

Radiodan

**A homebrew, cheap, flexible, open
source, IP radio prototyping
platform**

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Nicolaou

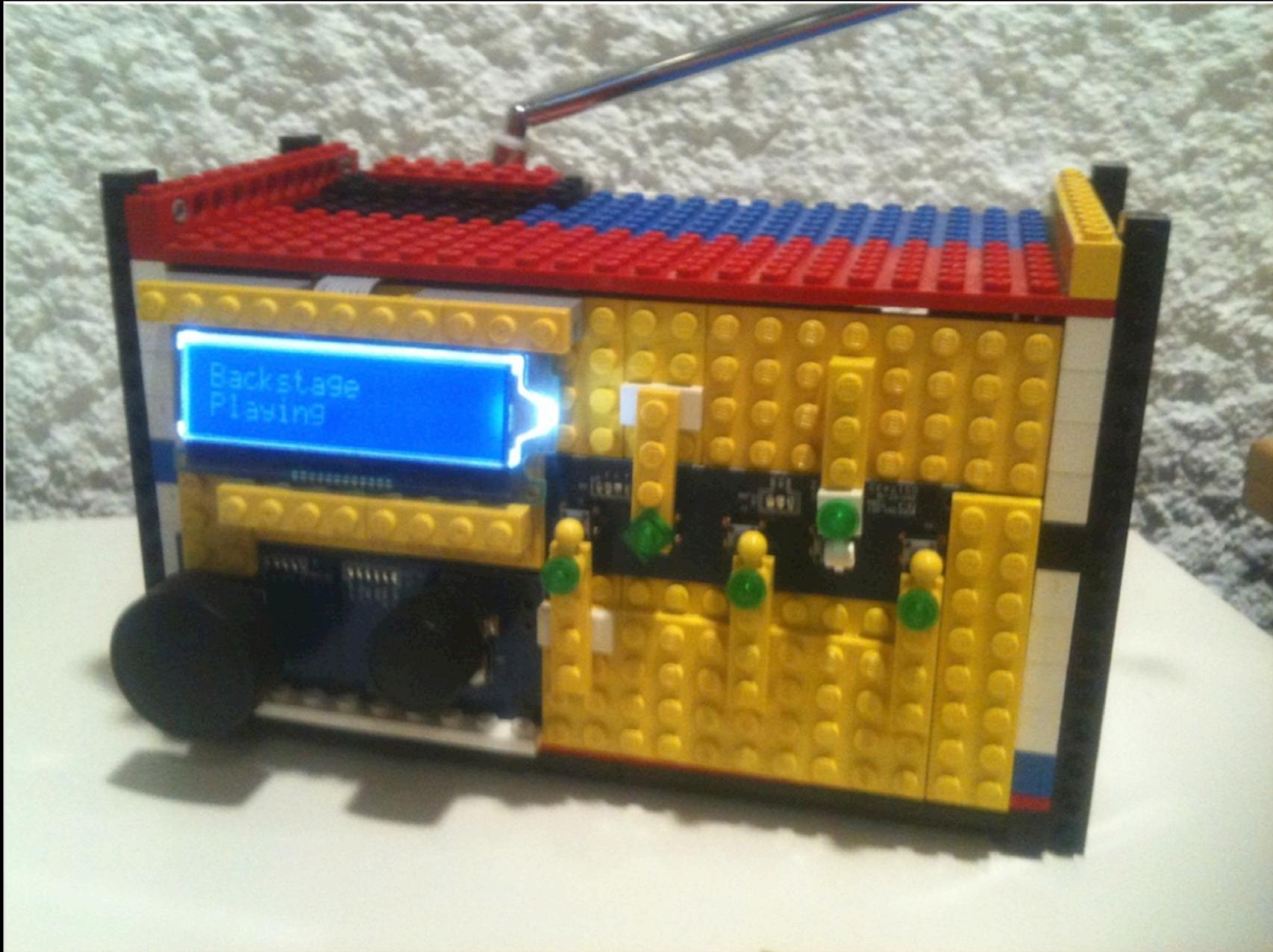
BBC Research & Development

**What's the future of
radio devices?**









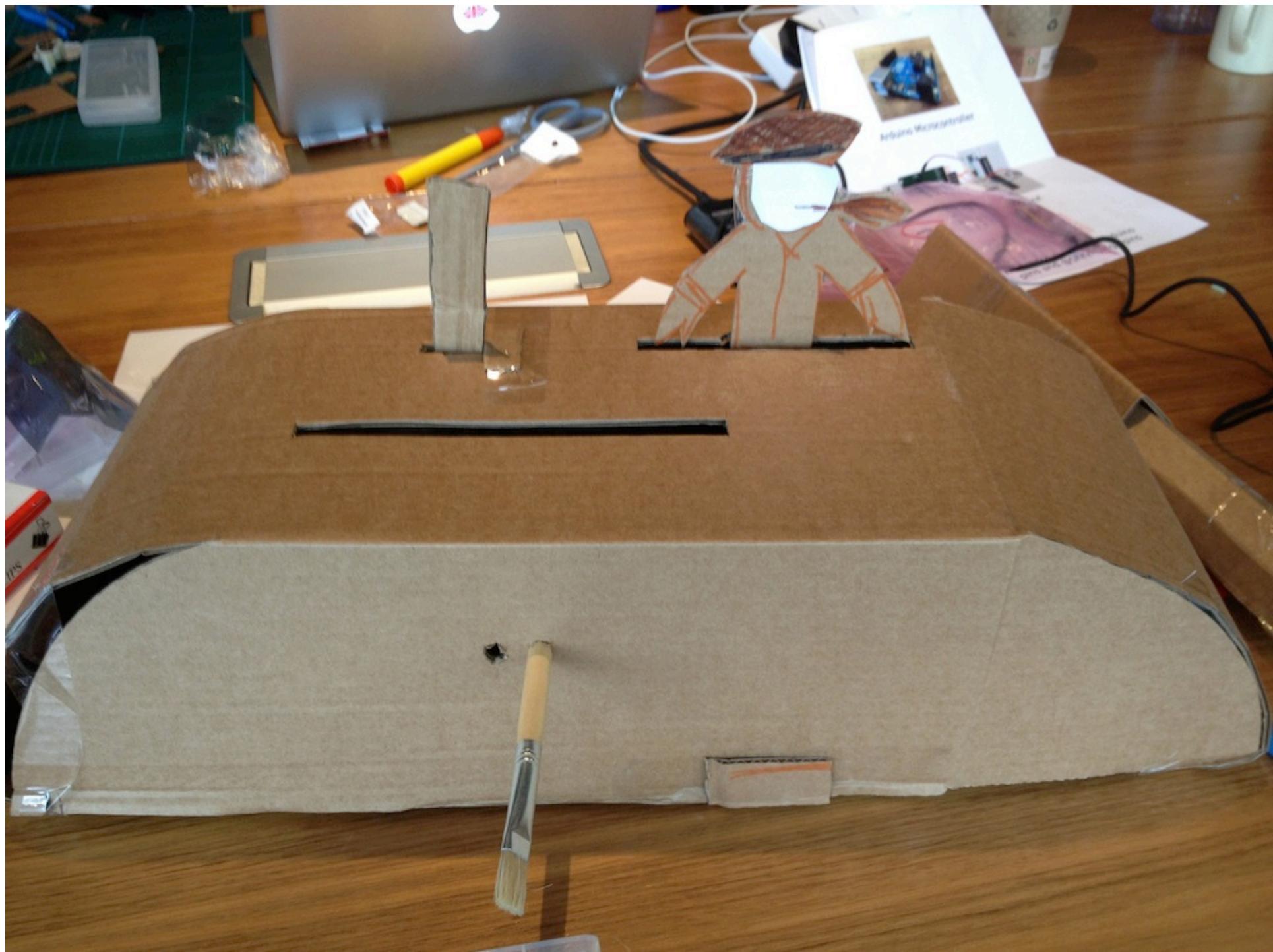
We don't know
It's time consuming and
expensive to find out

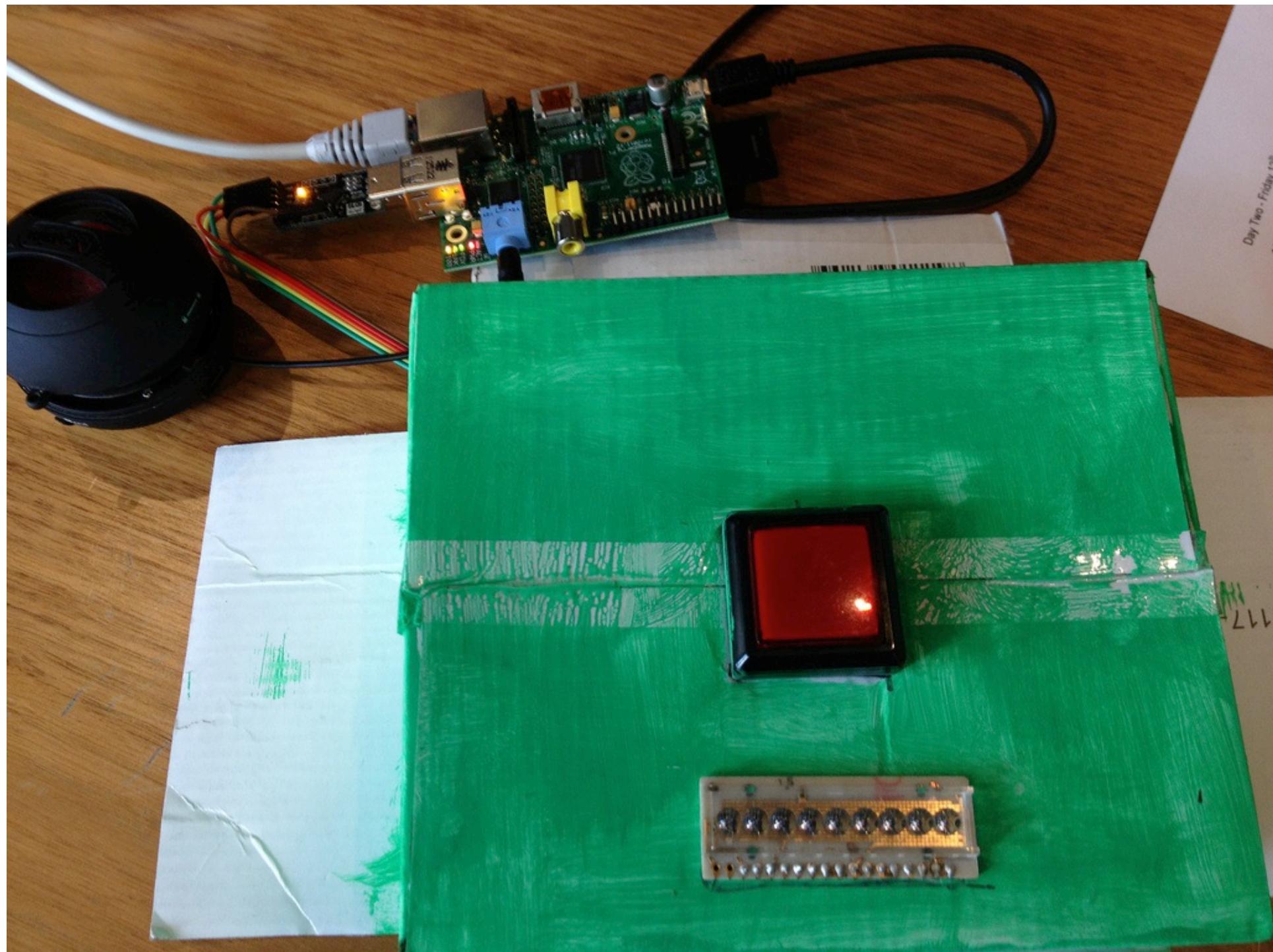
The Archers Avoider

Or “Barwick Obliterator”

ARCHITECTURE PANIC OUT-TO -

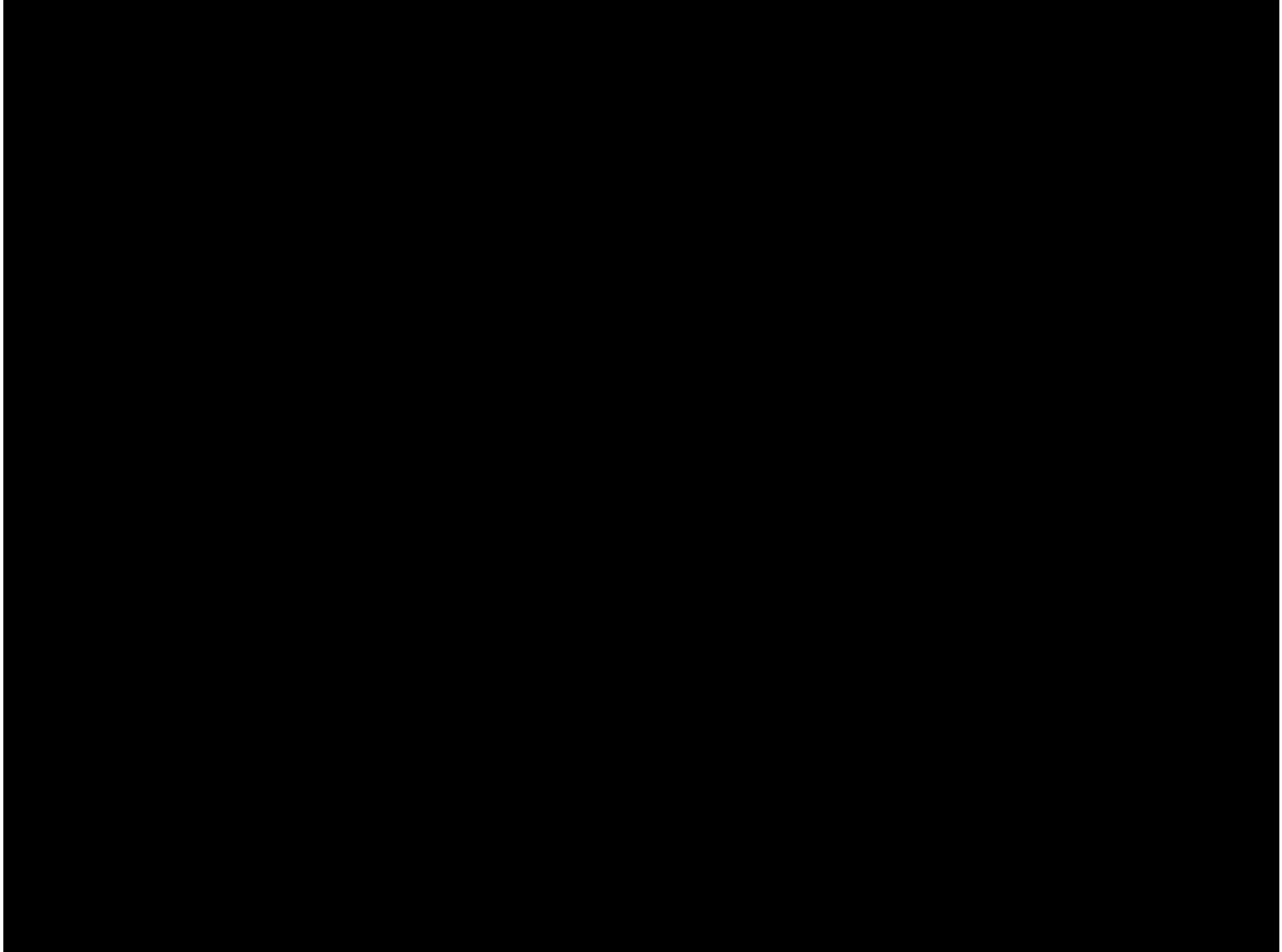








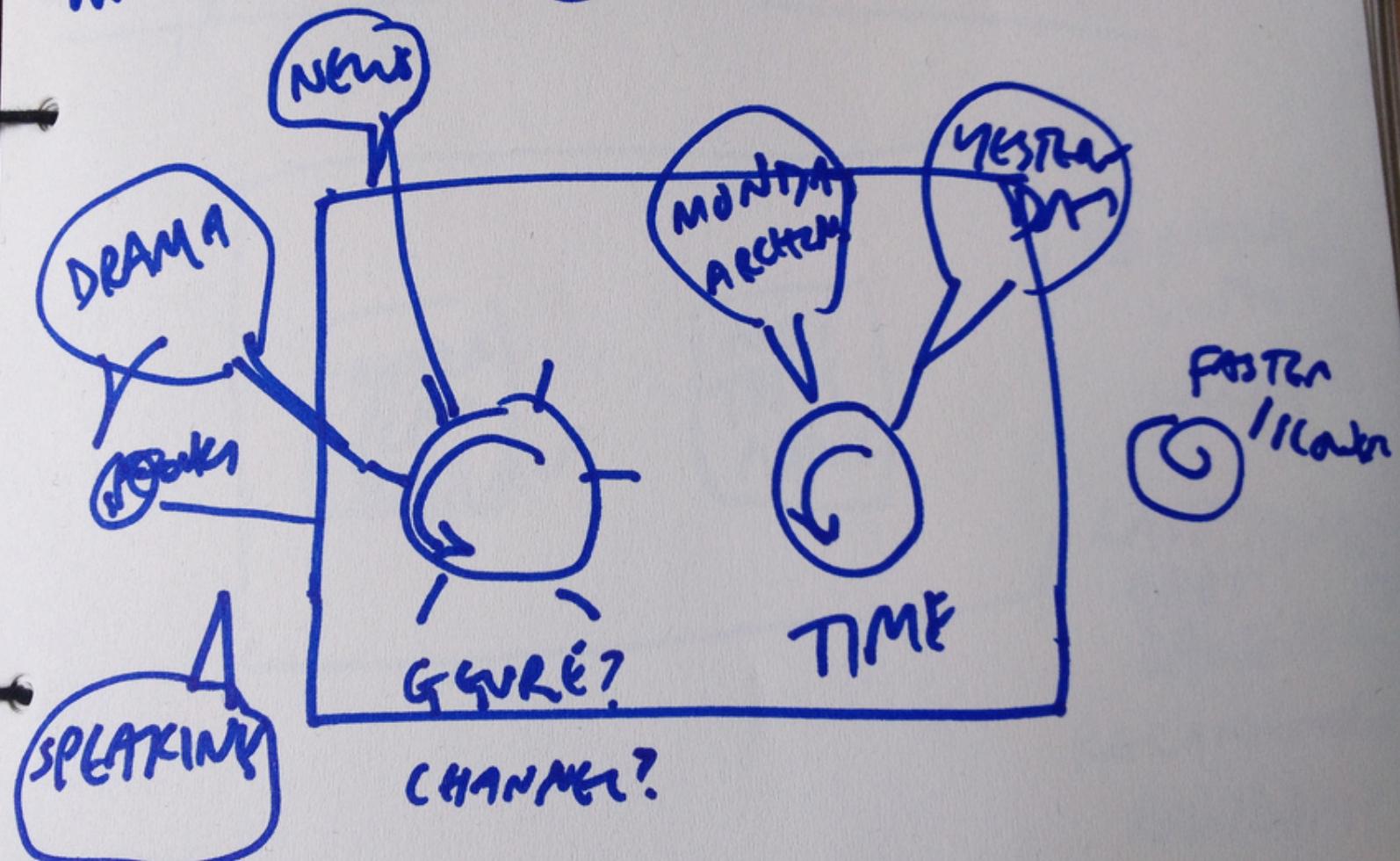




**What else could
a radio do?**

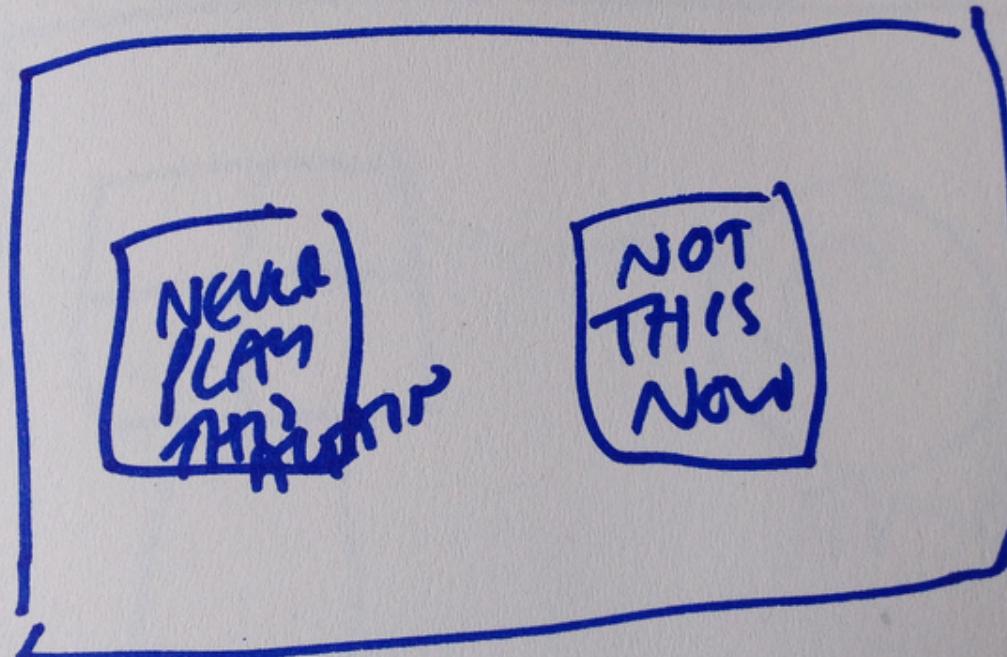
WRONG WRADIO ①

TIME TRAVEL RADIO



WRONK RADIO ②

NOT THIS!



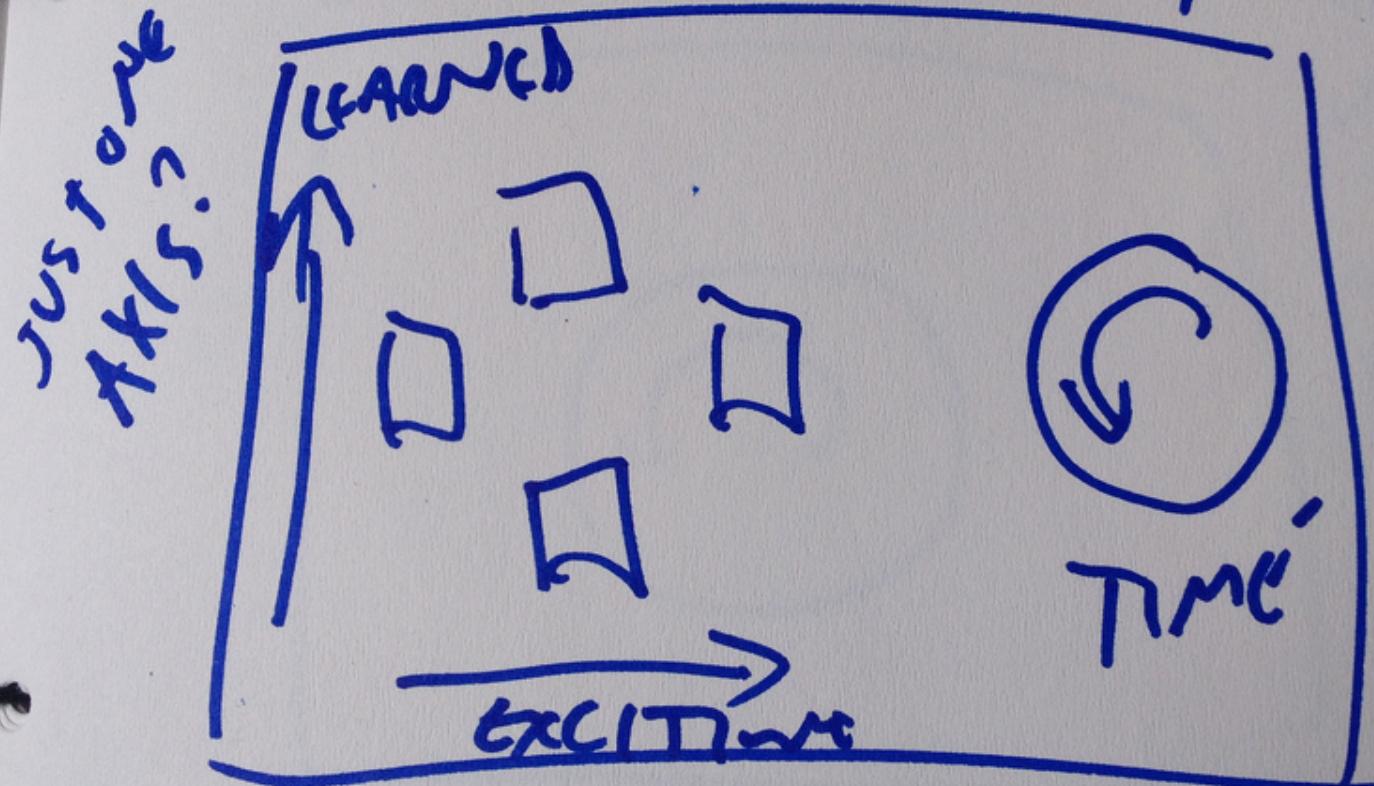
Replace
with
what?

LAST THING:
NOT
BANNED?
RECOMMENDED?
RANDOM?

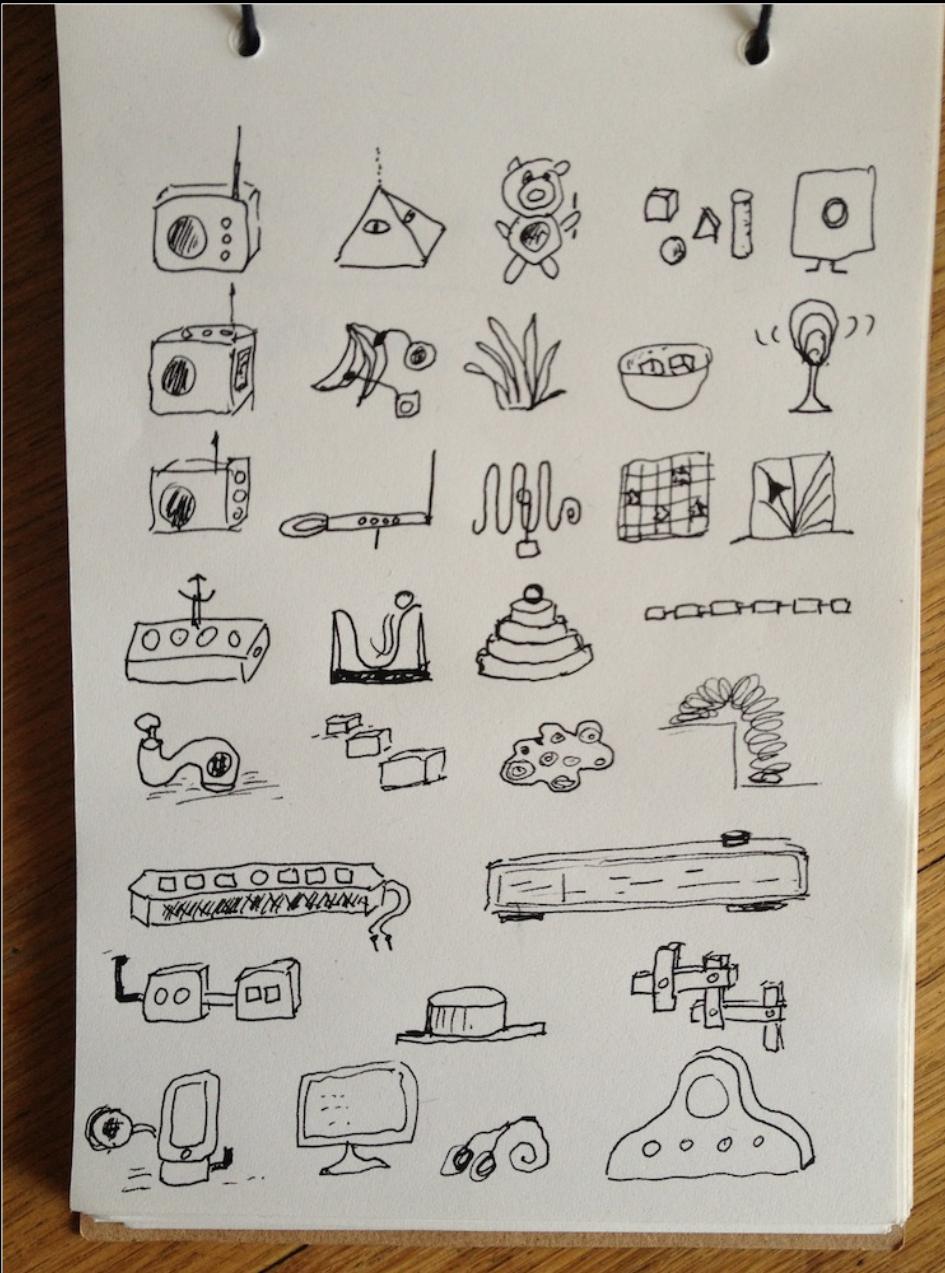
ABW

WRONG RATIO ⑤

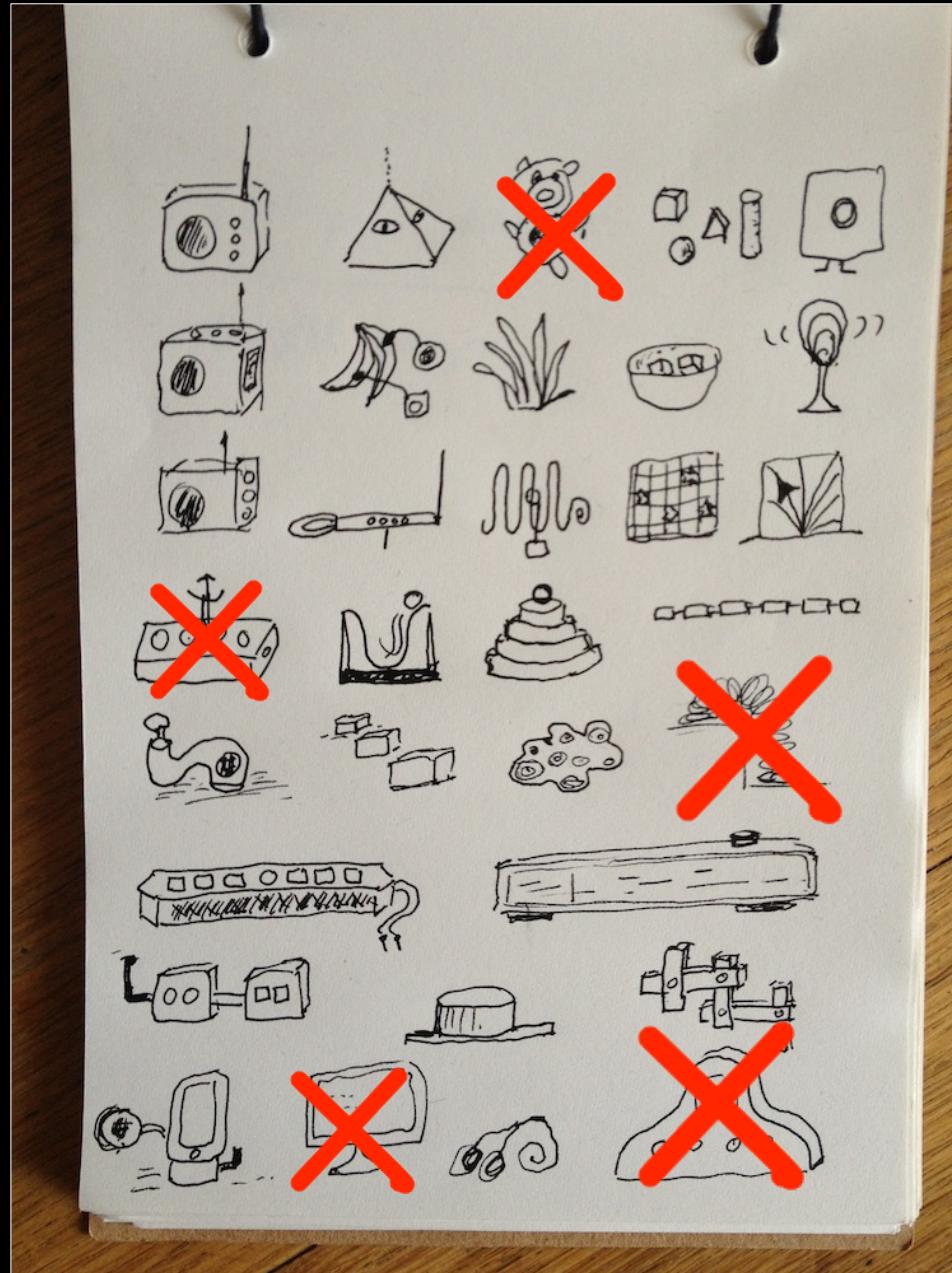
LEARNED / EXCITING -



Experiment more, guess less



Evolve quickly and prune the
ideas that don't work



**We need software
as well as boxes**

We need...

Radiodan

Radiodan

Open-source software radio platform

- Connects to wi-fi
- Plays IP streams and audio files
- Can have physical controls
- Has a web server
- Easy to program

```
radiodan = Radiodan.new

# create two playlists of BBC Radio Streams
radio1 = Playlist.new('http://bbc.co.uk/listen/radio1')
radio4 = Playlist.new('http://bbc.co.uk/listen/radio4')

# play radio 4
radiodan.play(radio4)

# respond to button press
watch :button => 0 do
  radiodan.play(radio1)
  sleep 5           # wait for a bit
  radiodan.play(radio4)
end
```

Uses Raspberry Pi

- Widely available
- Built-in sound card
- Large developer community
- Plenty of software available



£20



£4



£2

£6



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FREE!



i'm an award
winning tea

800
BAGS OF OUR
TEA

unbleached bags
250g



button	1/3	2.04	1.04
croc clips	2/6	0.22	0.11
M/F wire	2/L	0.10	0.05
F/F wire	1/3	0.05	0.05
rock resistor	1/3	0.25	0.25
P/I		20.00	20.00
WiFi card		4.30	4.30
sound card		2.35	2.35
speakers		4.99	
USB hub		3.44	4.99
USB extension cable x2		3.70	1.85
USB plug		1.70	1.70
SD card		6.00	6.00
box		6.50	6.50

54.64

£55

Lowering the barrier to entry

Don't worry about:

- wifi setup
- buttons
- dials
- playing audio...

Lowering the barrier to entry

- Focus on what you want it to do
- Radio can continue to be the box in the corner but do more than you'd expect

It's early days

We're documenting the work here
and you can follow our progress and
get involved

radiodan.github.io

Thanks

Team Radiodan **Dan** Nuttall, Chris Lowis, Libby Miller, Andrew Nicolaou

Electronics help Jasmine Cox, Cefn Hoile, Tom Nixon

Laser cutting Neil Ferguson

‘Wrong radio’ ideas Richard Sewell, Anton Bowers & Bristol Hackspace

Radio device inspiration Samuel Vuillermoz

Drawing inspiration Vicky Buser, Paul Downey, Russell Maurice