls.□

So, what controls□

you would bring up with□

the mouse by hovering over,□

or clicking on it,□

should also be…□

accessible to those□

who just have…□

a keyboard.□

And the testing for this□

is pretty straightforward.□

Just put your mouse away, and…□

try to use your website□

with the keyboard,□

using the tab key□

and the shift tab key.□

We'll talk about assistive□

technology a little bit later,□

but there are obviously further□

ways to navigate websites,□

which come into□

that operability,□

and functions of operability.□

So, but the basic one is just to□

use the tab and Shift Tab key.□

And often,□

you'll find that there's□

certain controls and certain...□

assets or aspects of the...□

web page that just□

cannot be accessed.□

In some cases,□

menus cannot be escaped from,□

being the case where□

if you go into a menu,□

you won't to be able to□

press the escape key...□

to actually come out of that□

menu and go back to the...□

page.□

So, sometimes that□

doesn't work as well.□

[Narelle] Yeah.□

And it's interesting because□

it is so often overlooked.□

But how many people,□

a mouse dies unexpectedly?□

It happens often.□

And I mean, the standard□

rule is keyboard only,□

and the site has□

to be mouse only,□

and the site has□

to be touch only.□

[Mark] If you really wanted to,□

you can implement your own□

keyboard shortcuts as well.□

[Narelle] Yeah.□

[Mark] By using various…□

JavaScript and□

various pieces of…□

code to do that,☐

and that, and that☐

enhances the use of...☐

your website and web pages.☐

So, being able to press☐

a shortcut key to actually...☐

invoke or utilise a button,☐

it's actually quite nice.☐

And if you know that there's a☐

button that people are going to...☐

frequently use,☐

a shortcut key would be really,☐

really appreciated by☐

most keyboard users.☐

[Narelle] But Mark,☐

a lot of shortcut☐

keys are used by

other apps as well.

You know what?

What is the…

you know, when the shortcut

keys are used by other apps,

how do you get

around that? Because…

you can't cross over.

Like control C is a

standard copy, isn't it?

[Mark] Precisely, and

it's a case of just knowing.

Knowing the keyboard

shortcuts that other apps use,

trying them out

when you do testing.

Even before you implement,

you can even try doing some of the

keyboard shortcuts to see, okay,

does Control Shift C

actually do anything?

Oh no, it's fine. It

looks like it's free to use.

Just being a little bit

vigilant about the whole...

setting up the

keyboard shortcuts,

and testing them

out before you do it,

and testing them out after.

Most, most web

applications will use...

accommodations such

as control shift or alt shift,

so that they don't

interfere with any Windows□

or global based commands that,□

you know, may come□
with the operating system,□

or even with the browser.□

So it's important□
to to try that out.□

[Narelle] Excellent.□
[Mark] Yeah.□

[Narelle] The second guideline□
is all about time-based.□

And...□

it is where, say, a good example□
is you log on to your bank,□

and you've only got a certain□
time to carry out a process,□

whether it's transfer money,□
whatever it is.□

And…☐

it's hard to navigate☐

using assistive☐

technology, at times, as well,☐

if the website's☐

not set up correctly,☐

and you've got that☐

time factor, isn't it?☐

[Mark] Yeah, so you want to☐

allow for people to be able to…☐

get a warning to say that☐

their time expiry is coming up,☐

and that they need to…☐

activate a button that☐

says, give me more time,☐

or, yes, I'm still here.☐

I think most of the☐

time, you will find that…□

there will be…□

the functionality□
to extend the time,□

rather than…□

pressing it to say, I'm here,□

because that could□
obviously hold people up,□

or hold systems up.□

So yeah, the the idea of…□

prompting people is a good idea,□

to actually allow them□
to have more time□

to perform the necessary□
tasks that complete the form.□

[Narelle] One of the other things I□
often see now is just giving a code,□

that they, a reference code☐

of some type that's saved,☐

and they use to log back in.☐

Is that a good way☐

to get around it?☐

[Mark] The…☐

say, like a callback code☐

or something like, yeah.☐

Look, if it's accessible,☐

it can be useful,☐

but sometimes I☐

think you'll find that☐

that can confuse people even more.☐

There are forms where you☐

will be able to do, "Save Changes",☐

and come back to☐

a particular section.☐

So you'll see a

lot of those forms.

They're okay.

Yeah. So sometimes it's…

it's a case of knowing how much…

to put on a form.

If you have a form that has…

twenty, 30, 40,
50 fields to fill in,

that's a lot of data
to collect in one form.

If you try to break the forms
up into meaningful sections

and have appropriate next,

back buttons,

and save buttons, that often
can be much more effective,

and it gives people more time…□

to do…□

the general, the whole□
task that's required.□

Yeah. The…□

That is a very…□

important thing to□
take into consideration,□

how much time people□
ought to, need to do it.□

And the more accessible,□
the less time, obviously.□

If people were able to come back□
to that keyboard navigation,□

if people were able to navigate□
with a keyboard or mouse,□

or their assistive technology,□

and they're able to do that☐

quickly, then obviously they…☐

complete the form within…☐

an appropriate time.☐

But if you have an☐

inaccessible form,☐

that just makes it difficult.☐

[Narelle] What about☐

the third guideline,☐

which is seizures☐

and physical reactions.☐

Now, I've run into this☐

couple of months ago, actually,☐

where a website☐

was a maroony-red,☐

a lot of maroony-red on it,☐

and I was physically☐

sick looking at it.□

Because it was a□
really bright maroony red.□

[Mark] You're probably the best□
to talk about this one, because…□

as much as I am aware of it,□

it's probably one of□
those visual things…□

that is worth having□
somebody who…□

sometimes experiences it,□

go through it.□

And yeah,□

I'll leave that one with you.□

[Narelle] Yeah, because really□
what we're saying there is,□

if you've got anything□

that moves really quickly,□

if it flashes more than□
three times in a second,□

slow it down.□

If it's not needed,□
don't let it flash.□

And it could be, like colours□
can cause physical reactions.□

And the other one is,□

when things are moving in□
opposite directions to each other,□

so if you've got a series□
of lines moving one way,□

and then another series of□
lines moving another way,□

it can give some quite severe…□

physical reactions. And□
by physical reactions,□

I'm talking nausea,☐

migraines, vomiting,☐

epileptic fits,☐

seizures, of, you☐
know, different types.☐

It's a real issue.☐

So what I always☐
say, just avoid it.☐

You know, I don't know☐
what the need would be…☐

to have something☐
flashing that quickly.☐

Even think about☐
on social media.☐

You know, those☐
GIFs, Mark, that they do,☐

you won't have seen it☐
because you've got no sight,☐

but they moved really quickly.□

And around Christmas time,□

one of the big ones is Christmas□
trees with the blinking lights.□

And I never thought about it,□

until I thought, hang on, they□
actually flash really quickly.□

So I don't actually□
use those GIFs anymore.□

But it's a guideline that□
people do need to consider.□

[Mark] So, what we're talking□
about here is animations.□

And I'm not totally against□
animations, I think if you,□

you know, if you want□
to use animations in□

your, in your website□

to sell your products,□

to do the various marketing□

that you want to do,□

There are, they, they should□

be allowed to use them.□

What the guidelines are,□

as we've always said,□

they're a thoroughly researched…□

group of guidelines,□

and the guidelines□

are quite clear about…□

the frequency of animation,□

that being the flashes,□

and how much they should move□

in a particular time period.□

So it's really important that if□

you're going to do animations,□

the, to, to avoid any...□

possibility of□
physical seizures or...□

disturbances with people,□

it's probably worth looking at...□

the regulations,□

in terms of what frequencies□
to be using for animations.□

There are...□

methods for testing these.□

Obviously looking□
at them, be one,□

But you can actually set up...□

in...□

you know programmic...□

So in a programming sense,

you can actually set up…

measures where you can see how

many times they're
actually moving,

in a particular second.

So that is worth considering,

and keeping within
the guideline…

figure, sorry, what's the…

I think it's like seven or eight
times a second, or something.

[Narelle] It's more than
three times a second.

[Narelle] You need to set it to that.
[Mark] You need, yeah.

[Mark] So you want

to make sure that…☐

Yeaj, you want to☐

make sure that that's☐

what's happening with animations.☐

If you go that…☐

And a lot of people tend to☐

still like to use an, animations☐

for their presenting☐

of their, you know,☐

their products.☐

So, it's just something☐

that we need to…☐

take into consideration when☐

we're testing in the operability.☐

[Narelle] That's it.☐

Mark, the fourth guideline☐

of operability is navigable.☐

And this is such□

a big one, isn't it?□

[Mark] Yeah, this comes back to…□

to what we were saying□

earlier, with the keyboard.□

Having the ability to□

actually navigate from…□

one part to another on□

any particular web page…□

using a keyboard,□

but also with□

assistive technology,□

because there are methods…□

that assistive□

technology provide users□

to actually navigate from parts…□

to other parts.□

And from one web□

page to another,□

and it's a case of making□

sure that, you know,□

that buttons are buttons,□

links are links.□

[Narelle] Headings are headings.□

[Mark] Headings are headings.□

This is done through styles,□

that when you hit enter□

you actually activate a button□

or a link if it is meant to be,□

that if something□

is meant to be…□

a clickable item,□

that it is represented…□

in a way that□

assistive technologies□

will be able to pick it up□

and convey that information□
to the user of that…□

assistive technology software.□

So for instance, a□
screen reader will say,□

you know,□

clickable, and it might□
say the name of the item,□

just to, to allow the□
user to know, hey,□

you can actually hit enter on this,□

and this will provide□
a certain function□

So they're um, they're important.□

So that's all part□
of that navigation.□

And also…☐

making sure that heading☐
levels in, are actually☐

in, are in accordance☐
to each other,☐

so you don't have…☐

a heading level one and a heading☐
level three followed after.☐

I think we were talking☐
about this last week.☐

But, yeah, there☐
are some sort of…☐

There is a sequence☐
that it follows.☐

So you have your heading level☐
threes under heading level twos,☐

and then heading level twos.☐

So there is an…☐

order to things when□

you are looking at that.□

[Narelle] And the□

big thing with that,□

that people need□

to remember as well,□

and it's not just that, it's□

reading order is important.□

And the other thing is focus,□

because when you've got a□

lot of information on a page,□

a lot of fields,□

you want to be able to□

find visually where you are.□

And one of the things was□

just make your focus a box.□

Consider your contrast rules,□

and make the box□

width, border width of the□

box three pixels at a minimum.□

Let people work out where□

they are visually quickly,□

instead of at times,□

you've got a tab□

backwards and forwards,□

or work out where you are.□

There's a lot of issues in there□

that can cause some types of…□

problems for□

people, isn't there?□

[Mark] Yeah. That's right.□

So if you want to make sure that□

there is a really distinctive…□

way to actually know□

where the focus is moving to.□

And I think that, I mean□

a highlight for that is…□

So if you're using□

assistive technology,□

or you're helping somebody□

with assistive technology…□

use a particular website.□

You want to know where they are,□

and whenever they're□

using their keyboard,□

or their assistive technology□

to actually navigate that,□

you want to be able to see…□

where that focus is□

actually moving to.□

[Narelle] Yeah.□

[Mark] It's one thing to□

use a mouse to do that☐

which it should be able to.☐

And it goes the other way too.☐
If somebody's using a mouse,☐

you want the screen reader to☐
actually☐

often read the information,☐

and that's, that's☐
really dependent☐

on the assistive technology itself.☐

It's not something☐
that is required by…☐

a website to have,☐

but you want that☐
to actually work…☐

in that way as well.☐

If I'm working with you, Narelle,☐

and you're moving your mouse,□

I can actually tell,□

by the screen reader telling me,□

what you're on or□
what you're focused on.□

[Narelle] Yeah. And that's it.□

Mark, the last one is one that,□

again, I don't think□
people think enough of,□

and that's input modalities.□

We're talking about how…□

the options that people□
are given to input data into…□

a form on a website or… a PDF.□

It's a huge problem that one,□

because one of the issues□

I often see is no labels,☐

using placeholders only,☐

and that is really bad practice.☐

[Mark] I think the other☐
one I noticed is the…☐

various date pickers.☐

[Narelle] Yes.☐
[Mark] Filling in calendar…☐

[Mark] Filling in dates.☐

They're often difficult, and☐
then they're not accessible.☐

So it's one thing to have…☐

a valid or validation☐
process for input of data,☐

but you need to☐
make sure that that…☐

is also accessible,☐

so that you actually

do get the valid data,

and that the input

is actually correct.

[Narelle] But it could even

be putting things like tips,

like what format you want the

date in in the label as well.

[Mark] And that's

all to do with…

messaging.

Putting the right

messaging in the, in the …

in the forms as well.

Making sure that…

that, you know, it's

one thing to actually…

encourage correct

and valid data,

but you need to also state…

what that correct valid

data should look like.

[Narelle] It's garbage

in, garbage out, isn't it?

If you don't tell

them how you want it,

you probably will get garbage,

which means it will take time

to fix the garbage,

or verify the data.

[Mark] Yes. Yep.

[Narelle] In the end,

that's another cost of, to

the business, isn't it?

[Mark] Long-term

wise, it could be…

detrimental for anyone collecting

data for their business,

because you're not going

to get the right data that you…

will be able to analyse,

and often that could lead to…

some ill-informed decisions.

When it comes down to it.

And, you know,

often you'll find

yourself chasing up…

information that should

have easily been…

acquired had, had inform,

had the messaging…

conveying what was

required was, you know,

part of that form

that it's setting up.

So yeah, there's

a whole lot to this.

It's…

Yeah, the hints and

the help, tags, and…

I mean, they're all

part of it, but it's also…

when you validate data,

you need to make sure that,

you know, if there's an error,

the user is actually

understanding what the error is.

[Narelle] Yeah. That's it.

That's part of the principle of

an understandability though.□

[Mark] That's right. That□
comes into that third principle,□

which we'll need to talk about.□

[Narelle] We will.□

So, operability, Mark, it…□

it can be a real mind□
trap for people, can't it?□

[Mark] Look, if it's done□
correctly, and it's done well,□

it's actually…□

not that difficult,□

And it's one of those…□

For me, it's one of those…□

It's one of the□
easiest principles,□

because it makes sense.☐

If you look for,☐
through the four or five…☐

sections…☐

for operability,☐

it makes sense.☐

And if you, if you develop…☐

and put the…☐

the, the right☐
measures into play☐

at the time of development,☐

it, it, it often will be…☐

something that just☐
flows on whenever☐

you make any updates in the future.☐

So, you just need to…☐

When you get to the stage of

designing and implementation,

you need to just

take in operability,

if anything, in accessibility,

the operability

principle needs to be…

part of that…

implementation and design phase

of the software life cycle.

[Narelle] Thanks, Mark.

Look, thanks for

your time today.

Mark, how can

people keep getting,

chatting with you about it,

to find out more

about operability,□

and everything about WCAG?□

[Mark] Put our email address up.□

[Narelle] Yep.□

[Mark] It's□
reception@dasat.com.au.□

Yeah. And go to the website,□

DASAT.com.au.□

And...□

all our contact details□
are there as well.□

[Narelle] Thank you.□

So this is another episode□
of The Digital Access Show.□

And operability is a□
very important principle□

because, really,□

it can kill a website.□

If it's not done properly,□

a website can not be a□

usable, accessible document.□

So, if you like what we do,□

please like, share,□

subscribe, we'd love a review.□

Comment on our work.□

Absolutely love it.□

And we'll see you at the□

next Digital Access Show.□

Bye, bye.□

[music playing]