4. Survey

As SADIM dictates we start our permaculture design with an extensive survey of the subject. In a land based design, where I design for example for my own homestead, I surveyed the land for a two years – and I'm still surveying. In case of this book the survey was extensive as well. Extensive survey of the subject is important, otherwise our outcome will fall short.

The 3 rules for survey are: Carefully, Carefully, Carefully

Soft- and Hardware

Depending on when you are reading this book, some of the soft- and hardware described here might already be out of date but the derived patterns will remain. The observations made in the following chapters are made from my personal perspective. In this stage of the design I encourage you to start your survey as well!

Hardware

Over a decade or so I have been part of multiple meetings with different organizations and people – all related to permaculture. Over

that period of time I have met the highest amount of Apple users I have ever met. Usually the amount of Apple computers would be at some 20% of all users[73]. In the permaculture and sustainability world I have been part of it was the other way round. I would say about 80% of the people I worked with on permaculture projects were Apple users. No worries if you are using Apple hard- and software. Some things and habits are more difficult to get rid of than others.

Apple Inc., known simply as Apple, became a symbol of market valuation when it reached the unprecedented milestone of a 1 trillion-dollar market cap in 2018. This valuation did not come from curing diseases, eradicating poverty, or resolving the complex issue of climate chaos. Instead, it was about the company's immense success in the technology sector. This moment raised an important questions about our collective priorities and the criteria we use to assign value and prestige in our global economy. It suggests that we may need to reflect more deeply on our ethical frameworks and consider how they align with the challenges facing humanity. It seems we have some ethical decision making to do!

Nearly all their software is closed source (they have some Open-source contributions[74]). Their lock-ins[75] are well known and documented.

73 https://www.statista.com/statistics/576473/united-states-quarterly-pc-shipment-share-apple
74 https://opensource.apple.com/projects/
75 https://www.techconstant.com/apples-lock-in/

Lock-ins

Our culture is consumer-driven. And among our culture a disturbing trend has emerged: the prevalence of technology designed to keep us tethered to a single manufacturer, often rendering products obsolete before their time. This practice, known as vendor lock-in, contributes to an ever-growing mountain of e-waste, as devices are cast aside in pursuit of the latest, seemingly indispensable gadget. It falls upon our legislators to put an end to this wasteful cycle and ensure that companies no longer dictate the lifespan of their products for the sake of appeasing shareholders with impressive sales figures. It is not just about the legislators. As permaculture practitioners, we must resist the siren call of disposable technology and refuse to be complicit in a system that prioritizes profit over the health of our planet. By embracing and advocating for durable, sustainable alternatives, we can challenge the destructive norms of our throwaway culture and help to forge a more responsible path forward.

> *"We live in a world where the funeral matters more than the dead, the wedding more than love and the physical rather than the intellect. We live in the container culture, which despises the content."*

Eduardo Galeano, Uruguayan novelist[76]

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76   https://en.wikipedia.org/wiki/Eduardo_Galeano

> On one project the team members were using Slack
> (page 133) and one of our members had an old
> MacBook. His Mac was as old as my Lenovo Thinkpad
> but he couldn't get into Slack because he couldn't
> update the MacOS any more. Basically Apple decided
> that the old MacBook wouldn't get the newest MacOS
> and therefore the needed libraries where missing. He
> later installed Linux on his Mac – problem solved.

Outdated

A common problem that we often face is that outdated software renders still usable hardware unusable. But thanks to clever developers there are alternatives around. Most of the time I was able to switch a software that would get no updates any more for an alternative. Linux is usually my go to software. There are so many now – just to name some: Ubuntu or Mint[77] or sometimes even Arch Linux[78] – chose your flavor.

Why is software for older hardware discontinued?

Hardware limitations: Newer software versions often require more advanced hardware specifications, making them incompatible with older devices.

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77 https://linuxmint.com
78 https://archlinux.org

Cost: Developing and releasing software updates for older devices can be expensive, and manufacturers may choose to allocate their resources towards newer models instead.

Declining user base: As the number of users with older devices decreases, the incentive for manufacturers to continue updating their software also decreases. It kind of also boils down to costs.

EOL (End of Life) Policy: Some manufacturers have a policy to support a device for a certain period of time, after which they stop providing software updates.

Problems from discontinued software

The problems which come from discontinued software, and by that affect the hardware as well, are multiple:

Security vulnerabilities: Without regular security updates, older devices can become more susceptible to cyber threats, such as hacking, malware, and data breaches.

Compatibility issues: Newer apps and services may require the latest operating system versions, making them incompatible with older devices.

Performance degradation: As newer apps and services require more memory and processing power, an older device may struggle to

keep up, leading to slower performance and reduced battery life.

Missing new features: Users of older devices will not have access to the latest features, improvements, and bug fixes that are available on newer devices.

Reduced resale value: A device that is no longer receiving software updates may have a lower resale value compared to newer devices, which are supported with the latest software.

In 2024, I read a discussion in the International CoLab's Slack workspace. The topic was about the latest update Slack had rolled out, which no longer supported devices with Android 8. The phone that couldn't get the update to a newer Android version was the Shiftphone[79]. It was one of the rare cases where an actually well-thought-out product was rendered useless. I then suggested switching away from Slack.

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79 https://www.shift.eco

The problem is the solution

Obsolete hardware can contribute to a significant amount of waste (we will see about e-waste later – page 334). The rapid pace of technological advancement means devices become outdated relatively quickly, and this can result in a large amount of e-waste, which can have negative impacts on the environment.

But luckily we have some options:

Refurbishment: Obsolete devices can be refurbished and reused, either by fixing any broken components or updating the software to make them more functional. Refurbished devices can then be sold or donated to those in need. Alternative operating systems like Linux[80] and custom ROMS can help.

Upcycling: Obsolete devices can be repurposed or upcycled[81] into new, useful products. For example, an old smartphone can be turned into a smart home device or a digital picture frame. I use my old smartphone as wildlife camera.

Recycling: Obsolete devices can be recycled to recover valuable materials, such as rare earth metals[82], and to minimize the environmental impact of e-waste.

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80 https://en.wikipedia.org/wiki/Linux
81 https://en.wikipedia.org/wiki/Upcycling
82 https://www.visualcapitalist.com/visualizing-the-critical-metals-in-a-smartphone/

Donating: Obsolete devices can be donated to schools, non-profit organizations[83], or individuals in need, providing them with access to technology and reducing waste.

Trade-in programs: Some manufacturers and retailers offer trade-in programs, where users can trade in their old devices for discounts on new devices, helping to reduce e-waste and provide incentives for consumers to upgrade their technology.

In conclusion there are many options around to extend the life-cycle of computers and telephones. The Open source community is very helpful when it comes to the support of older devices.

Hardware inventory

Here are some questions we could ask ourselves when we create our hardware inventory:

- What hardware do I own?
- When have I bought that hardware?
- Was it a conscious decision to start / continue using it?
- Which operating software is it running?
  - Licensing model?
- Am I locked in?
- Am I using leased hardware or hardware given to me by e.g. the company I work for?

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83 https://www.labdoo.org/global/en/