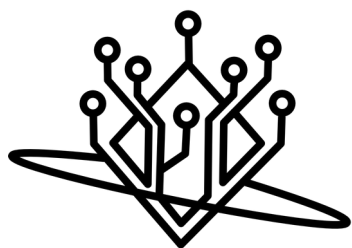


Progress creating an open source IT stack for schools in The Netherlands

Website:

Join `[matrix]` chat:



Coalitie
Eerlijk
Digitaal
Onderwijs

(Coalition for Fair Digital Education)



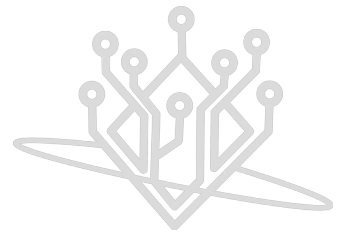
<https://eerlijkdigitaalonderwijs.nl/english/>



[https://matrix.to/#/
#CEDO-EU:matrix.org](https://matrix.to/#/CEDO-EU:matrix.org)



Or follow us on **Mastodon**: @CEDO@mastodon.nl



Geert-Jan Meewisse

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Matrix: [@Geert-Jan:matrix.org](https://matrix.org/#/Geert-Jan:matrix.org)



The Netherlands are “taming” Big Tech



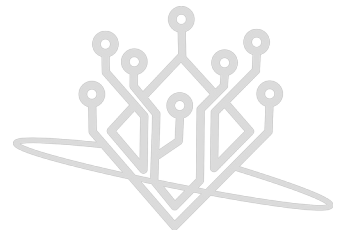
NYT kopt: “How the Netherlands is Taming Big Tech”

<https://www.nytimes.com/2023/01/18/technology/dutch-school-privacy-google-microsoft-zoom.html>

<https://sivon.nl/2023/01/nyt-kopt-how-the-netherlands-is-taming-big-tech/>

DPIA's:

The magic solution to fix all problems!



Nice DPIA...

So, schools now have a dataprocessing agreement...

- Is the technical manual implemented?
- Only applicable to “**core services**”, but mixed with other services
- Only applicable **IN** school, not **after** school
- Many more public values are at stake



Issues and risks for public values in edu tooling

**Profiling and Targeting
for Ads and Service
Personalisation**

Privacy risk

Behavioral predictions

Risk for democracy

Risk for sovereignty

Personal lock-in

Organisational lock-in

Societal lock-in

**Normalization of
unethical tools**

**Risk to academic
freedom**

Financial risk

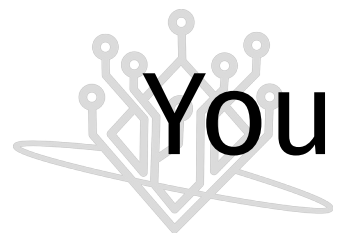
Risk of dependency

**Privatisation of
collective effort**

Unethical practice

Risk of monopoly





You will accept whatever terms are attached:

**Profiling and targetting
for adds and
service personalisation**

Behavioral predictions

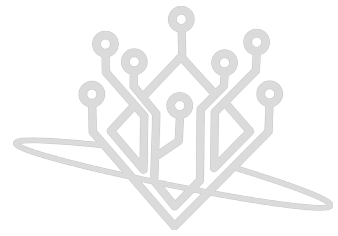
Personal lock-in

Organisational lock-in

Societal lock-in

**Privatisation of
collective effort**



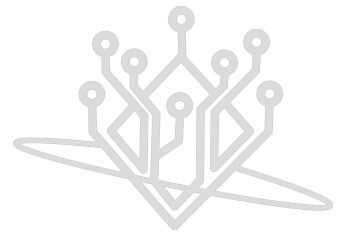


The dutch school system

“Freedom of education” Constitution article 23

- Meaning:
 - Any conviction or religion can start a school based on this law
 - State funds the schools
 - Municipality provides buildings
 - Only a minimal curriculum is prescribed



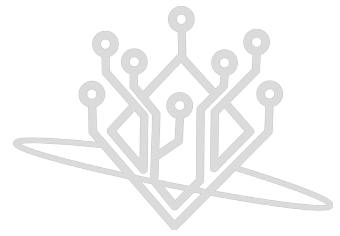


The dutch school system

“Freedom of education” Constitution article 23

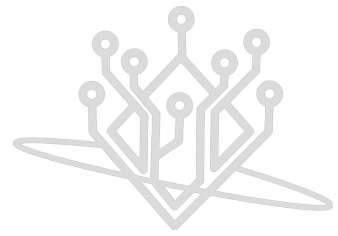
- So schools decide themselves about:
 - teaching methods used
 - **IT environment used**



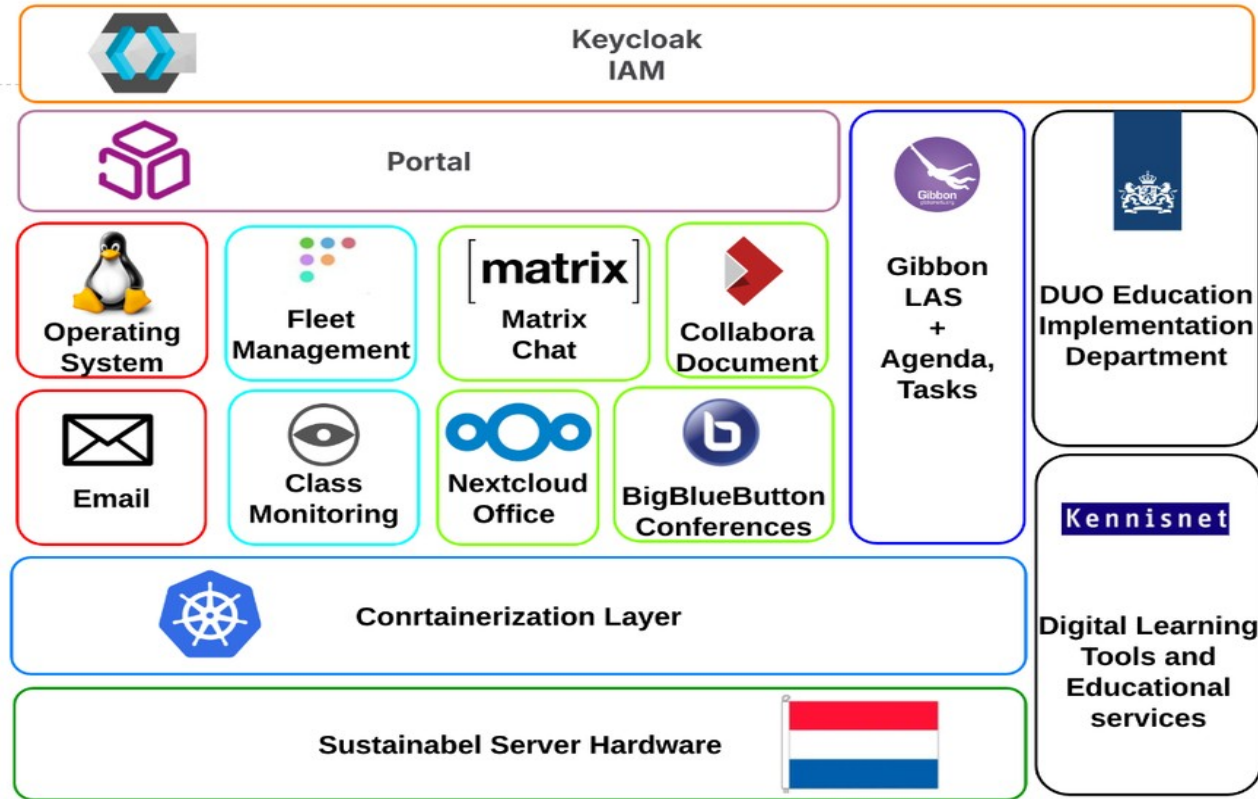


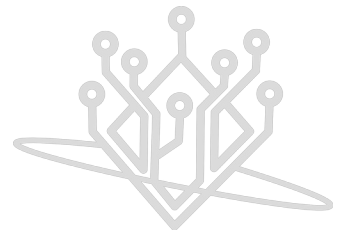
Approach the problem from 3 angles:

- Pilots and educate schools to showcase ethical open source IT
- Lobby, advocate at national and European level
- Journalistic research to raise awareness



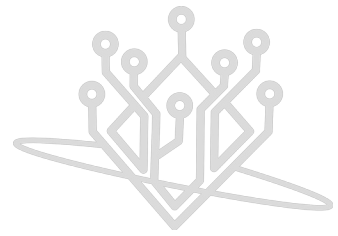
Educational Stack





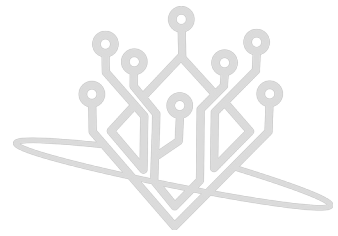
Current status

- One primary education school “Auryn” in Zutphen, full analog or ethical opensource software.
- One combined primary secondary school liberating the Chromebooks.
- Looking for other EU initiatives! :-)
- *And looking for more funding*



Pile of Chromebooks

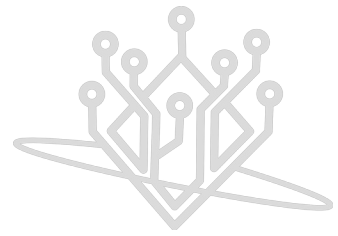
- School buy Chromebooks because
 - they seem cheap
 - connected to software they know.
- When you want to run apps outside the Google ecosystem on them.
 - You need to administer, for example, an additional Windows suite.
- Many Chromebooks have a short support period
 - With Linux , it can run until it actually breaks



Liberated Chromebooks !

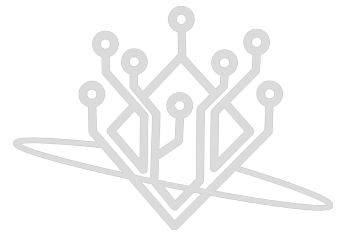
(script by: <https://docs.mrchromebox.tech>)





School computers need

- Fleet management like DebianEDU
- Minimal desktop
- Portal connected to hosted fair apps
- Sync folder for offline work
- Classroom management and computer monitoring



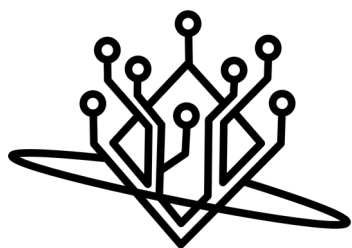
Next steps

- Build demo
- Go on tour
- Do more pilots
- Rollout

Fix the internet!! Start at School!

Website:

Join **[matrix]** chat:



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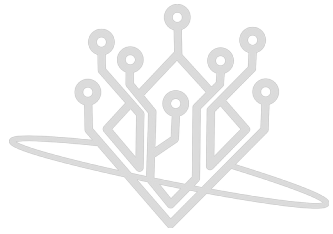


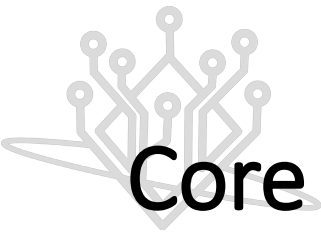
[https://matrix.to/#/
#CEDO-EU:matrix.org](https://matrix.to/#/#CEDO-EU:matrix.org)



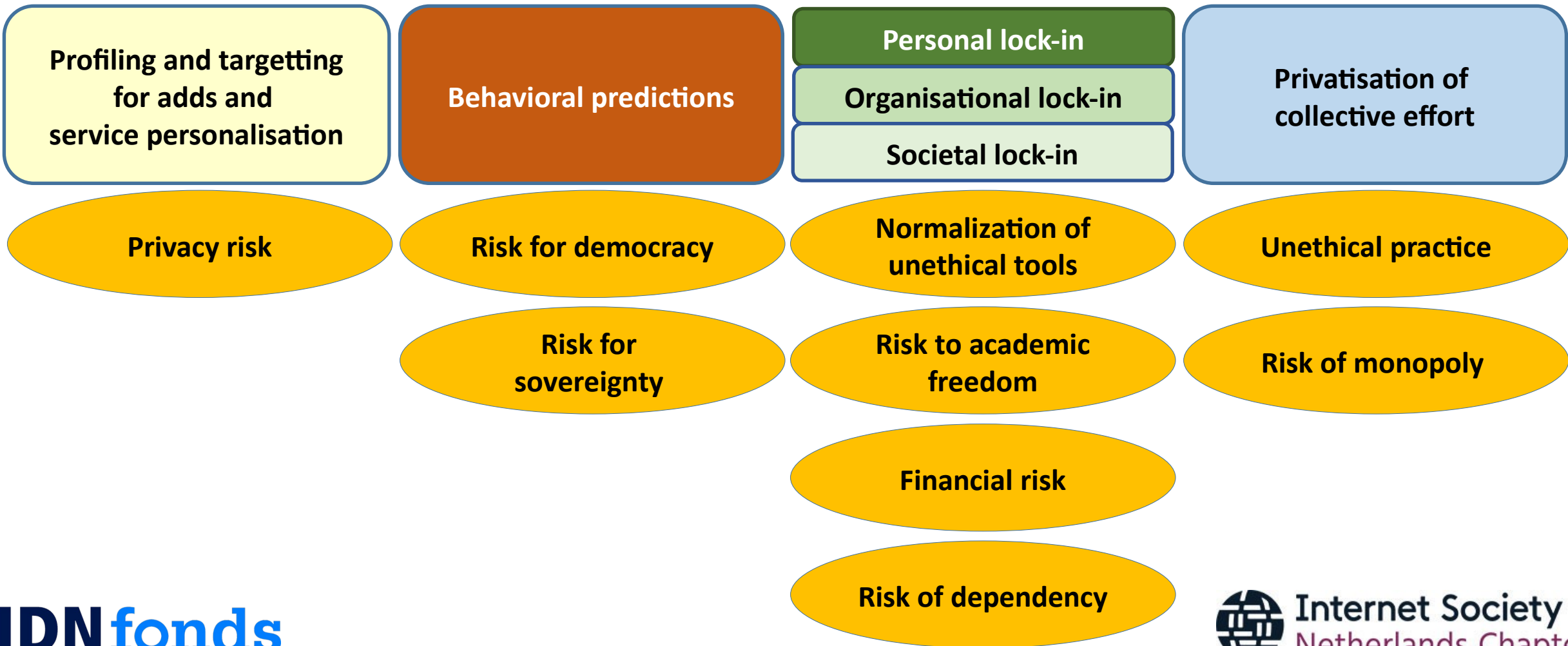
Or follow us on **Mastodon**: @CEDO@mastodon.nl

Background slides





Core issues and risks for public values in educational tooling



Profiling and targetting for adds and service personalisation

Privacy risk

Issues

Explanation/ example

Data is combined from many sources.

- Data is combined with datasets from main Google services like Gmail/docs.
- Data is combined with datasets from 3th parties.
- Data is combined with datasets from basic "free" tools. For example Google offers tools that are very easy for developers, but the actual purpose is data collection. (*Fonts, Firebase, analytics, DNS, templates, etc.*)

Data in cloud services is routinely scanned for content that violates terms of service, risking a block of the account, also for false positives

This is broad dragnet surveillance, executed by private companies, mixing law enforcement and protection of business interests. Search should only take place when there is a cause and a warrant for it, not always and systematically.

Service personalisation is intransparent. Often there is no opt-out.

Even if users are aware that personalization is happening, there is no way to figure out how and why. Example, YouTube recommendations and results from search engines are presented as neutral results. In reality results and recommendations are optimized to serve business interests.

The user cannot switch of personalisation.

If data is not traceable to a person, data is no longer considered 'personal data' thus the AVG does not apply.

Behavioral predictions

Risk for democracy

Risk for
sovereignty

Issues

Explanation/ example

When using surveillance capitalist services you must provide data to "improve our services".
What is meant by that is your (meta)data will be used to train AI algorithms in which you have no say.

Facebook (no accountability nor transparency in how they let collected data be (mis)used by third parties) leading to the Cambridge Analytics scandal (**abuse of Facebook data for propaganda**).

Microsoft and Google, personalising services without transparency nor accountability while, presenting themselves as "neutral" services, eg on Youtube, leading to **radicalisation** and **polarisation** by algorithmic recommendation of next video clip, sending people "down the rabbit hole".

Personal lock-in

Risk of dependency

Normalization of unethical tools

Issues

Explanation/ example

Migration is made difficult.

You invest time and energy in figuring out how to do things, adding your data, building your network, if you move away you loose this investment.

Non-compatible with competing products.

The user is dependent on the features the vendor is inclined to offer. Supplier of those "free" services may decide to terminate the service any time. See https://en.wikipedia.org/wiki/Category:Discontinued_Google_services

Bundling of products.

For example, if you start using Microsoft 365 you get the whole package, incl. MS Teams integrated, setting competitors at a disadvantage.

Blocking of accounts.

When an inappropriate picture is found in MS Onedrive or Google Drive, you risk losing you entire Microsoft or Google account, so no access to O365, e-mail, Teams, Xbox, games and even your PC, or G-Drive/mail/meet, Youtube etc and even your phone. For example a case of the user ending medical pictures and of a user receiving unwanted porn pictures.

<https://tweakers.net/reviews/9094/account-geblokkeerd-wat-nu.html>

Organisational lock-in

Financial risk

Issues

Explanation/ example

Migration is made difficult.

Open standards are ignored, so switching to an alternative comes with huge migration costs. As soon as exit cost are extreme due to becoming locked in, licence cost go up, often to extreme levels.

Bundling of products.

If your organisation has licences for Microsoft 365 you get the whole package, incl. MS Teams integrated, setting competitor at a disadvantage. So why invest in a Jitsi or BigBlueButton server?

Non-compatible with competing products.

The user is dependent on the features the vendor is inclined to offer. (*vendor lock-in*)
https://en.wikipedia.org/wiki/Category:Discontinued_Google_services

Societal lock-in

Normalisation of
unethical tools

Risk to academic
freedom

Issues

Even if an institute properly did all the GDPR homework, with DPIA, proper implementation and a data processing agreement with lots of nice promises (even then CLOUD -act still applies) all the GDPR guarantees **ONLY** apply to the tools used at school or university.

With using cloud services of USA-companies, export restrictions that are result of USA politics get **influence over what universities can discuss or research**.

This applies to any conversation, video, document or research data processed by a USA cloud provider.

Explanation/ example

It is not realistic to expect that students as soon they want to do something themselves (outside university) read the EULA, study the GDPR, conclude that their private accounts come with lots of privacy violations, and then start using something completely different, while university has taught them that these kind of surveillance products are OK. Otherwise they would not teach these kind of services, right?

Most well known example of this is Zoom cancelling an academic debate:

<https://theintercept.com/2020/11/14/zoom-censorship-leila-khaled-palestine/>

Privatisation of collective effort

Unethical practise

Risk of monopoly

Issues

Explanation/ example

Millions of people contribute their corrections and suggestions to suppliers, mostly without being aware of this. (Somewhere deep in the EULA or data processing agreement is "your data may be used to improve our services".)

Google/Bing translate, and the spellings checkers of Google and Microsoft work really well, this is because millions of people contributed their corrections and suggestions to them, mostly without consenting to this use.

The first party that conquers the market can collect the most data, and can thus create a monopoly. As soon as market dominance is achieved, licence prices will sky rocket.

Due to the **network effect** the dominant party is almost impossible to catch up with. Schools, meanwhile, have become dependent and will swallow the price increases.

Proprietary adaptive learning systems not only teach students, also the student is teaching the adaptive system. This is a form of labor that mainly benefits the dominant market player.

Example "rekenluin" uses a ranking system for both students and questions. When a student answers a question wrong, the difficulty rank of the question goes up. Most schools and students are not aware and are not compensated for this free labor they are providing. The results of this collective effort belong in the public domain!

How to restore public values in educational tooling?

Above all:

It matters what you teach!

If you teach unfree surveillance services, that is what you will get:

A surveillance society, ruled by BigTech

By design:

- Privacy
- Public Values
- Ethics

It all starts with the design. Do the tools you choose strengthen the core value's that your school or institution stands for? Choose ethical tools!

Data ownership

Schools and institutions should recognise the value of data. Data created by pupils and students is not theirs to sell

Open standards

Use services built on open standards, that allow you to leave with all of your data, and network relations.
Like: Mastodon on the fediverse

Free, open source software

Choose ethical and open source tools, that an organisation can also selfhost. *Like Jitsi, BigBlueButton or NextcloudTalk*

Attribute cost for lock-in: "**polluter pays**"

Cost for an exit strategy should be attributed to the party that created the lock-in, not to the service that an organisation is migrating to.

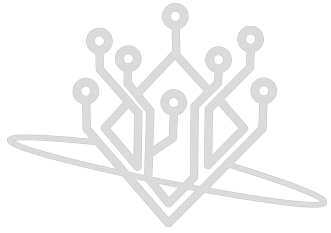
Teach ethical and open source tools

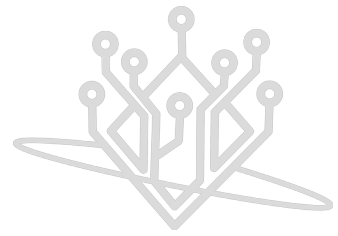
Since it really matters what tools you teach students or pupils, the tools taught in school will also be used and after college or school. Even if you can force BigTech to act GDPR compliant in school, it's unethical to teach those services if those terms are out of reach of school.

Strengthen the public domain!

When we with millions of people collectively train an algorithm, the result of this should be in the public domain, thus use open source algorithms and open data sets.

More Background slides ;)





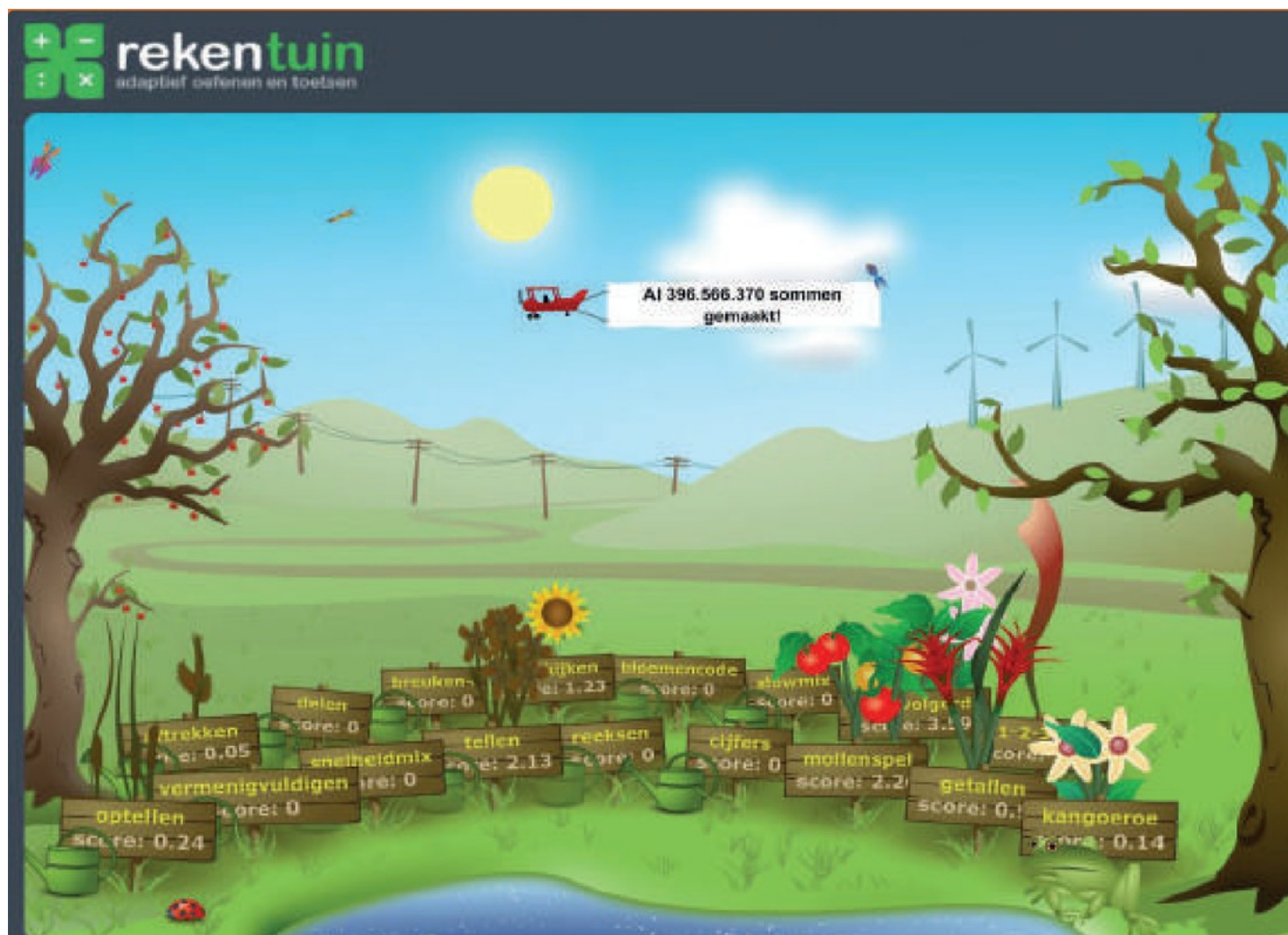
Core issues

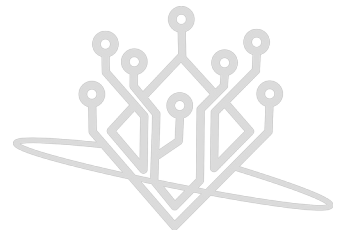
**Privatisation of
collective effort**

- Adaptive learning is hot!
- Payed for 3 times:
 - Scientific research into the method with public money
 - School buys proprietary licenses to use from commercial vendor
 - Kids have to train the algorithm at school --> bigger dataset, increasing prices!



Example case: Reken tuin



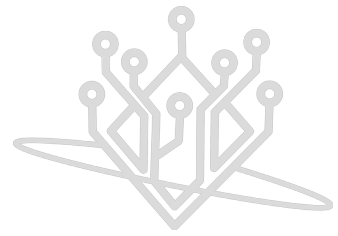


3 types of lock-in

Personal lock-in

Organisational lock-in

Societal lock-in



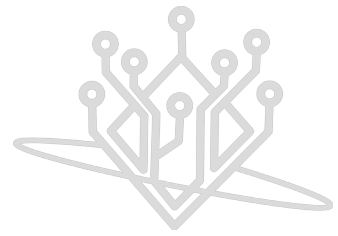
3 types of lock-in

Nice that you love FOSS, but...

Societal lock-in

Continuous links and invites to Big Tech cloud services

- Fill out this Microsoft form please
- Join our zoom meeting
- Here is a Google doc
- Join the school WhatsApp group



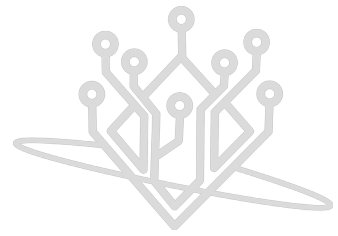
3 types of lock-in

- Classic vendor lock-in:

- Proprietary code
- Lack of open standards
- No proper API's
- Bad documentation

Organisational lock-in

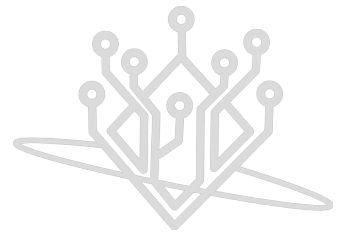
- School has no exit strategy
- Thus migrating complicated and expensive



3 types of lock-in

Personal lock-in

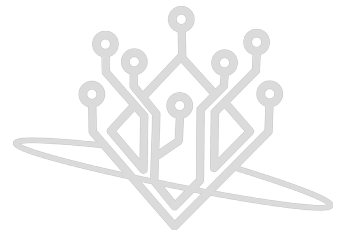
- You spend time to learn a tool
- This is what you are familiar with
- You won't switch easily



Current “Freedom of choice”

- The choice is Google, Microsoft and some iPad schools. **You have no say in that**, school can switch any day
- GDPR “compliant”
 - Schools don't implement the required thick manuals
 - Minimal legal compliance only taken in account other public values are ignored.





4 IT domains in school

Office software:

- Docs
- E-mail
- Videocall
- Calendar

Hardware in class:

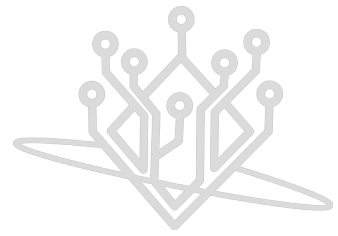
- laptops
- tablets
- and Operating Systems

School specific:

- Learning Management System
- Student Administration System
 - DUO [connection]

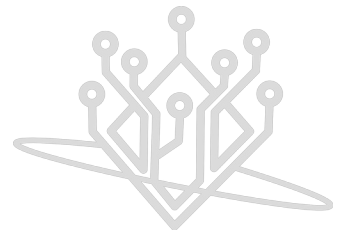
Educational content:

- wikiwijs
- MOOC
- open acces

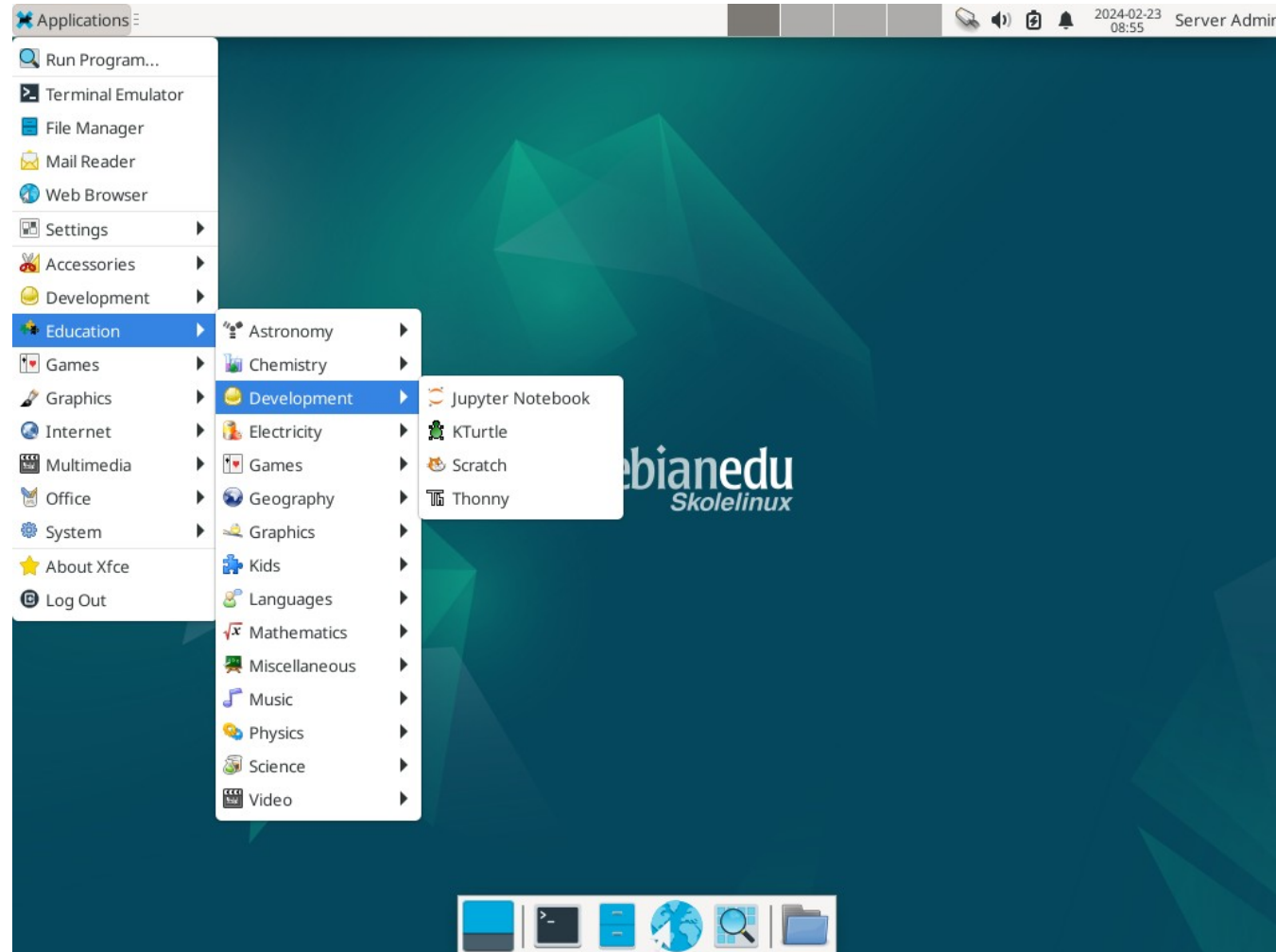


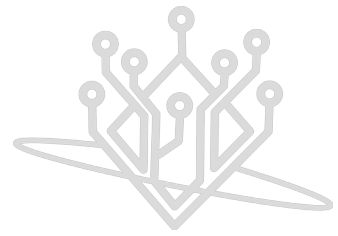
Office and School Specific Software

Function	Functional Component
Identity management	KeyCLOak
Student Administration System	Gibbon / [Zelfbouw CRM module]
Portal	Bureaublad / Univention
File management	Nextcloud Files
Spreadsheet, presentation & document editing	Collabora Online
Email, Agenda & Tasks	OX App Suite / ?
Chat	Matrix Element
Video calling	BBB / Jitsi



Software on Hardware





DebianEDU management server

The screenshot shows the GOsa² web interface in a browser. The browser's address bar displays `https://www/gosa/main.php?global_check=1`. The interface has a dark header with the GOsa² logo and a user login status: "You're logged in as John Doe [jdoe] / Debian Edu".

On the left, there is a sidebar menu with two main sections:

- Administration**
 - Directory structure
 - Users
 - Groups
 - Access control
 - Object groups
 - Sudo rules
 - NIS Netgroups
 - Systems
- Addons**
 - Preferences
 - LDAP tools
 - Password Management

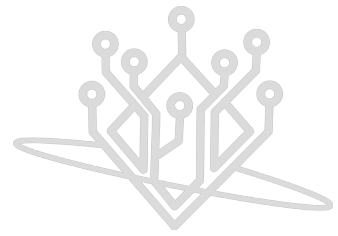
The main content area is titled "Administration" and contains several management options, each with an icon and a brief description:

- Directory structure**: Manage organizations, organizational units, localities, countries and more.
- Users**: Manage aspects of user accounts like generic, POSIX, samba and mail settings.
- Groups**: Manage aspects of groups like members, POSIX, desktop, samba and mail settings.
- Access control**: Control access to GOsa managed objects down to attribute and action level.
- Object groups**: Combine different types of objects to make use of this relationship.
- Sudo rules**: Manage all aspects of system wide sudoers definitions.
- NIS Netgroups**: NIS Netgroups management.
- Systems**: Manage systems, their services and prepare them for use with GOsa.

Below the "Administration" section is an "Addons" section with three items:

- Preferences**: Configure global and special GOsa settings like hooks and plug-in parameters.
- LDAP tools**: Export LDIF or Excel snapshots of the LDAP tree.
- Password Management**: Password Management Add-On.

At the bottom right of the interface, the copyright notice reads: "© 2002-2018 The GOsa team, GOsa 2.7.4".



endof10

- Many Windows10 machines are not suitable for Win11
- Great opportunity for an upgrade to Linux :)
 - With Linux, it can run until it actually breaks

