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Device Upcycling in London

2022 Report

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Foreword

Digital exclusion and social exclusion are inextricably linked. But it wasn't until the COVID-19 pandemic, when 'locked down' came also to mean 'locked out' of access to online services, that digital poverty made its way into our collective consciousness.

There are incredibly high entrance fees to living in the digital sphere – which is particularly difficult for lower income families which are, ironically, the households that most need access to this world. Whilst for many people a device – a laptop, tablet or mobile phone – has become an everyday commodity, there are tens of thousands of households across London, and millions in the UK, in which a new device is considered a luxury with a price-tag that is out of reach.

This report, developed in partnership with LOTI, explores a tangible solution to this market failure. It shows that the answer to device poverty is already within our gift. That supply can exceed demand. That the social and environmental benefits of the circular economy can be applied to digital equality with great effect in London.

"I welcome the report and trust its legacy will be as part of a concerted effort to close the digital divide for good."

Chris Ashworth,

Head of Social Impact at Nominet and member of Greater London Authority Digital Taskforce



Introduction

The research that is covered in this report focused on the recycling of retired digital devices in London by local authorities, public sector bodies and companies. It also looked at the structure and capacity of the device recycling sector to process and distribute them.

During April and May 2021, we undertook desk research, conducted 15 interviews with 20 individuals, and administered two surveys — one to companies and the other to public sector bodies in London.



Common terms

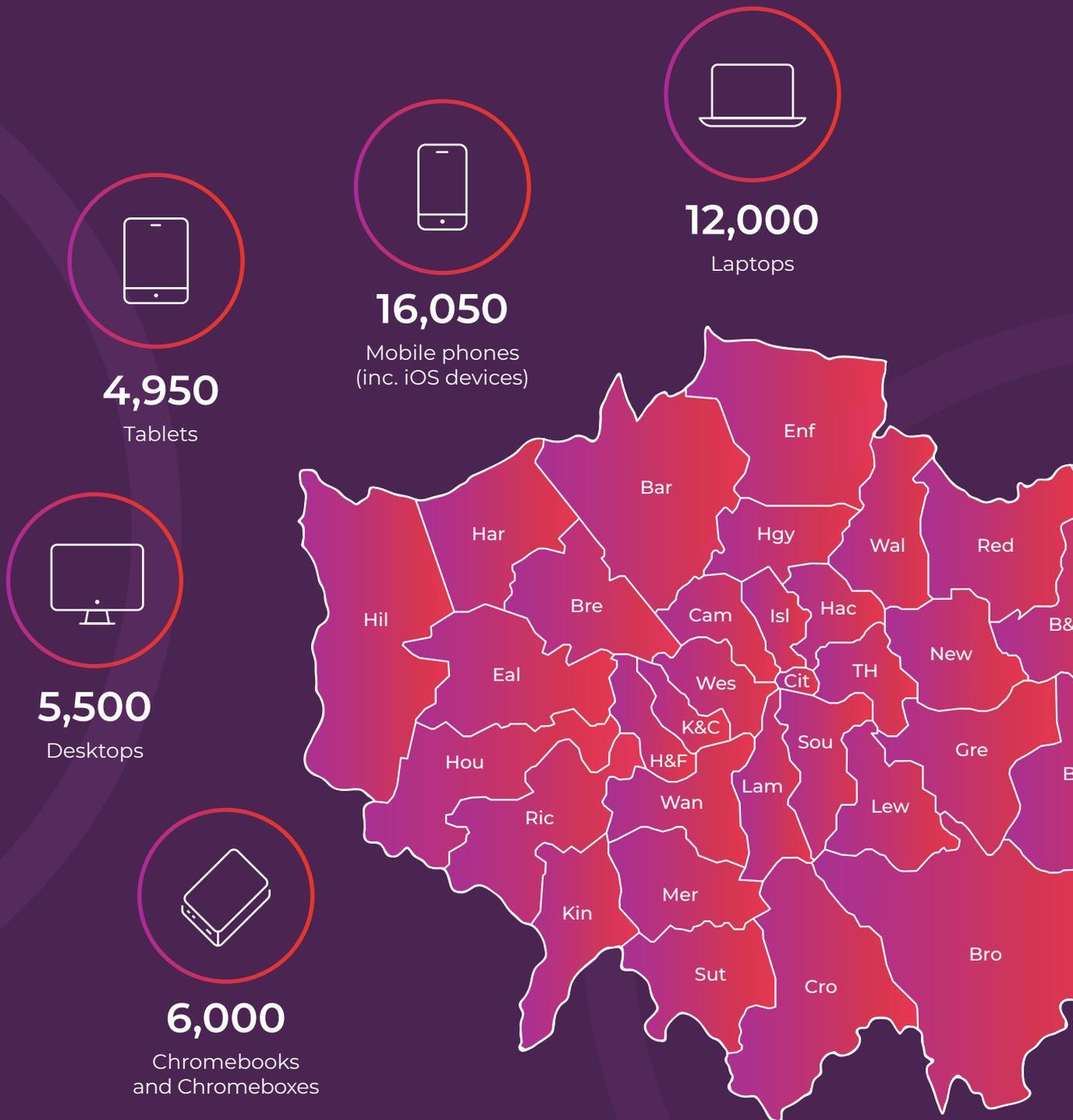
For the purpose of this research, we define digital devices as mobile phones, laptops, tablets, desktops, Chromebooks and Chromeboxes.



This research was funded by Nominet and conducted on behalf of the London Office of Technology and Innovation (LOTI) by freelance researcher Ruth Puttick in April/May 2021.

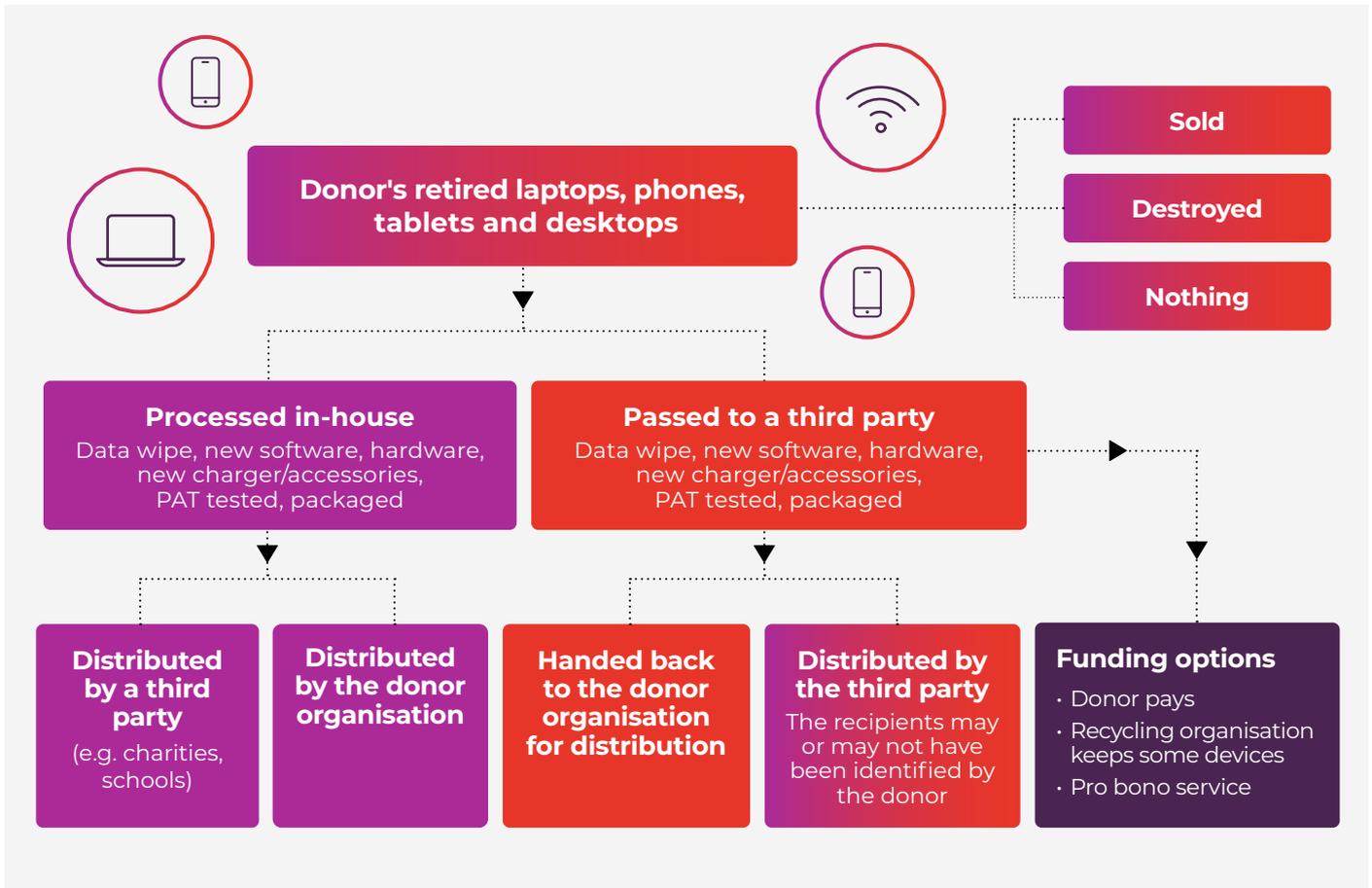
The scale of device retirement in London

The total number of devices across three boroughs and four public sector bodies being retired in 2021 is shown below.

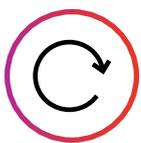


The figures would have been substantially higher if all London boroughs had been included and if the private sector had been engaged.

What happens when digital devices are retired?



Our research found that devices take one of four routes when retired by a company or public sector organisation.



1. Upcycled

Devices are cleaned, software and/or hardware may be upgraded, and the device is reused. This process may be undertaken in-house or by a third party. The average cost per device is about £60.



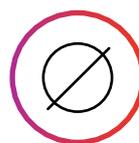
3. Destroyed

Devices are shredded and certain elements, such as precious metals and plastics, may be separated, but the majority of the device goes to landfill. This process is typically contracted to a third party.



2. Sold

Devices are sold to a contractor who will refurbish and sell them to a private seller. The proceeds of this are often used to buy replacement IT equipment.



4. Nothing

Devices are retained in-house and stored.

Summary of findings

Hypothesis	What we found
<p>1. London could significantly increase the number of devices that are available to benefit digitally excluded people by reducing the barriers to upcycling of retired devices from the capital's major corporate and public sector organisations.</p>	<p>Yes, London could significantly increase the number of devices it makes available. For all the public sector organisations and companies we spoke with, there was an appetite to upcycle devices. Some already upcycle devices but it is relatively small scale and there is willingness to ramp it up.</p>
<p>2. Only a minority of retired devices from London's largest corporate and public sector organisations currently go for upcycling.</p>	<p>Yes, only a minority of devices are upcycled. The vast majority of devices are sold, scrapped, or put in a cupboard. There are few public sector organisations with device retirement plans in place that have provision for upcycling all their devices to benefit disadvantaged Londoners.</p>
<p>3. A significant number of those retired devices could, in principle, be upcycled.</p>	<p>Yes, a significant number of retired devices could be upcycled. However, resources will need to be available to fund the necessary refurbishment, upgrades, and the logistics of collection and distribution. Furthermore, there will need to be exploration of the spec and condition of these devices and what their future use could be. This will involve "matching" donated devices to user groups. Upcycling is only valid if someone is going to use the device.</p>
<p>4. There is sufficient capacity in the device upcycling sector to clean, data wipe and make usable (e.g. through adding current software) thousands of extra devices if they could be provided by corporates and public sector organisations.</p>	<p>Yes, there is capacity in the upcycling sector and a willingness to take on devices. There are numerous initiatives, programmes and companies dedicated to device upcycling. But the reason more devices are upcycled is not simply a lack of devices nor a lack of recycling company capacity it is a disconnect and lack of awareness in organisations about how to distribute upcycled devices and who they should go to.</p>
<p>5. The cost of device Upcycling could be reduced through greater economies of scale.</p>	<p>Indicatively, more devices, and more of the same type of device, could result in greater economies of scale. However, at this stage, it is not possible to establish how the cost per device will change without knowing more about the device type, numbers, conditions, and so on. There is also huge variation in what organisations charge for upcycling and distributing devices. But it is clear that there are benefits to London organisations — both public and corporate — sharing current practice and experiences and having access to example/model internal guidance, processes and procedures to aid upcycling and donating devices, which others could use and emulate.</p>

Summary of recommendations

This section summarises the recommendations for LOTI and its partners on how to increase the number of retired devices made available to digitally excluded Londoners. Under each recommendation, there is more detail and, in the boxout, suggested next steps in order to progress the work.



1. Make it easy: Create an organisation or programme tasked with device recycling and distribution

The main barrier to recycling devices for companies and public sector bodies is that they lack the knowledge about how to upcycle, and they don't have the capacity to take this on in-house, or the permission. There is a need for a London-wide scheme that can act as the conduit for the donation, recycling and distribution of devices, and be the go-to resource for organizations who need help and guidance.

This is not a one-off exercise, companies and the public sector will continue to refresh and retire devices for years to come.

It is also important to emphasise that the lack of devices donated for reuse by disadvantaged Londoners is not because of a lack of information. There is lots of guidance, such as how to wipe a device, or lists of organisations who accept donations. But this isn't enough. Device upcycling is not part of anyone's core job - either in the public or private sector - and the burden, responsibility and ownership needs to be taken on somewhere, so that organisations can simply hand devices over.

The rest of the recommendations follow on from this starting point.

Next step #1:

Explore the creation of an initiative or programme, or potentially an organisation, which can be the focal point, conduit and go-to resource on device upcycling. However, they may not manage the process end-to-end, and may subcontract elements out to existing organisations working in this space, such as through a framework agreement.

Next step #2:

Estimate what the associated costs would be. Can this organisation fund the end-to-end process? Do donors need to contribute financially?

Next step #3:

Explore partners and collaborators, including donors, funders, and logistical partners.

Summary of recommendations

2. Minimise the risk for donor organisations and make clear what happens to devices

Any future device upcycling initiatives need to ensure any internal barriers or concerns are addressed to make donating devices easy for organisations.

The most common answer when we asked about barriers to upcycling digital devices was that organisations did not know how to upcycle retired devices to benefit digitally excluded Londoners.

They felt there was a lack of clear guidance available to outline the process, and for them to share with colleagues in order to imbue confidence in how devices and data were to be securely handled. Organisations also found it time consuming to set up internal processes.



Next step #4

- Share and agree policy and accompanying guidance on device upcycling to give London organisations the information and reassurance they need.
- Explore developing a draft SLA/MoU to help organisations understand what is involved in donating devices at a partnership level.
- Develop a standard process for all devices, which includes:
 - Clear rules on data wiping, including certification
 - Guidance on PAT testing
 - Agreement that donors are not responsible for devices once they are donated (i.e. they bear no responsibility for future disposal, damage, failure, injury, etc.).

Summary of recommendations

3. Engage senior leaders / CEOs in public sector bodies and companies

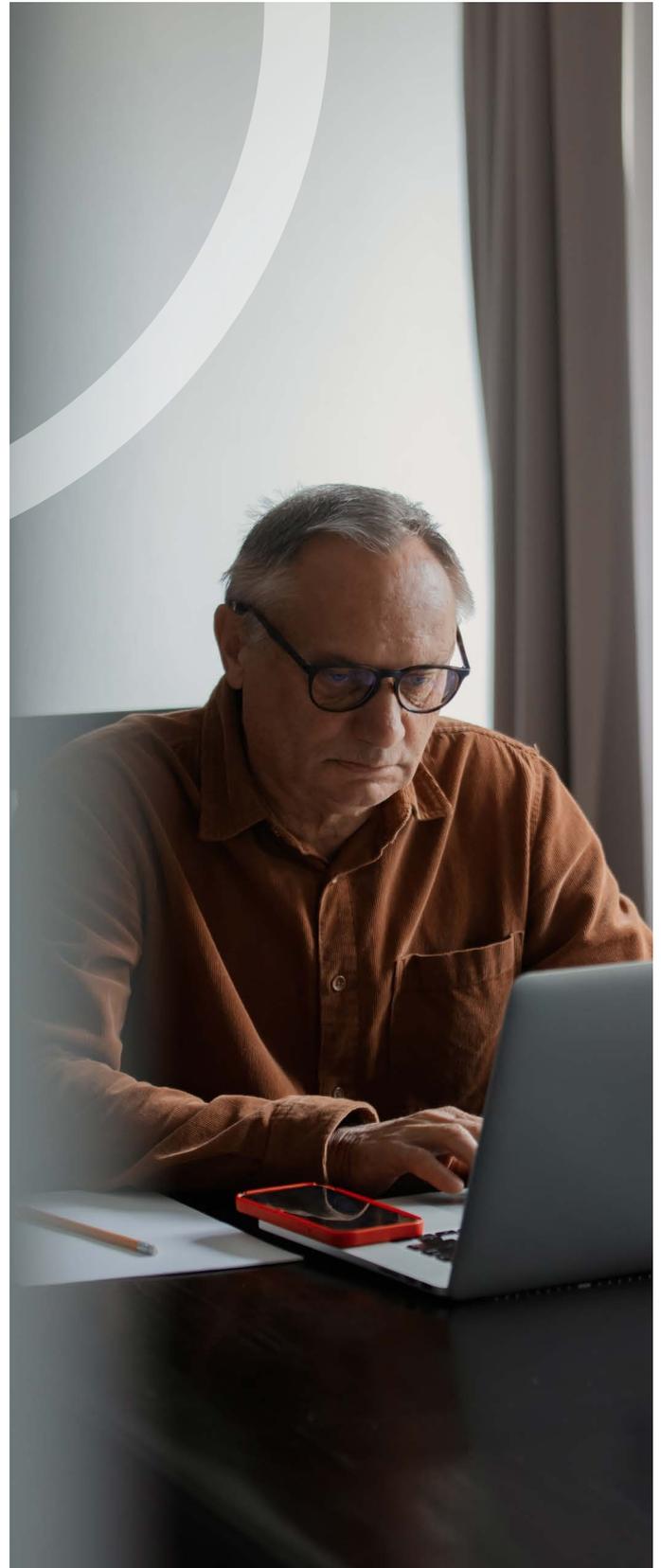
Device upcycling and distribution is typically an extra part of someone's role or, in some cases, a "hobby". It is rarely, if ever, a core part of their job description.

Linked to this, employees feel like they do not have appropriate "cover" or sign-off responsibility to donate devices from their organisation.

For device donation and upcycling to become the norm and for someone to be given overall responsibility for this programme, senior leaders must be on board.

Next step #5

- Promote the campaign and showcase those who donate.
- Consider using a league table to show those who do it well and those who do not (although this could be controversial!).
- Ask companies and public sector bodies to pledge devices. This will help signal who is doing it and help manage the flow of devices.



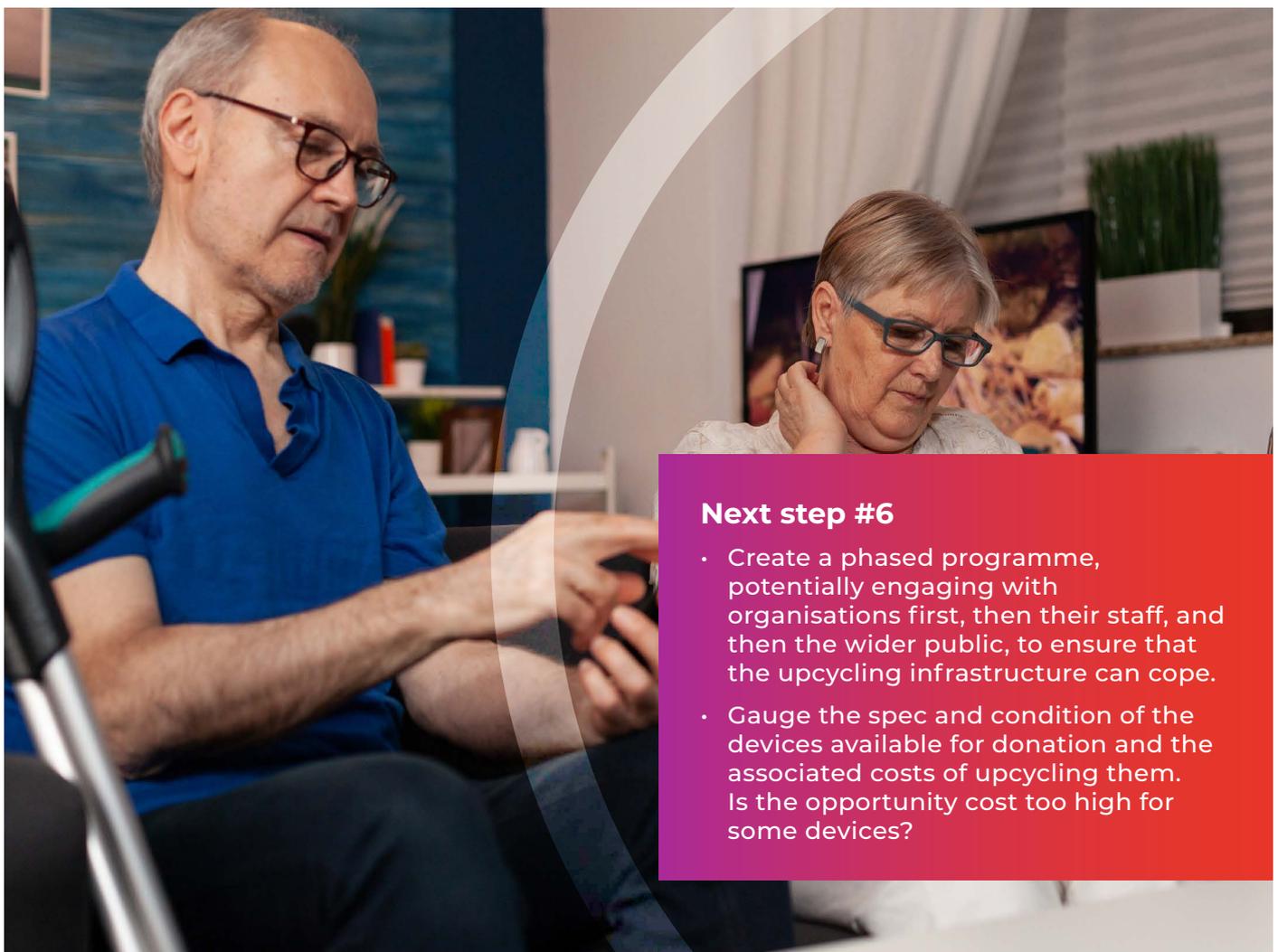
Summary of recommendations

4. Increase the number of devices available and engage both corporate and public sector organisations, their staff, and the wider public

The overwhelming response we received in our research, both with corporates and the public sector, is that they have retired digital devices, that there is a willingness to make them available, but they don't know HOW to do this.

They require guidance and reassurance about the process. Another opportunity available to LOTI and its partners is to source devices from the public, either by upcycling personal devices from the staff within organisations, or collecting devices directly from the public.

The willingness of the public to donate devices is beyond the scope of this study, but there is potentially an untapped reserve of devices, with an estimated 700 million devices across Europe which are unused and 'hibernating' in households.



Next step #6

- Create a phased programme, potentially engaging with organisations first, then their staff, and then the wider public, to ensure that the upcycling infrastructure can cope.
- Gauge the spec and condition of the devices available for donation and the associated costs of upcycling them. Is the opportunity cost too high for some devices?

Summary of recommendations



5. Create device drop off locations in London to make it easier for organisations and individuals to donate devices

To increase the amount of donations from the public, drop off locations could be created. This would make it easier to collect devices, potentially reduce transport costs, and utilise existing infrastructure. These locations would need to be secure.

There is a possibility that the devices donated will be of low quality and a cost may be incurred to upcycle and/or dispose of them. The screening of devices and the associated opportunity cost of upcycling them would need to be factored into any future programme.

Next step #7:

- Explore how public locations, such as train stations, could be utilised as device drop off hubs.

Next step #8

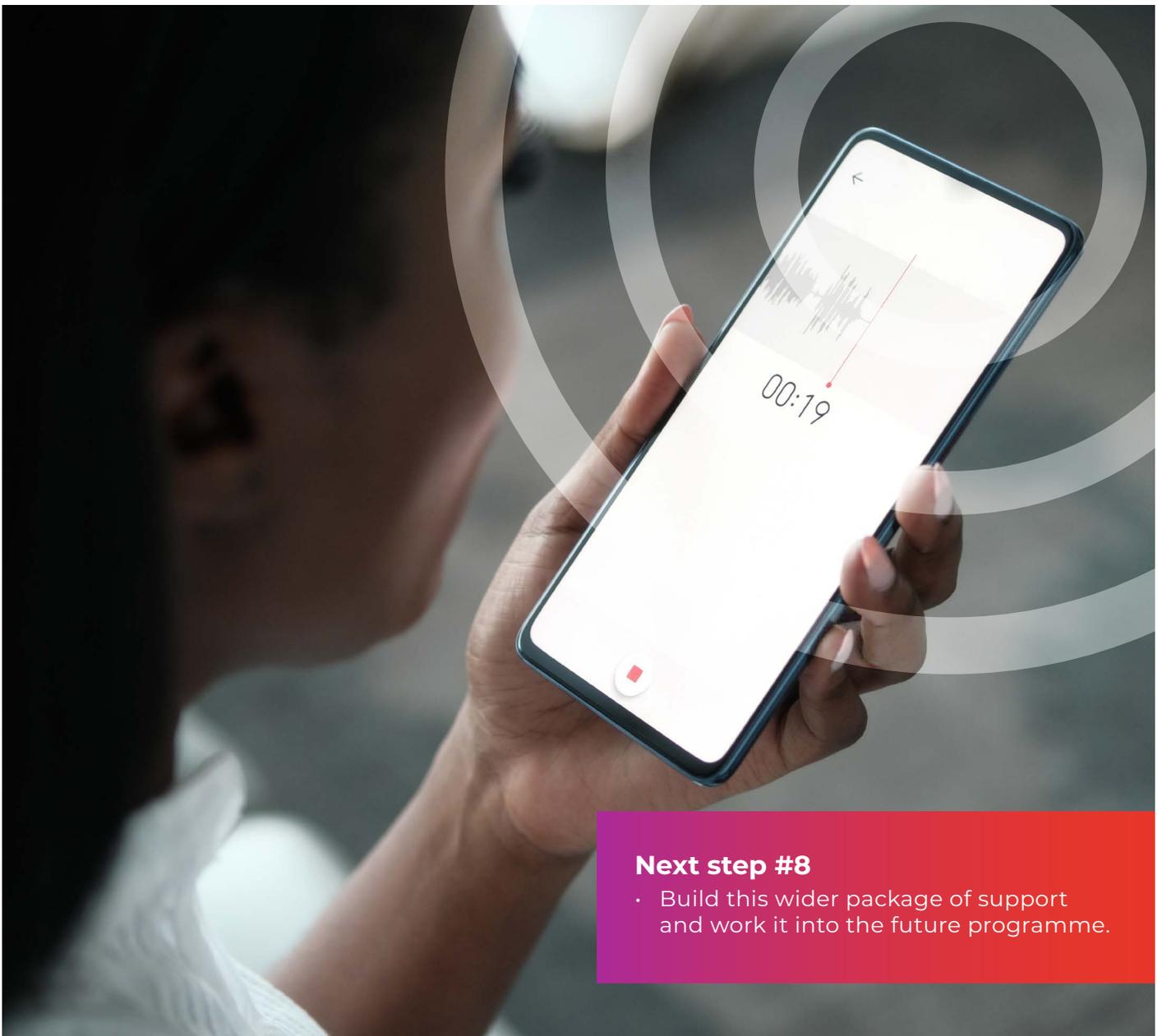
- Consider the environmental angle. If the devices cannot be used, could the precious metals be stripped so they do not go to landfill? A upcycling partner could help with this.

Summary of recommendations

6. Do not just give the devices – provide support and connectivity too so they can be used effectively

Donating devices is just the starting point. Alongside the device, ensure that there is detailed guidance on how to use it and potentially even a phone line to answer queries.

Ensure the device has connectivity, which might involve providing data/internet access for a certain period of time. Some advocate providing a guarantee/warranty and replacing faulty devices.



Next step #8

- Build this wider package of support and work it into the future programme.

Summary of recommendations

7. Match devices with the end user and have a minimum quality threshold

How devices reach the end user is often the biggest challenge for donor organisations. There are organisations that can distribute them but thought is required as to what the end user wants and needs.

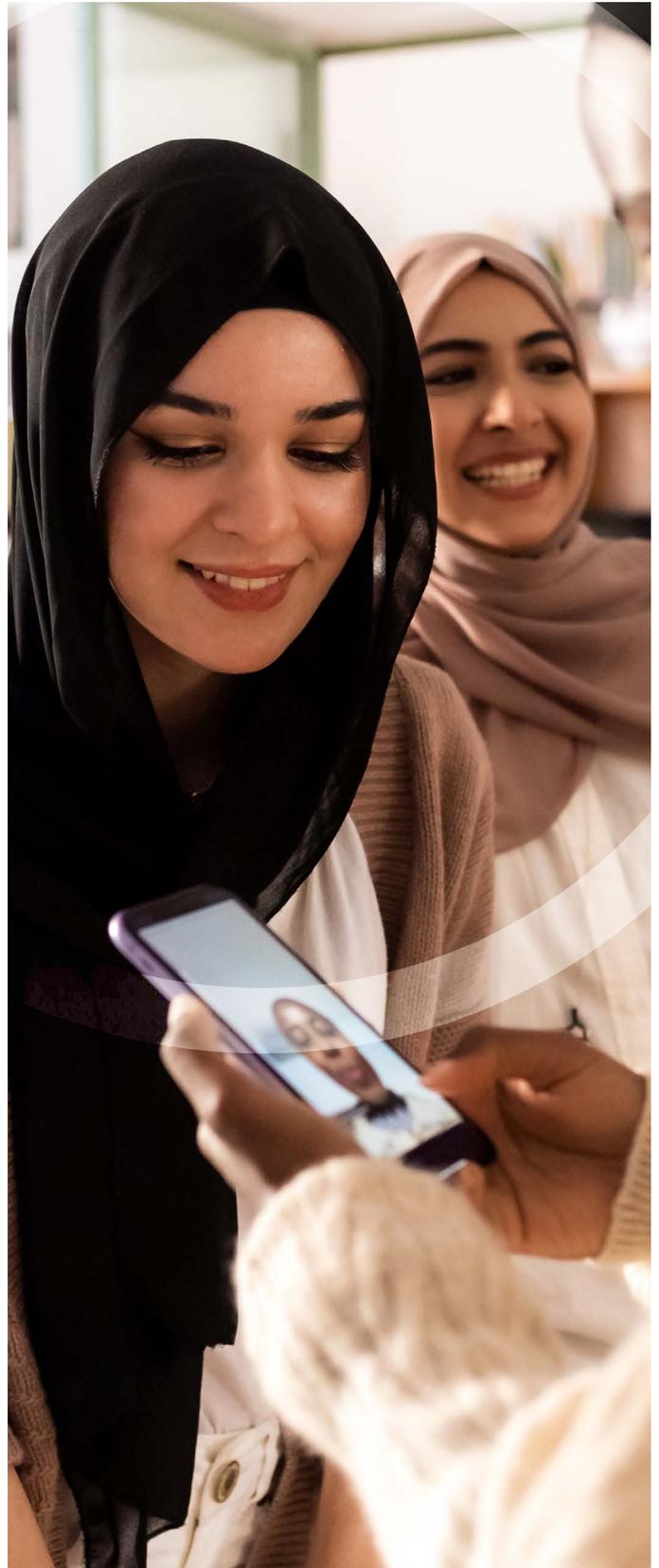
Important questions include: How will they use the device? Is it for in-school learning? Home learning? Paying bills? Gaming? Will the donated devices meet this need? Is the device going into a school? Should there be standardisation on what is provided? Does this mean offering a high volume of the same device?

There should be an agreed minimum quality standard, both performance, and condition. This may need to be flexible and change depending on who is receiving the device. For example, some schools may have IT assistance that can repair a cracked screen whereas other end users will require a fully refurbished device. Some users may require the technology to assist with home learning or gaming whereas other individuals may need a device to pay a bill.

It's worth noting that IT professionals often had a more discerning view of what a "good" device looked like, compared to those working in charities who distribute devices to those who need them. What a good device looks like is very subjective.

Next step #9

- When devices are received, they should be assessed to identify potential uses and users. This will be an iterative process. Could an API be set up for donors to pledge and organisations to request these?

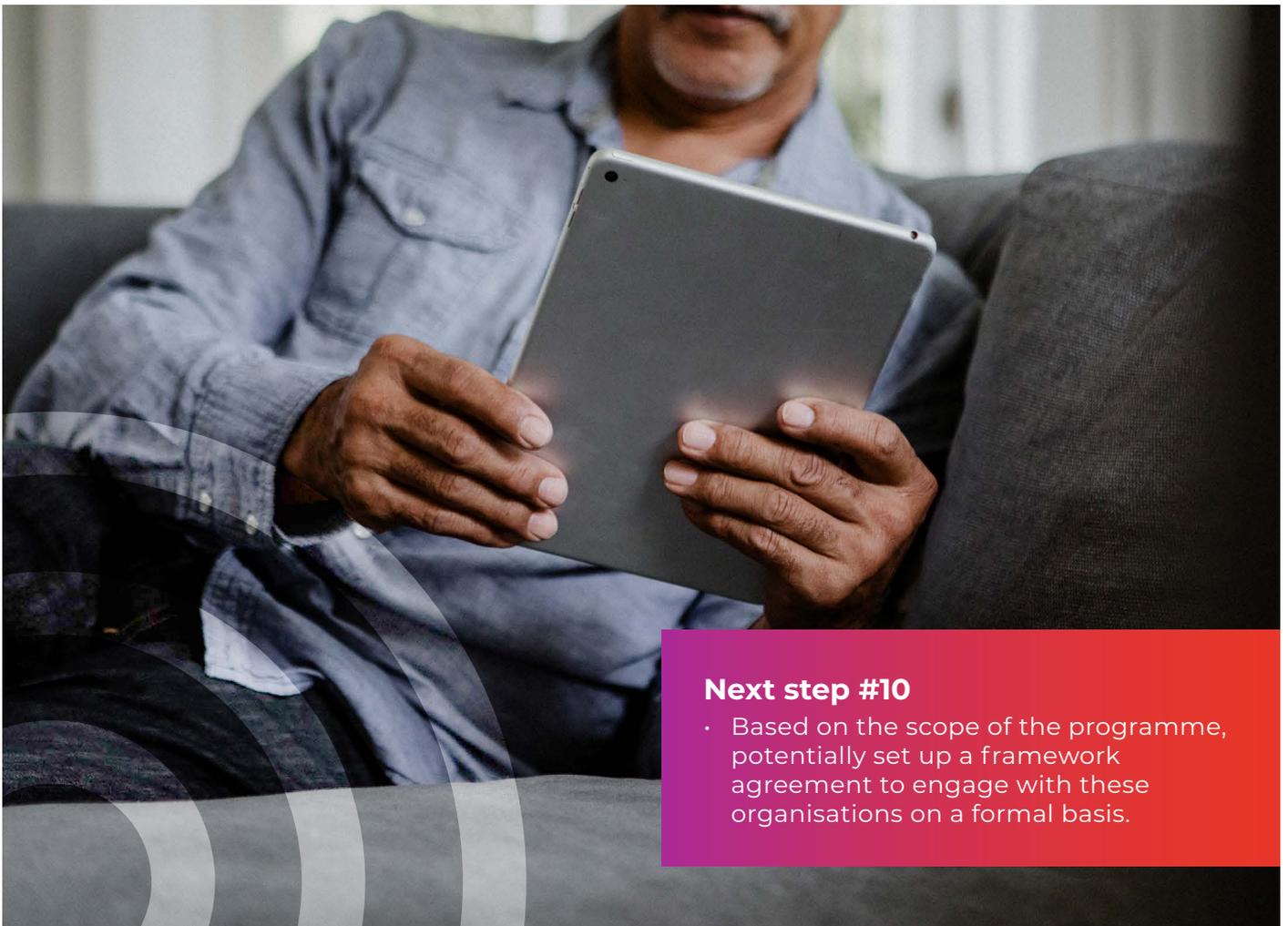


Summary of recommendations

8. Make the most of the existing infrastructure of upcycling providers, including corporates, social enterprises and smaller community initiatives

There are lots of existing initiatives and organisations in this space. These could help with the logistics of transporting devices, upcycling and/or distributing them.

These existing organisations and networks may also know which individuals need digital devices within a certain community.



Next step #10

- Based on the scope of the programme, potentially set up a framework agreement to engage with these organisations on a formal basis.

9. Make the initiative UK-wide

Once the initiative has been established, put London on the map and ramp up interest by syndicating the model in other cities.

London could potentially be the first city in the UK — if not internationally — to have a city-wide,

end-to-end process for upcycling digital devices.

This would ensure that digitally excluded people across the country would benefit from the associated economic and social impacts and also make the most of precious metals for future use.



About LOTI

The London Office of Technology and Innovation (LOTI) was established in July 2019 to help its members (currently 21 London boroughs, the Greater London Authority (GLA), and London Councils) to collaborate on projects that bring the best of digital and data innovation to improve public services and outcomes for Londoners.

Read more at: loti.london



About Nominet

Nominet is a public benefit company, driven by a commitment to use technology to improve connectivity, security and inclusivity online. For 25 years, Nominet has run the .UK internet infrastructure, developing an expertise in the Domain Name System (DNS) that now underpins sophisticated threat monitoring, detection, prevention, and analytics that is used by governments to mitigate cyber threats. Our social media programme provides funding, support and opportunities to help tackle some of the most important digital issues facing young people in the UK today.

Read more at: nominet.uk
