OERu's Delivery Model for Changing Times

An Open Source NGDLE

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The OERu network

- Is an international consortium of 30+ institutions in 7 global regions
- Offers 1st-year post-secondary courses, assembled entirely from OER
- Provides online services through an open source ‘Next Generation Digital Learning Environment’ (NGDLE) for the benefit of learners, partners, and educators in general
- Is a ‘radically open organisation‘

The call for NGDLEs

- Vast majority of institutions use a Learning Management System… Where is the learner in this?
- 2014 - EDUCAUSE focus groups looked at how learning and teaching could be better supported

Call for NGDLEs as digital ecosystems

- Promoting active learning
- Providing more personalisation
- Supporting diversity
- Retaining coherence

Learning on the internet

- Best way of supporting learners to develop digital and other learning literacies?
  - ✓ Use *the same technologies* they need to build digital fluencies for learning
- Learning on the internet
  - ✓ is less constrained than via an LMS
  - ✓ enables collaborative content creation (even across institutions)
  - ✓ learners control their own work (data sovereignty)
  - ✓ learners *use* the technologies and practices of the *real* digital world

Advantages for learners

Our NGDLE has multiple advantages for learners

- Ability to navigate own way through their learning
- Development of self-directed skills
- Cost savings (e.g. textbooks)
- Variety of dynamic, open materials
- All courses are ‘mobile-friendly’
- Enables lifelong learning
- Learners
  - ✓ control their own data during *and after* study
  - ✓ are never forced to waive rights to use technology (no ‘I ACCEPT’)

Pedagogical opportunities

Opportunities for teaching staff and learning designers include

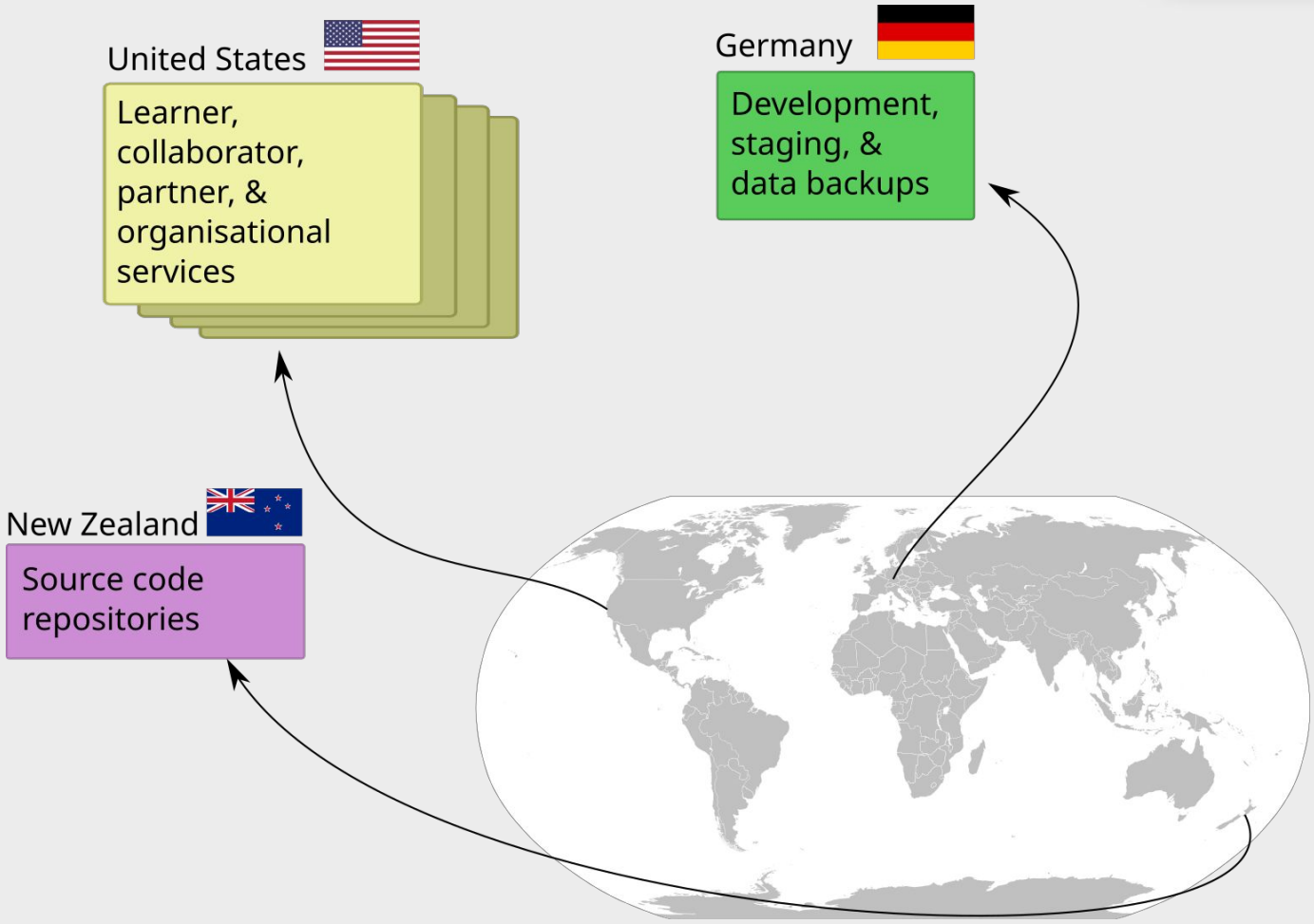
- Identifying, modifying, and developing resources
- Building digital literacy skills including
  - ✓ wiki editing
  - ✓ web writing
  - ✓ using FOSS tools
  - ✓ finding open content
- Understanding open licences and the use of OER
- Embracing opportunities for collaboration and innovation

OERu's proven potential

SUSTAINABLE DEVELOPMENT GOALS

Images from https://www.un.org/sustainabledevelopment/news/communications-material/

OERu's global infrastructure



Globe image credit

Learner-facing ‘Tech Wheel’

Functional & flexible

- Major advantage of the NGDLE: ability to swap in new components
- Advantages for:
  - learner usability
  - application stability
  - maintainability
  - scalability …
- Rapid evolution of overall system

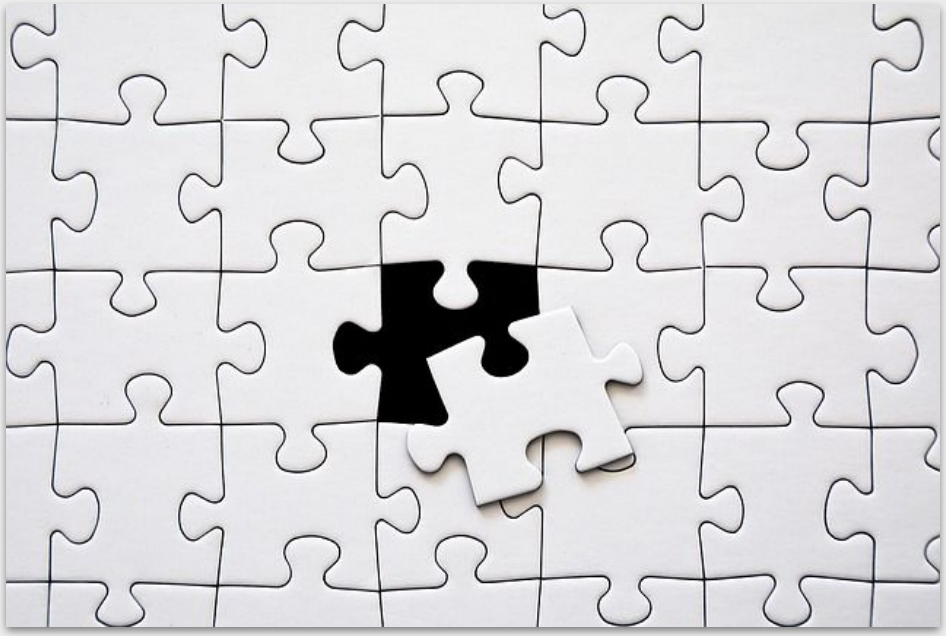


Image by annca from Pixabay

Scalable

- Minimum Viable Product phase (May 2018-May 2019):
  - 2000+ registered learners from 113 countries
  - Allowed technical team to validate everything working
- 6000+ unique *registered* learners from 148 countries (with a further 20,000+ unregistered learners)
- Each individual component already tried and tested at 'internet scale'
- Designed to scale up by adding more servers

Our FOSS NGDLE tech mix

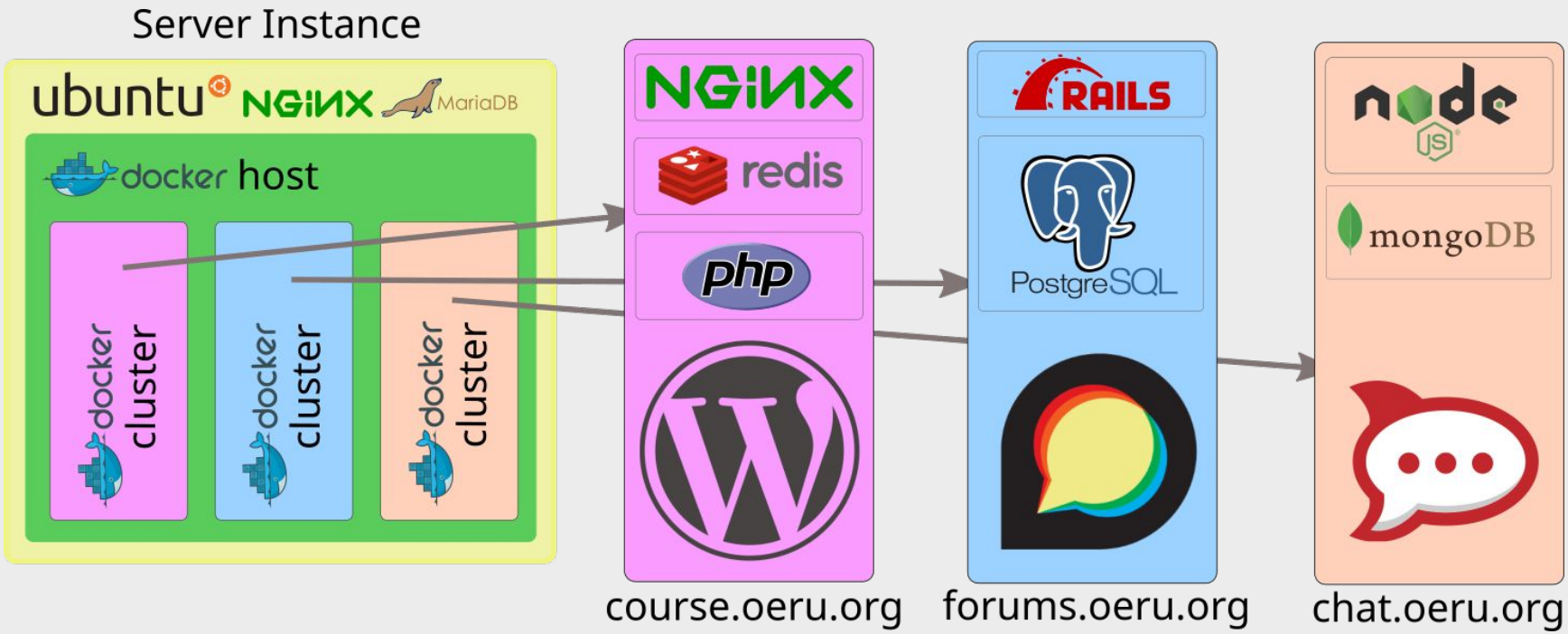
Benefits of diversity

- Diversity enhances resilience
- Our digital ecosystem is diverse in software & *suppliers*.
- Voluntary dependences on communities & commodity service providers, not contractual dependencies on corporations.
- We are *technologically self-reliant*.
- We are *agents of natural selection* in our digital world.
- The challenge: diversity can create complexity.

Managing complexity

Image by Yerson Retamal from Pixabay

Docker: indispensable



Docker: writing recipes

Using  docker to manage FOSS complexity

Docker: share & replicate

tech.oeru.org

The OERu tech-transfer blog providing howtos & overviews of our Docker recipes & our custom FOSS code.

git.oeru.org

The OERu software repository for others to use, adapt, contribute to, & learn from our FOSS code.

Strategic development 1

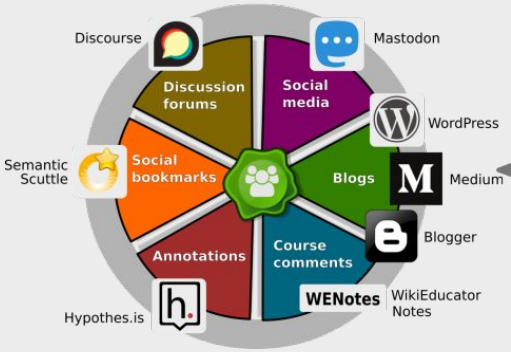
Automating Courseware Deployment

MediaWiki
wikieducator.org

→ OERu course snapshot →

WordPress
course.oeru.org
H5P

Harvesting Distributed Learner Interaction



↔ OERu WEnotes ↔

MediaWiki
WordPress

Strategic development 2

Improving Learner Usability

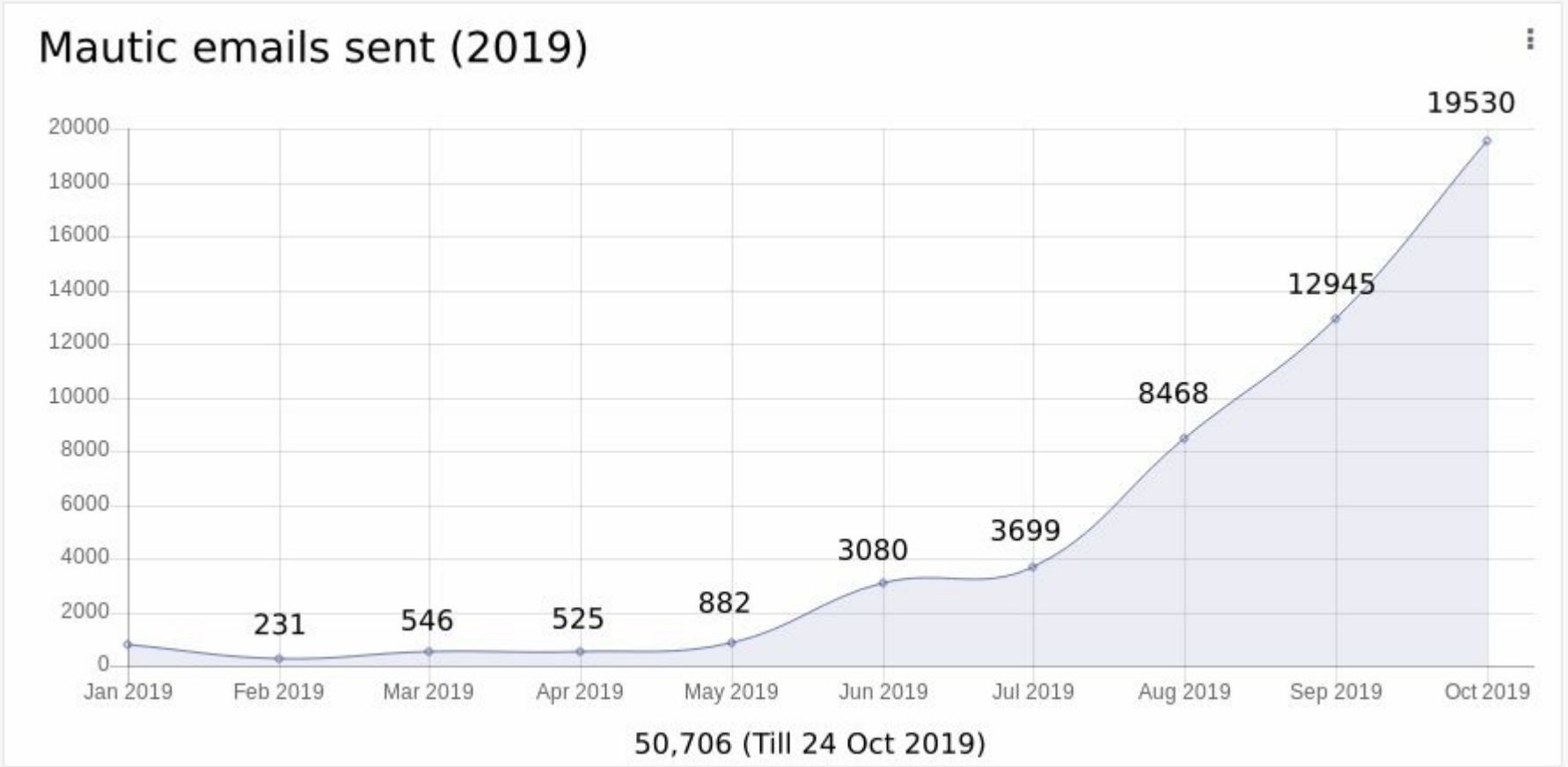
Automating Learner Administration

Cost & return on investment

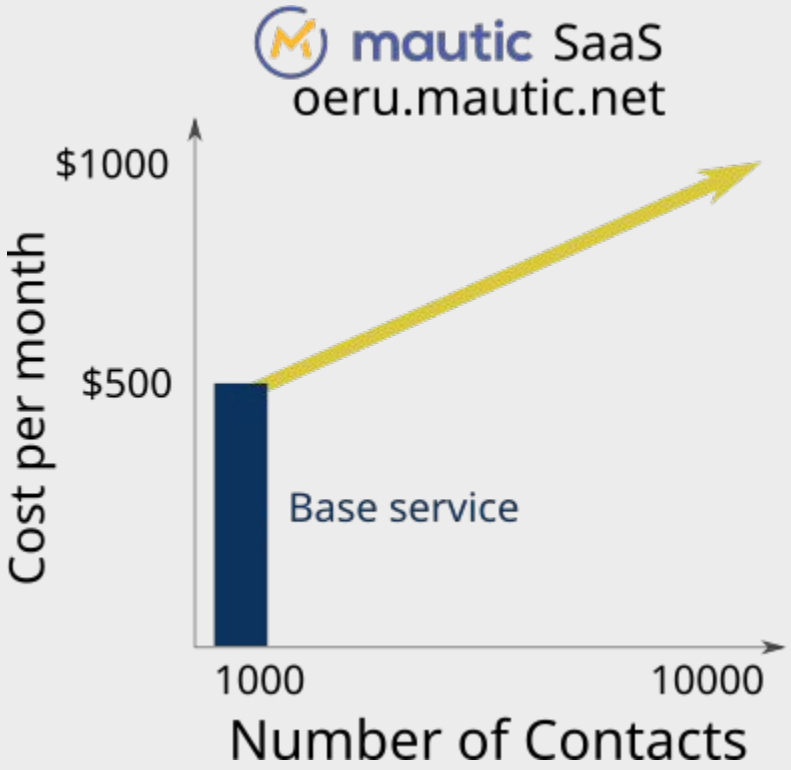
- *Annual* IT costs
  - Fixed costs: infrastructure @ < $4000 + 1 Full time IT person. Wow.
  - Per-learner: ~$0 variable cost
  - Proprietary software licenses? $180 (Zoom)
- ROI maximised by
  - investing in targeted strategic software development
  - sharing maintenance with FOSS communities
- Four tech selection criteria
  - commodity hosting
  - FOSS for SaaS
  - No per-seat cost component
  - account for internal staff time in TCO

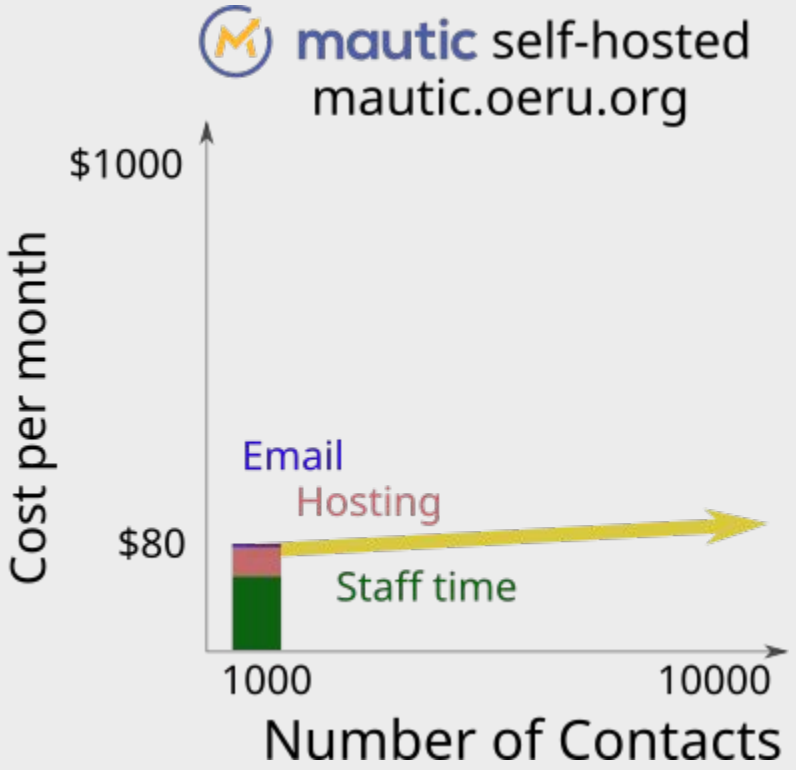
Image by Steve Buissinne from Pixabay

Case study: Mautic



Mautic cost comparison





Conclusion

The OERu's NGDLE offers

- the opportunity to pioneer new approaches
  - Building a rich infrastructure for learners and collaborators
  - Implementing a FOSS end-to-end service
  - Potential to scale up to facilitate learners across the world
- Advantages - both technological and pedagogical
- Incredible cost-effectiveness and adaptability

Our NGDLE experience challenges the status quo for IT infrastructure used by most HE institutions.

It demonstrates the viability of a new, *open* approach.

More info: **OERu.org**

This talk online**: oer.nz/coep19ngdle**

Our FOSS code: **git.oeru.org**

Tech blog: **tech.oeru.org**

OERu