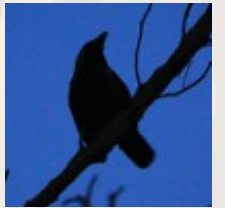


Building a Liberated Home *for myself and others*



abhas abhinav

hacker | entrepreneur | free software activist
DeepRoot GNU/Linux & Mostly Harmless



abhas.io



What I do

A **GNU/Linux** user since 1998.
Started a Free Software Business in 2000.

Work full-time to help **individuals** and **organisations** run GNU/Linux and Free Software for all their needs.

Build, liberate & sell hardware that allows everyone to run free software in more places.

A **lifelong** libre software activist.



What have we been working towards?

Doing everything using Free Software;
all the time.

by writing software, documenting it, helping users
and building solutions to make it easy to deploy and use.
for everyone. everywhere.



A Thought Experiment

Let's consider two simple situations



What are the chances...

...that if you purchased “<something>” today,
it would -

- (a) not require Internet access or call home,
- (b) allow you the freedom to learn, hack, fix & extend,
- (c) allow you to be in complete control...

and still **function and operate** ?



How would you feel...

... if your **daughter** asked you to show her how that **"<something>"** worked and you were **forced to admit** that you **"couldn't"**!

Maybe – ‘cause of the very nature of that product: while its functions were software-defined, the **software was proprietary** & the developers offered no way to access, read, change or extend the software. Or the hardware.



The Problem

“Computers” are everywhere.

But they’re in forms that
don’t look like “computers” to us.

Hence, there is also software
in many more places too;

Software - that can, *very often*, be out of our control.



Where are these computers?

Televisions. Wireless routers. Lights. Switches.
Speakers. Radios. Music players. Toys.
Mobile Phones. E-book readers. Keyboards.
Network Storage. Cameras. Voice assistants.
Door locks. Alarm clocks. Weighing scales.

Beware of the

“CONNECTED X!” & **“SMART Y!”**





These “computers” might provide convenience and utility... but they also...

- a) Limit our freedoms
- b) Spy on us & share information with others
- c) Provide conditional access to “our” data
- d) Contain “malware”
- e) Eliminate our ability to repair / extend / re-purpose / modify the products
- f) Prohibit us from learning how “things” work
- g) Provide excessive control to developers and none to users
- h) We are no longer “owners” (no freedom) – just consumers.



We have been advocating for
complete software freedom. And **control.**
(पूर्ण स्वराज)

In our rush to **connect** everything, and quickly,
why have we traded off our privacy and freedom
to hack / learn / share & fix?

Just to possess **the cool** and **the convenient**?



My Premise

Unless we
mindfully choose the hardware
that runs our lives,

we are going to
run out of places
to run free software.



Choosing Mindfully

It can be a challenge to
un-choose something
we've not deliberately chosen earlier.



Choosing Mindfully

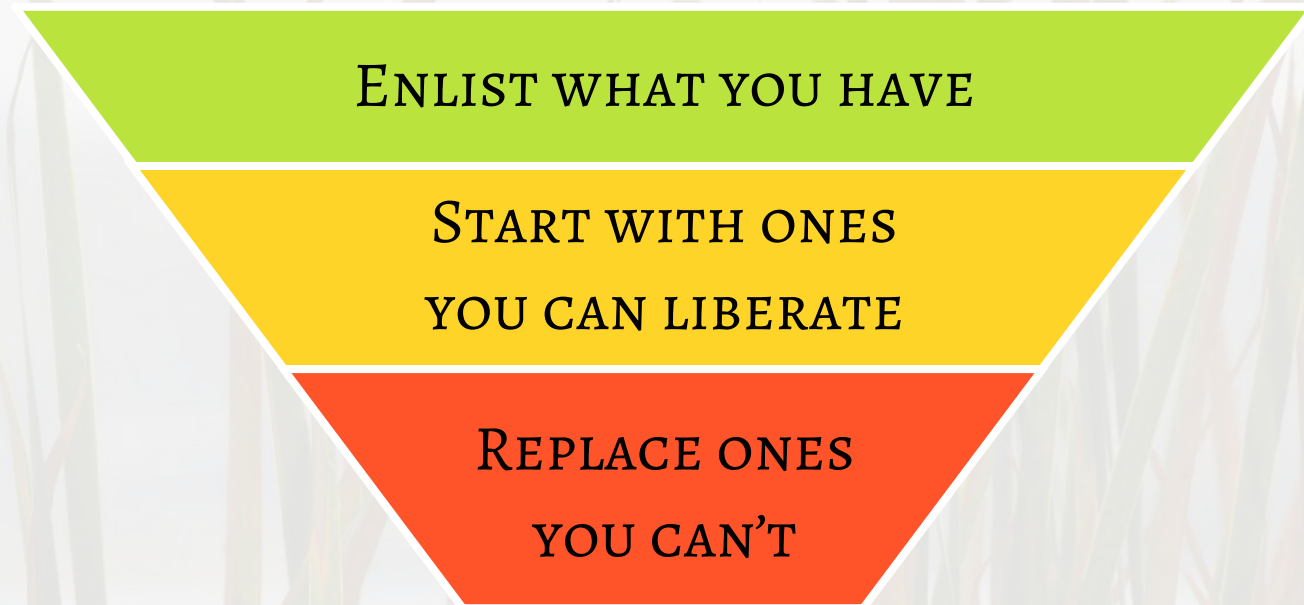


THE BOTTOM-UP APPROACH

START FROM SCRATCH



Choosing Mindfully



THE TOP-DOWN APPROACH

START WITH WHAT YOU HAVE



Liberate (v)

“Liberated Hardware”

is hardware that can run free software but wasn't necessarily designed to do so by design. Lots of off-the-shelf hardware that can help us.

Challenges: Binary Blobs. Non-free software or drivers. Difficult to extend. Access to “liberation” tools. Hardware age. Spare parts.

Upcoming Website: liberatedhardware.org



Build

Libre Hardware Designs / Free Design Hardware.
Developer Hardware. DIY Kits.

You could have a better chance of being in control and running free software on hardware you build yourself.

Hardware can often be challenging & complex to deal with.

... lack of skills / knowledge does not limit our capacity to do something. Not doing something limits our capacity to build skills or acquire knowledge.



Building a Liberated Home: For Myself

BUILD WHAT YOU NEED

SO YOU CAN CONTROL ALL YOU HAVE.

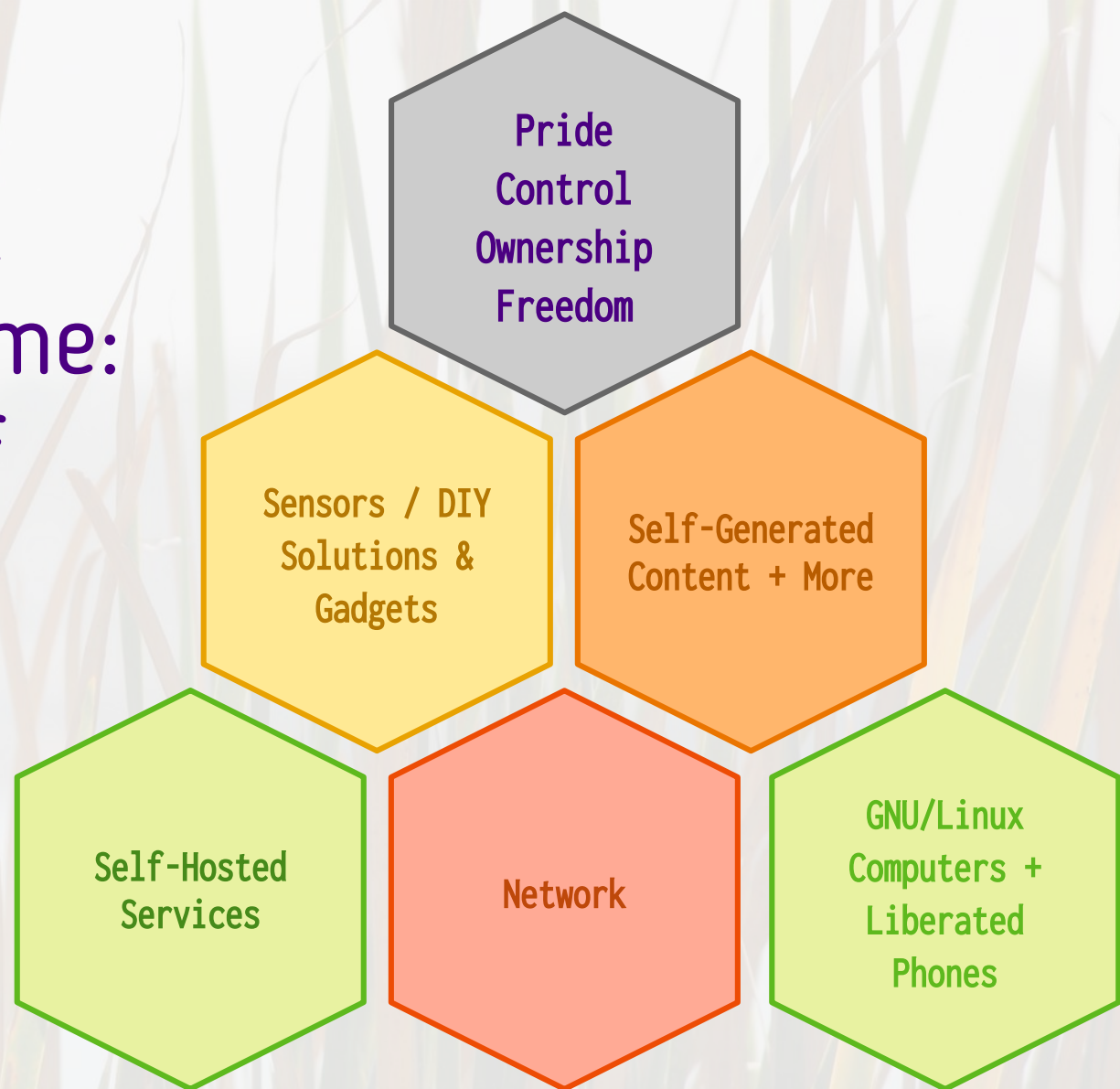
MY CODE

Build/Liberate everything yourself.
All software must be Free Software.
Accept the downsides with grace.
Build - Don't Buy.
Buy components, not finished products.
Mainly - Don't give up.

Upcoming Website: <https://liberated.homes>



Building a Liberated Home: For Myself





Liberated Network - the road to connect all free software components.
If we are in control of our networks, we can choose who gets to ride on our roads, where they can go and when. (*Nishant Sharma / LibrePlanet, 2019*)

THE
NETWORK

Building a
Liberated Home:
For Myself

Powered by Free Software (OpenWRT)
Local DNS-over-HTTPS resolver (stubby) (DNS Privacy)
Network-wide Adblocker (adblock)
(Protects from trackers and Ads)
File services (NFS/Samba/HTTP)
Wireless Access Points + Repeaters
+ Ethernet Cabling
Redundant Internet Connections
VPN-based Remote Access & Overlay Network



SELF-
HOSTED
SERVICES

Building a Liberated Home: For Myself

Instant Messaging & Communication:

XMPP / Matrix / VoIP / Email
BigBlueButton / Nextcloud Talk

File Sync / Sharing / Backups:

Nextcloud / Syncthing / NFS / Samba
Multiple DIY NAS Devices

Analysing In-House Metrics

Local Monitoring for UPS / Networks /
Computers & Mobile Phones,
Power Consumption



GNU/LINUX
COMPUTERS
+ LIBERATED
PHONES

Building a Liberated Home: For Myself

All computers run GNU/Linux
and no proprietary software.

Most phones run LineageOS. :(
... and no proprietary software.

Single-board Computers / Liberated
Computers as servers.

Debian / Manjaro / Ubuntu
OpenMediaVault / LineageOS



Building a Liberated Home: For Myself

Self-Generated Files:
Photos / Videos
Audio recordings / Documents

Plus:
Music / Films / Books

Kode/LibreElec-based Media Center to display content. Network-wide music server. WLED + LedFX for music visualisation and lighting effects.



Sensors / DIY
Solutions &
Gadgets

Building a Liberated Home: For Myself

Wireless Switches
Temperature / Door Sensors
Wireless Lighting. Keypads.
Power consumption monitoring.
3D Printer (for local fabrication)

Misc. hardware components and tools
for hacks, repairs & extensions

Music Player. Weighing Scale.



Building a Liberated Home: For Myself

The long term and most valuable outcome:

Freedom delivered by Free Software
Ownership & Control offered by the
DIY nature of everything

Pride in building and owning hackable things. When they break, we can learn to fix them ourselves. There are extensive learning opportunities all around. Delayed gratification.



Archival

How do we “inherit”
personal digital assets -
pictures, servers, videos, e-books, music?

What about long-term inter-generational archival of information?

Self-hosted Free Software
on **Libre or Liberated Hardware.**

Lets build a personal archival strategy in our homes.



Building a Liberated Home: For / With Others

AT LEAST -

THOSE WHO UNDESTAND & CARE ABOUT FREE
SOFTWARE SHOULDN'T HAVE TO COMPROMISE.

LibreTech.Shop

Ethical and Hackable
Products + Convenience.



Helping Others Live Liberation

Provide easy access to libre/liberated hardware products capable of running free software - by default.

Method:

REFURBISH / MANUFACTURE / LIBERATE

Offer convenience and hackability, support, documentation, source code and a community - out-of-the-box.



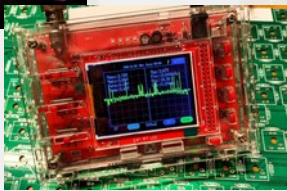
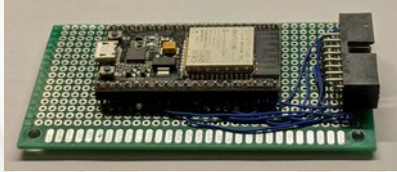


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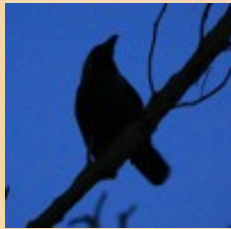




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FreeTalk.show



abhas.io



sovrان.dev

freesoftware.business



What I cannot create,
I do not understand.

Know how to solve every
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Email: io@abhas.io

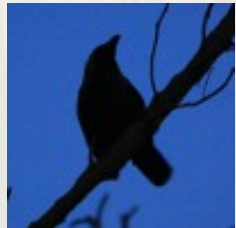
Matrix: [@io:abhas.io](matrix:io:abhas.io)

XMPP: [io@abhas.io](xmpp:io@abhas.io)

Thank you!
Questions?

“What I cannot create; I do not understand. Know how to solve every problem that has been solved.”

- Richard Feynman



abhas.io