

Repair data collection tips and tools

An examination of data recording practices at repair events

Contributors: Monique Szpak; Neil Mather

[Why collect repair data?](#)

[What data to record?](#)

[Who records the data?](#)

[What happens to the data after an event?](#)

[Ways to record data](#)

[Paper forms](#)

[Overview](#)

[Pros](#)

[Cons](#)

[Example](#)

[Possible workflow](#)

[Flipcharts](#)

[Overview](#)

[Pros](#)

[Cons](#)

[Example](#)

[Possible workflow](#)

[Spreadsheets](#)

[Pros](#)

[Cons](#)

[Example](#)

[Possible workflow](#)

[Digital forms](#)

[Overview](#)

[Pros](#)

[Cons](#)

[Example](#)

[Possible workflow](#)

[Custom software platform](#)

[Overview](#)

[Pros](#)

[Cons](#)

[Examples](#)

[Possible workflow](#)

[Audio recording](#)

[Overview](#)

[Pros](#)

[Cons](#)

[Additional tools](#)

[Photography](#)

[FAQ](#)

[Isn't using paper forms / flipchart a bad idea?](#)

[Why doesn't everyone just use the same system?](#)

[APPENDIX A : Tools](#)

Why collect repair data?

Data on the things we're trying to repair and our successes and barriers can be useful at the individual level, at the local level, the regional level, and at a global level.

Repair groups often start to collect their own repair data organically – it can be fun and motivating to reflect on the successes of your group, and can also be helpful for funding applications. Repair-related data points such as the types of items seen and whether they were fixed or not are often collected by groups. Groups often collect demographic information that helps them see who they are helping in their community.

Repair groups are often part of a larger network of groups. Repair data can be of use at this network level. The network of groups often have the same interests and uses of the data as the individual groups themselves, but at an aggregate level across the network.

Further, repair data is pooled globally by the Open Repair Alliance. At this level, the aim is to feed the repair data into policy discussions on the importance of repair and the right to repair. Information that might not be obviously or immediately useful to a single group – such as age of items, common fault types, and the barriers to repair - can be useful in policy discussions. See [goals and use cases](#) of the Open Repair Data Standard, as well as [the use cases of each field](#) for more information here.

The data can be interesting and of use to individual repairers, too. For example, [insights from the data](#) can show a repairer the successful fix rate of the category of item that they are trying to fix, and it can show the common fault types for various types of product. Experience of common problems seen by community repairers can be fed into shared knowledge bases for community repair. Individuals may also be interested in their own personal repair success rates, too.

What data to record?

The [Open Repair Data Standard](#) defines a standard set of information that is collected by the Open Repair Alliance. This information is primarily for the purposes of feeding analysis of the data into policy discussions. Groups and networks often collect additional information for their own needs.

Who records the data?

Various people involved with a repair group could participate in collecting the repair data and digitising it. They might already be volunteering in another role for the group, or they might be dedicated to data collection.

- The organisers/hosts
- The repairers
- Visitors
 - The people bringing their items to repair
 - They could be given questions to ask the repairer and have them fill in responses, e.g.
 - What is the model of my device?
 - What do you think is wrong with it?
 - Can it be fixed?
 - Does it need a spare part?
 - Is the spare part available?
 - Is the spare part expensive?
 - Is it worth fixing?
 - How will you fix it?
 - What did you do to fix it?
 - Is it fixed?
 - Why could it not be fixed?
- A data volunteer
 - Someone whose role it is to just collect data at an event could provide better data and take pressure off fixers/hosts/participants
 - Engage local students interested in digital skills, product design etc.
 - As well as collecting data, they could be interested in the data input, analysis and presentation
- An interviewer
 - Form filling
 - Audio recording of repairs
- A photographer
 - Imaging of devices, brand/model labels.

What happens to the data after an event?

This will depend largely on the organiser, the network that the group belongs to (if any) and the method of data recording. Partners of the Open Repair Alliance process the data digitally and it either ends up in a database or a spreadsheet. Periodically they provide the data for processing using the [Open Repair Data Standard](#) for publication.

Ways to record data

There are various ways in which different community repair groups collect repair data, including flipcharts, paper forms, spreadsheets, digital forms, and bespoke web applications built for repair groups. There is no one-size-fits-all solution - each has its suitability in

different contexts. Methods are often mixed and matched. We document here the different approaches we have seen, possible approaches for implementation, and thoughts on positives and negatives.

Paper forms

Overview

This is a common approach for a lot of groups.

Paper forms, usually A4-sized, are filled in with the repair information. The forms are designed on a computer and copies are printed or photocopied and brought to repair events.

They might be filled in by the visitor, the host at reception, or the repairer - and frequently some combination of the above.

Pros

- Simple to create and use
- Data collection can feel more personal
- Can be easily passed from person to person
- No internet connection required during an event
- Easy to transport and file

Cons

- Requires time to digitise
- Handwriting can make it difficult to read
- Can get lost/damaged
- Easy to skip fields or provide data in an incorrect format
- Time/cost involved in changing the format
- Not easy to associate photographs to items

Example

Recording your repair helps us measure our impact and make a stronger case for more repairable products in the future. Thank you!

Your repair

1. Describe the item

What type of item is this?
(e.g. toaster / laptop / jeans...)

KETTLE

How old is it?
(an estimate is fine)

4.5 year(s)

What brand & model is it?
(especially useful for powered devices)

Morphy Richards

How much does it weigh?
(only for unpowered items)

1/2 kg

2. Describe the repair

What is/was the main problem? (give as much detail as you can)

Won't switch on any more

What was done to fix it? (include any barriers to repair or next steps)

Found bent electrical contact & bent back into place.
PAT tested. FIXED!

What was the outcome?

☒ Fixed today
☐ Repairable

Were any spare parts needed?

☐ Yes (from manufacturer)
☐ Yes (from 3rd party)
☒ No

For more information and a template see [Paper form design for repair data](#)

Possible workflow

- At reception, host asks visitor to fill in a sheet while waiting for a repairer
- Reception keeps track of who has registered, assigns visitor to repairer when available
- Visitor takes sheet to repairer
- Visitor and repairer records details of the repair while working on it together
- Visitor returns sheet to reception when leaving

Flipcharts

Overview

Visitors and their items are recorded on flipchart paper somewhere prominent at the repair event, usually the reception area. Basic information about the visitor and item/s are recorded on arrival and the outcome/s recorded after the repair attempt, when the visitor is leaving.

Pros

- Large and visual, creates a focal point
- Can help with event/queue management by giving some immediate indication of the size of the queue, who's next in queue, etc

Cons

- All data must be recorded by a host/data volunteer at reception
- Bulky to transport and store
- Relies on the host/data volunteer being free to write enough incoming information while at the same time handling the queue and the people leaving
- Relies on the host and visitor being familiar with terminology related to the item and the repair
- Not much space to record information, soon gets messy
- Host has to draw one up for each event, structure often changes
- Hard to associate photographs to items
- Requires digital recording after the event

Example

Name	Item	Problem	Resolution	Fix
Catherine	iPad	Digitiser Cracked	Force	✓
Mike	Toshiba Laptop	Screen image problem	Screen/Force	✓
Patrick	Printer	No lights - nothing	David/John	✓
Anna	Food Processor	Lights work but no start	Advice given	lan (will try to get started next time)
Rebecca	Alba TV	Possibly blown capacitors (has brought photos)	Advice given	lan (will try to get started next time)
Rebecca	Antique lamp	Plug broken	Advice given	lan
Stefanie	iPhone 7s	Cracked screen	John	✓
Tasha	Laptop Sony Viao	Not working	Unlocked it!	Stephan
Andy	Vax Vacuum	No suction	Advice given (vacuum used)	Rebecca
Paul	Touch lamp	Turns on/off randomly	Re-vent!	Rebecca
Paul	Toaster	Bread left hot	remove all faulty parts	Stephan
Naomi	Fairy lights	Lights half working advice on how to make them work	Advice given	lan (will try to get started next time)
Kit	Touch Lights	Internet Cuts out & they flicker	Reboot, update!	lan
Mandy	iPad (not gay)	Possibly cracked!	Reboot, update!	lan
Farah	Food Processor	Temperamental!	Contact cleaner spray	lan/Tim
Rain	Panasonic Luvax Phone	Crackly		
Tim				

Possible workflow

- At reception, host/data volunteer asks visitor for basic information about their item and the problem with it
- Reception keeps track of who has registered, assigns visitor to repairer when available
- Visitor and repairer work on item together
- When finished, visitor/repairer report back to reception/data volunteer, who adds information to flipchart

Spreadsheets

Groups' first move into digitisation of their repair data often involve spreadsheets.

Spreadsheets might be the sole source of data capture, or might be used in addition to analogue data capture such as paper or flip charts, with spreadsheets being the means of digitisation after the fact.

There are many different ways of organising the spreadsheets. Groups might use one spreadsheet per event, or one spreadsheet with multiple tabs per event. They might have a spreadsheet per year. etc.

Pros

- Easy to create
- Easy to work with - most people have some familiarity
- Easy to add new fields
- Can use lookups to standardise the data recorded
- Can have some simple data validation
- Can work offline
- Can do simple data analysis within spreadsheets
- Can be used to implement some complexity e.g. enforcing rules and protecting specific areas from editing

Cons

- If recording data during an event, requires a device available
- 'Flat' structure - not ideal for recording e.g. multiple barriers to repair
- Not always easy to implement complex validation
- Not usually easy to implement conditional logic e.g. "Not fixed" -> please say why it could not be fixed
- Not usually easy to associate photographs to items within the sheet

Example

Repair cafe 10-03-2022

File Edit View Insert Format Data Tools Extensions Help

Last edit was seconds ago

100% £ % .0 .00 123

unrepairable

	A	B	C	D	E	F	G	H	I
1	category	weight	brand	model	age	problem	Please describe the problem with as much detail as possible.		
2	Toy	0.5kg	Science Club	Off Roader	5.00	Not able to assemble.			fault, front bumper tied or
3	Mobile	0.1kg	Doro		4.00	Unable to make calls but c			alled again
4	Sewing machine	2kg	Toyota	Metal Raceway	2.00	Uneven stitches.			wired speed control ped:
5	Vacuum	5kg	Unknown		6.00	New cable needed.	Power/battery	Fixed	New cable fitted.
6	Misc	2kg	Ryobi	Cordless	2.50	No power.	Performance	Repairable	New part needed.
7	Vacuum	5kg	Dyson	DC50	5.00	Poor performance.	Performance	Fixed	Cleaned out - working better
8	Food Processor	1kg	Tefal			Knob lost during house mo	Other	Fixed	New knob fitted.
9	Vacuum	5kg	Hoover	Quest	1.00	Loud rattling noise	Unknown	End of life	
10	Misc	1kg	Sun Joe	7072	1.50	Does not switch on	Performance	End of life	Motor damaged.
11	Misc	2kg	Marine	Stirling Power		No charge.	Performance	End of life	unrepairable
12	Vacuum	5kg	Zanussi	Compact	5.00	No suction	Performance	Fixed	Blocked fan
13	Vacuum	5kg	Zanussi	Compact	0.50	Not switching on	Performance	Fixed	Loose connection
14	Coffee machine	1kg	Nespresso		10.00	Not heating water	Performance	Fixed	Cleaned switch and stripped
15	Small kitchen ite	1kg	Nambola		2.00	Not spinning	Performance	End of life	Bearings seized up
16	Laptop medium	1kg	Fujitsu		8.00	overheating	Overheating	Fixed	Fan unit cleaned out, camer
17	Toy	1kg	Nikko		3.00	Bias - going in circles	Unknown	Unknown	Cleaned but still got bias.
18									

- [Google sheets](#) online and offline
- [Excel](#) online or offline depending on edition
- [WPS Office Spreadsheets](#) offline
- [LibreOffice](#) offline

Possible workflow

- *This is if a spreadsheet is used during an event. If it's for post-event digitisation (e.g. paper forms or flipchart), then another workflow has been used during the event.*
- Empty spreadsheet is created using a template

- Spreadsheet link or copy of spreadsheet is shared with fixers who provide their own laptops OR single spreadsheet is used by the host or data volunteer at the event
- Spreadsheet/s used either online or offline
- If multiple spreadsheets were used the host/data volunteer may collate the records to a single sheet

Digital forms

Overview

Various online platforms provide the ability to build custom digital forms. These can be used to record repair data and either allow for export of the data to CSV, or often allow feeding the data directly into a spreadsheet or a database.

Pros

- Consistency of data
- Ease of use
- Some data can be completed by the visitor in advance of the repair event
- Data is available in a digital format straight away
- Allows for some data validation
- Allows for some suggestion of data, e.g. dropdown lists
- May allow inclusion of conditional logic, e.g you selected "Not fixed" please say why it could not be fixed
- Some versions allow file upload, e.g. for images
- Some platforms allow data analysis on form responses

Cons

- Generally online only
- Some technical skills required
- Requires ongoing maintenance/updates

Example

Percentage (approximate)

Your answer

Repair status *

Choose

End of life

Fixed

Repairable

☐ Spare parts too expensive

☐ No way to open product

☐ Repair information not available

☐ Lack of equipment

☐ Too worn out

Problem text *

Your answer

☐ Send me a copy of my responses.

Submit

Clear form

- [Google form](#)
 - Pros
 - Consistency
 - Easy to use
 - Automatically populates spreadsheet
 - Collects email addresses
 - Cons
 - Online only
 - Often requires the consumer to have an email address
 - Ongoing maintenance/versioning e.g. changes to the standard with regard to input fields and reference lists
- [Office365 form](#)
 - Pros
 - Consistency
 - Can automatically populate own database
 - Can use offline with some technical high-jumps
 - Cons
 - Paid subscription
 - Technical prowess required

- Ongoing maintenance/versioning e.g. changes to the standard with regard to input fields and reference lists

Possible workflow

- A) At the event the host/fixer/data volunteer and/or visitor is presented with a digital form on a tablet/laptop and will enter the details of the item and the repair
- B) Prior to the event, visitor completes form describing the item they would like to bring
- At the event, the host/fixer/data volunteer finds the visitor's completed response in whatever backend solution is used by the form, most likely a spreadsheet

Custom software platform

Overview

A number of repair networks have created custom software applications for managing repair events and recording repair data. These usually have custom built digital forms for repair data capture, with the data collected being added to a database.

As with spreadsheets, the software might be the sole source of data capture, or might be used in addition to analogue data capture such as paper or flip charts as a means of digitisation after the fact.

Pros

- Consistency of data
- Can be easy to use if designed well
- Data is available in a digital format straight away
- Complicated data validation is possible
- Allows for suggestion of data (e.g. pre-populated dropdowns, suggest as you type, automatic suggestion based on previous data, etc)
- Allows for conditional logic (i.e. you selected 'Fixed', please answer this follow up question)
- Photos may be associated to items
- Data can be exported for analysis
- Data can be exported to CSV
- Groups don't have to maintain the software

Cons

- Generally online only
- Groups have less control over the data that is collected

Examples

[Restarters.net](https://restarters.net) / [Fixometer](https://fixometer.com)

Turntable	Hi-Fi separates	Challenge	0	Not functioning - worked again after disassembling and putti...	FIXED		
Laptop	Laptop medium	Apple	11	Speakers sound weird and touchpad only partly working	REPAIRABLE		
-	Small kitchen item		2	Not functioning	END		

+ ADD POWERED ITEM

ITEM

Coffee maker

Brand

Model

Age

years (approximate if unknown)

Add

Images

REPAIR

Repair outcome?

ASSESSMENT

Description of problem/solution

Notes. Examples: repair difficulties, owner's perception of problem etc.

Useful repair URL

Source of repair information

☐ Interesting case study to share?

[Repair Monitor](#)

Add new repair

Date of repair*
17/07/2019

Ref. number*
0149_2019_0717_1

About the product
Kind of product
Electric hot water bottle

Is your product not on the list? Try another description or choose 'Other'

Category*
Household appliances electric

Brand*
Bodum

(Estimated) Year of production
2012

Model, type number and/or serial number
11452

Problem description + probable cause
It doesn't do anything

About the repair
Repairer
Angel, Dries

Defect found
Thermal fuse broken

Possible workflow

- *This is if a platform is used during an event. If it's for post-event digitisation (e.g. paper forms or flipchart), then another workflow has been used during the event.*
- Link to the website or app is shared with fixers who provide their own laptops OR website/app is used only by the host or data volunteer at the event

Audio recording

Overview

Digital audio recording can take the place of hand-written or typed information during an event. Most likely to be carried out by a fixer or a data volunteer. Audio can be transcribed in real time or after the event.

Pros

- Frees the hands of the data collector and in the case of a fixer it can greatly improve the ability to record more quality information
- Easy to involve the fixer and the visitor, using a question/answer format

Cons

- Requires audio recording equipment, at the very least a smartphone with an appropriate app. See Appendix A: Tools for details of using [Google Keep](#) (Android/iOS/Web) to record audio with real-time transcription

Additional tools

Whichever method forms the basis for the data collection, ways of augmenting the data collection can be considered.

Photography

Taking photographs of the item and the repair as it progresses. These photographs can be used for either manual or automatic data enrichment. For example, a photograph of a model/brand label can help register that information after the fact. A photograph of the cause of the fault can help record a description of the fault to the item, after the fact.

FAQ

Isn't using paper forms / flipchart a bad idea?

"Digitisation is good! Paper is bad! Surely everyone has wifi or mobile data to make use of an electronic system at their events."

Analogue collection is not necessarily bad. Digitising the data is necessary for making later use of it. But not every group has a consistent connection in their venues. And not every individual is comfortable with technology. So analogue data capture can often have a place. Paper forms are easy to send around the room with multiple different people. Flipcharts can provide a nice focal point and queue management system.

Why doesn't everyone just use the same system for recording data?

While that would help with combining the data, given that there are thousands of repair groups around the world, it seems unlikely that one tool/system could meet every group's needs. Different groups/networks have different circumstances and requirements and resources. New groups have different requirements from established groups. Big groups have different requirements from small groups. The [Open Repair Data Standard](#) aims to facilitate combining together data collected by different systems.

You might also ask: Why doesn't everyone just use the same operating system? Or the same browser? Or the same social network?

APPENDIX A : Tools

[Recording data using Google tools](#)

Recording data using Microsoft tools

Recording data using other (free?) tools