Open Source User Consortia

Prof. Dr. Dirk Riehle

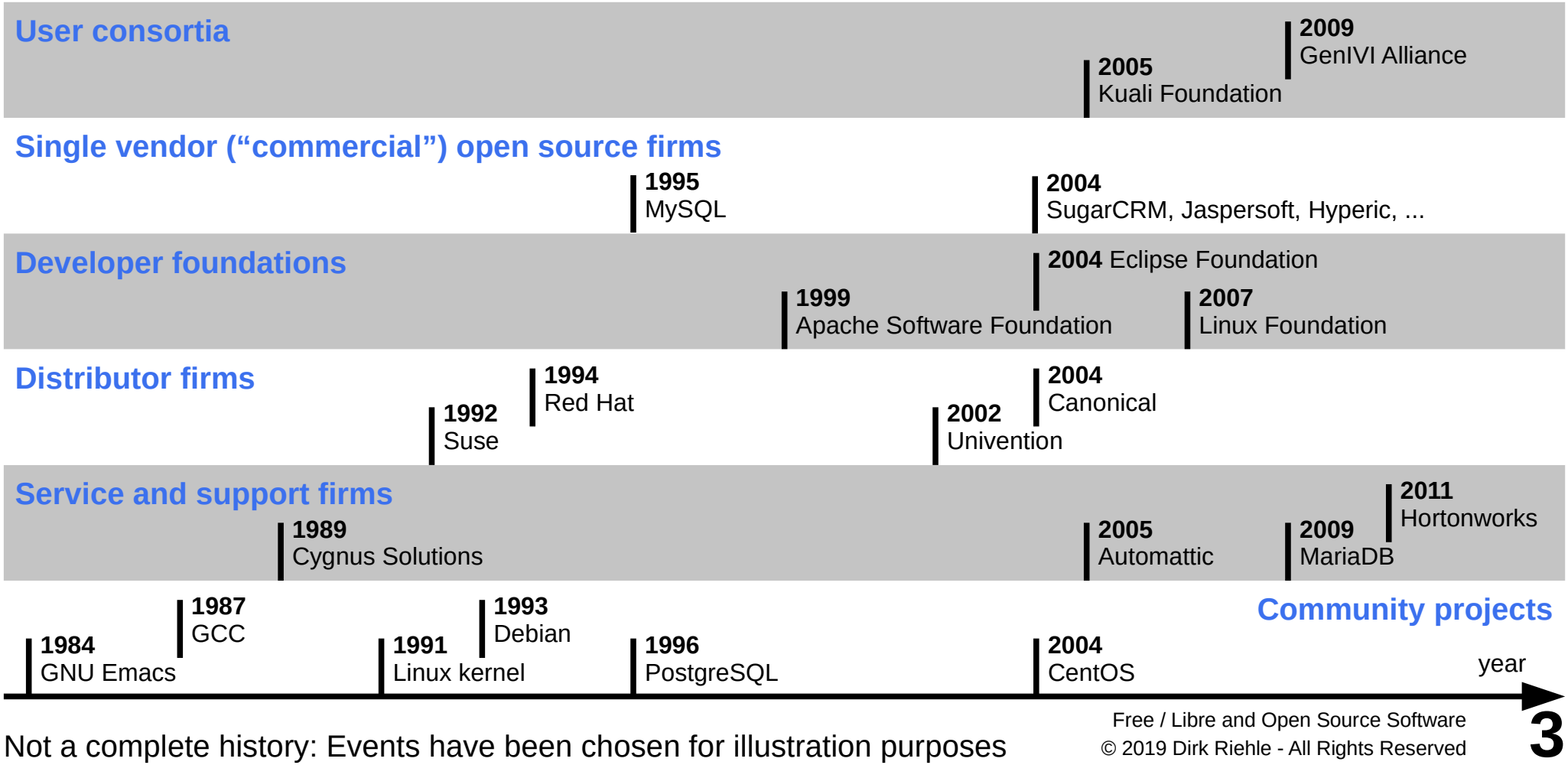
Friedrich-Alexander University Erlangen-Nürnberg

FLOSS C03

Open Source and Innovation

1. Legal innovation
2. Process innovation
3. Software tool innovation
4. **Business model innovation**

Evolution of Open Source Projects (Recap)



Not a complete history: Events have been chosen for illustration purposes

Open Source “Business Models” (Recap)

- Non-profit open source
  - **Community projects** without foundation
  - Open source **developer foundations**
  - Open source **user consortia**
- For-profit open source
  - **Service and support firms**
  - Open source **distributor firms**
  - **Single-vendor** open source **firms**

Project Organization

- Project-based
  - GNU Health
- Formally organized
  - Kuali etc.

Open Source User Consortium

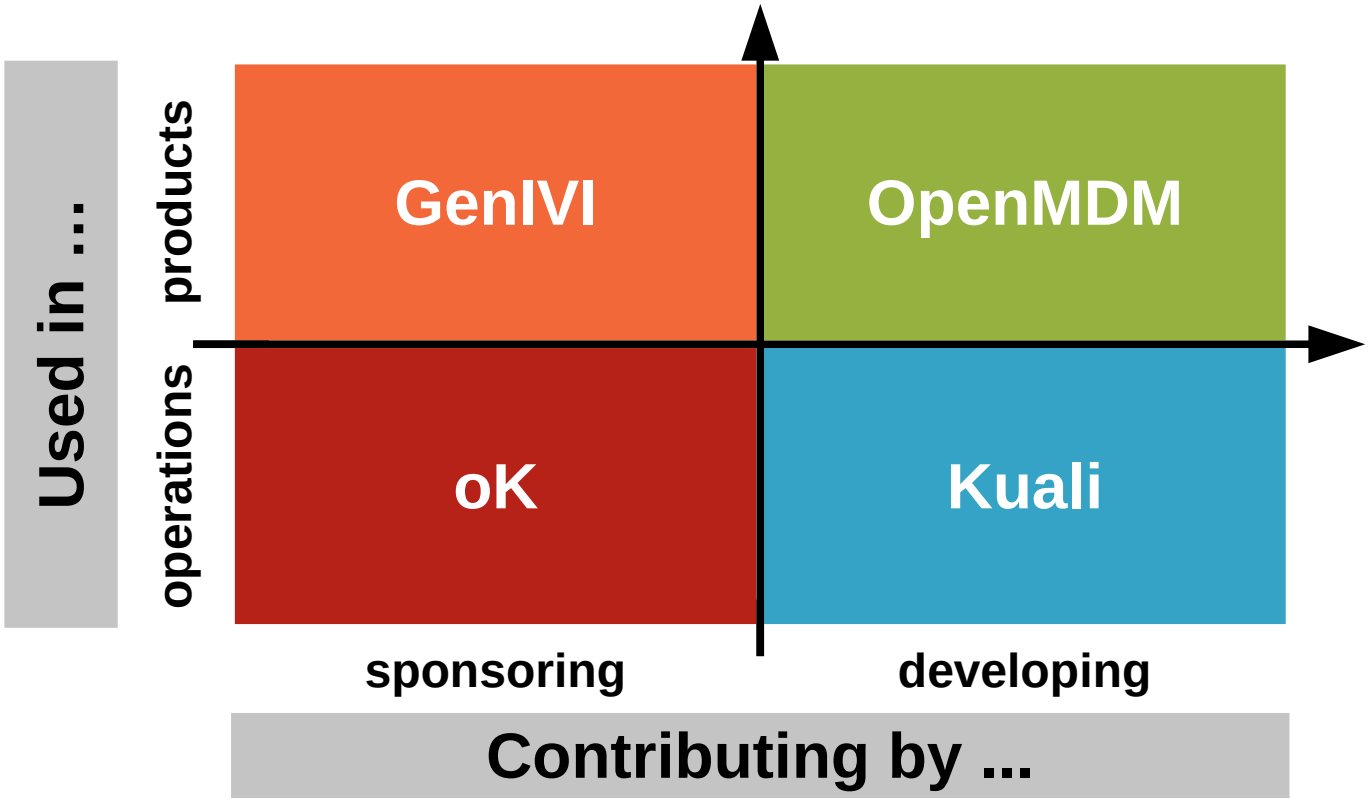
- An **open source user consortium** is
  - a **non-profit organization** (foundation, consortium)
  - with the purpose of **funding and managing the development** of
  - **non-differentiating open source software**
  - made available to foundation members and **the general public**
- Typical members of a user foundation are
  - Software user firms
  - Software vendors
  - Consulting firms
  - Service suppliers

Examples of User Consortium

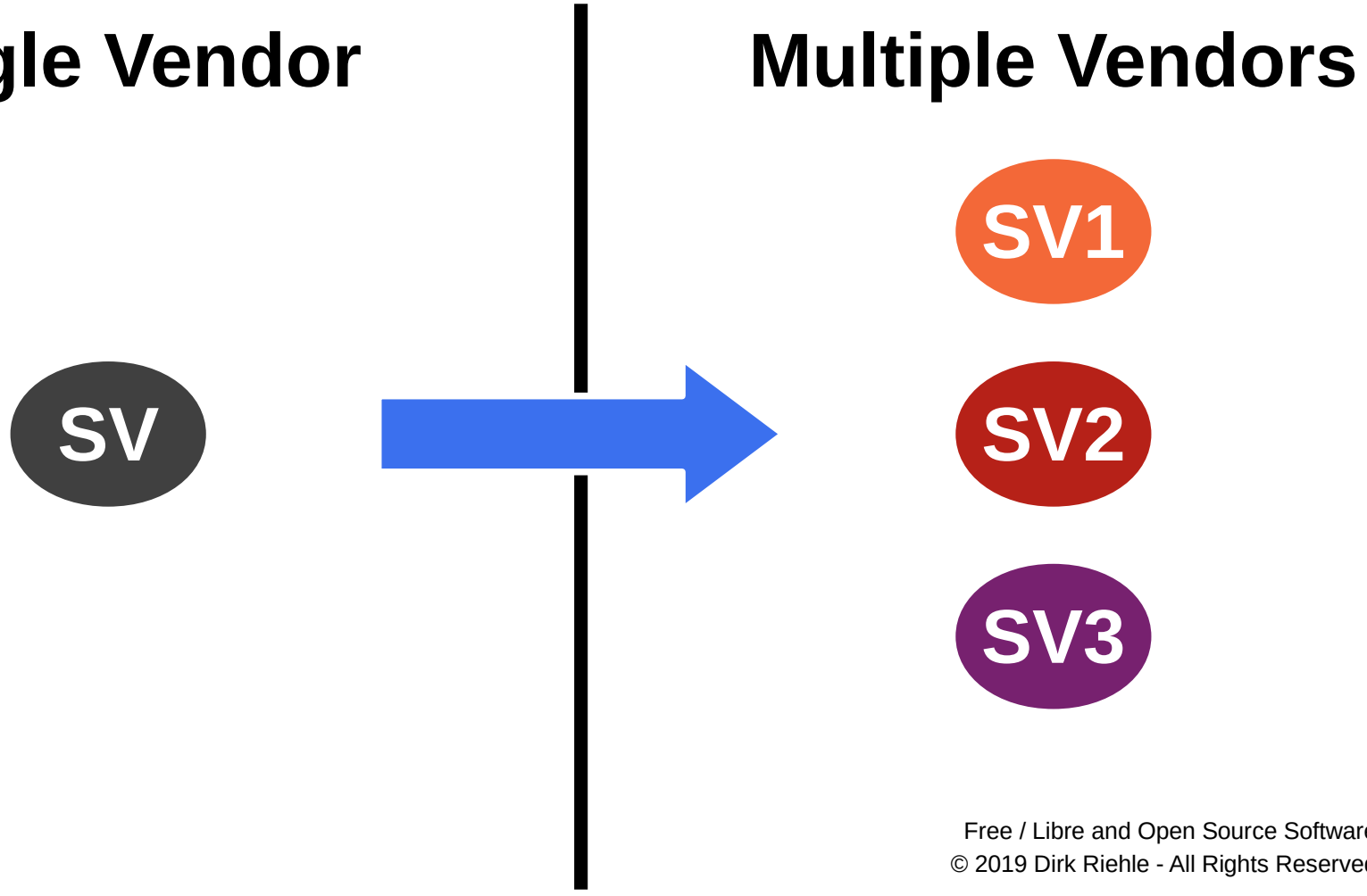
Motivation for User Consortium

To establish a software ecosystem in which vendors and suppliers can provide products and services on an equal playing field.

Classification of User Consortia



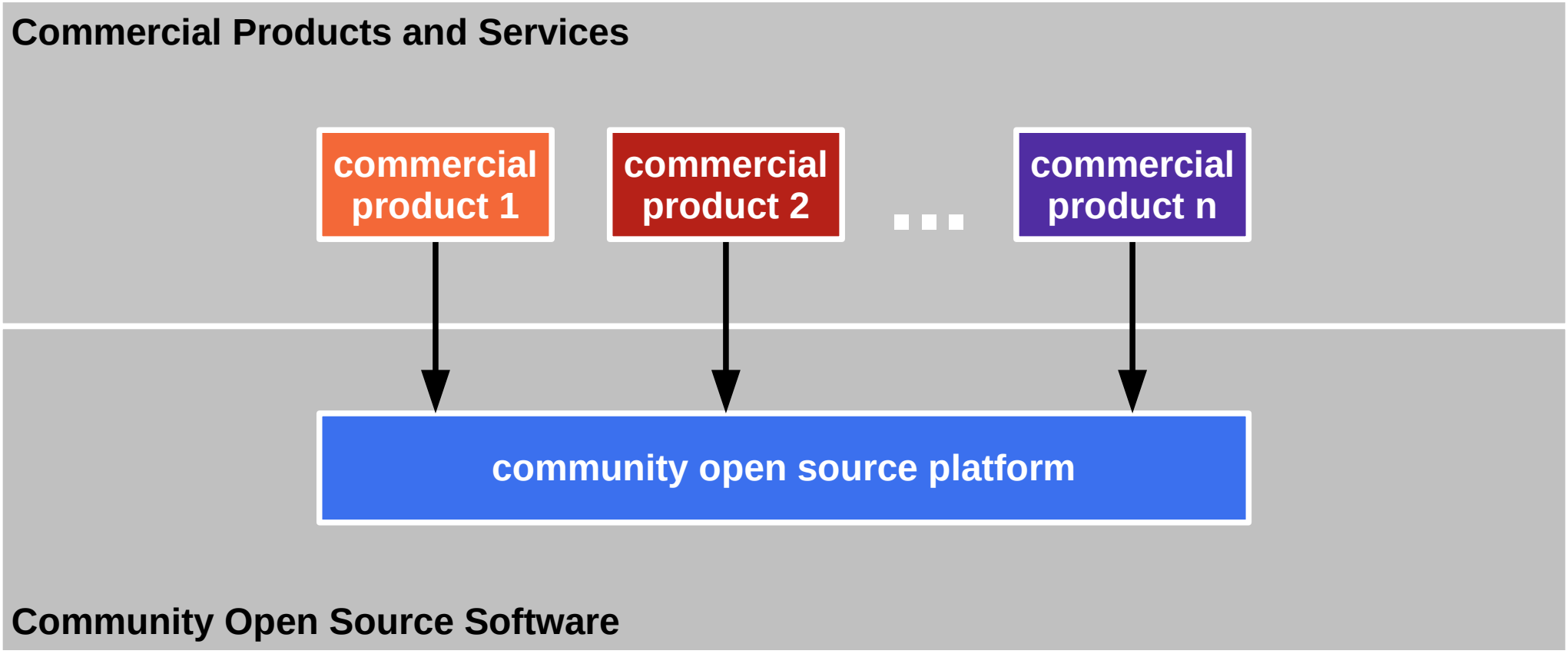
From a Single to Multiple Vendors



Problems with Single Vendor Lock-in

- High total-cost-of-ownership
  - High license fees
  - High customization costs
- No or slow realization of customizations
  - Missed or late product or service innovation
  - Missed or late market opportunities
  - No or late reaction to changing markets
  - Limited predictability of future capabilities
- Increased operational risk
  - What to do if vendor goes out of business?

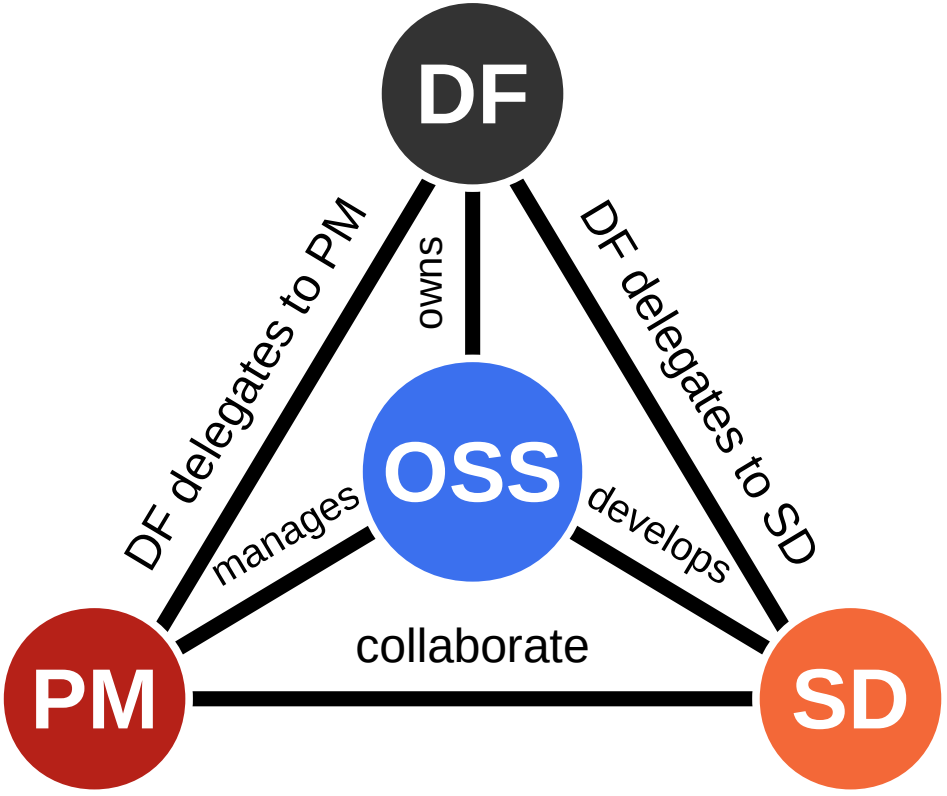
Software and Services Ecosystem



Equal Playing Field

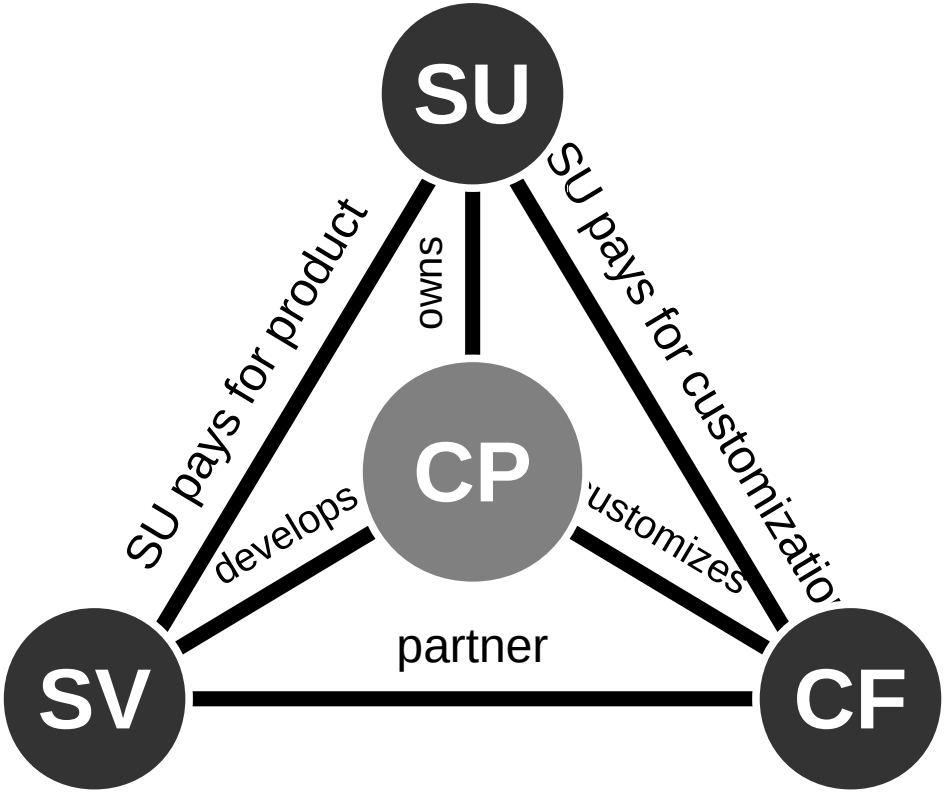
- The software ecosystem needs to be fair
  - Vendors and suppliers need to be able to earn a sufficient living
  - Users want the ability to switch suppliers, avoid lock-in

Community Open Source Software Platform



UF = User foundation
PM = Project management
SD = Software developers

Commercial Product and Services



UC = User company
SV = Software vendor
SS = Services supplier

Prometheus Foundation

- Organization
  - A German (dominated) consortium of insurance companies
- Purpose
  - To develop community
    open source for insurance agents
  - Uses established industry standards (BiPRO)
  - Existing open standards were not sufficient
- Development
  - Sponsors the development of the software by consulting companies
  - Integrates reference architectures into the open source software

GenIVI Alliance

- Organization
  - A consortium of automotive suppliers (Tier 1, 2) initiated and led by BMW
- Purpose
  - To create a common Linux-based platform for in-vehicle infotainment
- Motivation
  - Motivated by frustration about supplier software complexity
- Development
  - Alliance is professionally managed (Inventures)
  - The alliance develops specifications, supports open source implementations

OpenETCS

- Organization
  - An association of European railway operators lead by Deutsche Bahn
- Purpose
  - To develop open source software for ETCS (European Train Control System)
- Motivation
  - Motivated by hardware/software complexity in locomotives
- Development
  - Sponsors the development of open source software for ETCS
  - First development contract was awarded to Alstom in 2010

Cost and Risks to User Companies

- Single Vendor Model
  - Costs
    - **License and maintenance fees**
    - Customization fees
    - Service fees
  - Risks
    - Product dies
    - Innovation stalls
    - Costs escalate
  - Benefits (unclear)
    - Less hassles?
- User Consortium Model
  - Costs
    - License and maintenance fees
    - Customization fees
    - Service fees
  - **Additional costs**
    - **Management attention**
    - **Development costs**
  - **Benefits**
    - **None of the risks**

Motivation for User Consortia

User consortia are typically created when the frustration over suppliers outweighs the (expected) hassles of the foundation.

Advantages over Traditional Consortia

- Established framework
  - Increasingly well-understood legal and governance framework
  - Increasingly well-understood collaboration behavior
- Resulting benefits
  - Faster creation at lower cost, less friction, more trust
  - More legal and collaboration predictability
  - Easier to get skilled developers and firms
- Ultimately, higher likelihood of success

Variants of User Consortia

- Classic stand-alone user Consortia
  - Kuali, apereo, Prometheus, …
- As industry working groups
  - Polarsys, OpenMDM, …
- Strong vendor involvement
  - GenIVI, LocationTech, OpenAPC, …
- Natural-member user foundations
  - OpenStreetMap, OSGeo, OKFN, ...

Kuali Foundation

Motivation for Kuali Foundation

- Higher ed administrators were dissatisfied [CG06]
  - High costs (license, implementation)
  - Lacking performance (fit-to-needs)
  - Opportunity to influence development
- Open source user foundation to the rescue [W07]
  - Satisfy growing demand with modest resources
  - Keep a marketplace from getting monopolized
  - Allows user to influence direction of development

Time-line of Kuali Foundation

- In early 2000, Indiana University faced a legacy ERP replacement
  - In 2002, a gated collaborative approach with partners failed
  - Decided to develop Kuali Financial System using open source approach
  - In 2005, received Mellon Foundation grant for development
- In 2006, with many new University partners, created foundation
- In 2006, adapted MIT Coeus to Kuali Coeus, received grant
- In 2007, started Kuali Student, using another US$ 2.5m grant
- In 2009, for multiple projects, started Kuali Rice infrastructure
- Since then, various other projects have been set on their way
- The Kuali Foundation manages “community source” development

Simplified Blueprint [RB12]

- Organizational set-up
- Purpose and philosophy
- Intellectual property
- Governance: Members
- Governance: Board
- Governance: Projects
- Governance: Development
- Finances and operations

Kuali 1 / 8: Organizational Set-up

- Kuali Foundation
  - Is a U.S.-based 501(c)3 non-profit foundation

Kuali 2 / 8: Purpose and Philosophy

- Purpose
  - To develop open source administrative software for higher education
  - To significantly reduce costs of such software
  - To promote best practices of administration
- Software
  - To be developed collaboratively
  - To be developed internationally
  - To be sustainable undertaking
- Solution
  - Provided commercially through KualiCo

Kuali’s Core Values

- From the bylaws
  - *Kuali Foundation software is open*
  - *Kuali Foundation projects and communities are functionally driven*
  - *Kuali Foundation projects are community source*
  - *Investors and partners in Kuali Foundation projects determine priorities*
  - *Kuali Foundation projects value community diversity*

Kuali 3 / 8: Intellectual Property

- Open source license
  - Affero Gnu Public License v3 (AGPLv3)
  - Provision to students does not constitute “conveyance” (former distribution)
- KualiCo conflicts of interest? [K16]

  What code will Kuali [Co] keep proprietary and not release?

  Our automation and multi-tenant code. See “How do you protect our shared investment so competitors don’t take it and profit from it without contributing?”

Kuali 4 / 8: Foundation Regular Members

- Kuali supports different types of membership
  - Research universities, community colleges, public and private institutions
  - Commercial affiliates
- As of 2016
  - Kuali members: 50+ instituitions
  - Commercial affiliates: 5
- In 2013, used to be 11 commercial affiliates

Kuali 5 / 8: Foundation Board Members

- Consists of 14 members
  - Most appointed, some elected

Kuali 6 / 8: Project Membership

- Projects have a charter
  - Projects are cross-linked
  - Projects are fairly independent
- Projects have members
  - A board (like PMC in developer foundations)
  - Contributors

Kuali 7 / 8: Software Development

- Software development
  - Is project-specific (see project charter)
  - Utilizes foundation services (e.g. legal services)

Kuali 8 / 8: Financing and Operations

- Financing
  - Annual membership dues
- Operations
  - Financial compliance
  - Governance for projects
  - Event management
  - Facilitation in procurement
  - Faclitiation of communities
  - Brand management
- In numbers
  - Kuali Foundation staff: 4
  - KualiCo staff: 31

Summary of Kuali Foundation

- Organization
  - A U.S. foundation of higher education institutions and commercial partners
- Purpose
  - To create all software necessary to run higher education institutions
- Motivation
  - Motivated by high costs and lack of features in existing software solutions
- Development
  - Coordinates the community, provides service through KualiCo

openKONSEQUENZ (oK) [H+13b]

Motivation for oK

- Old closed source model not working
  - Strong supplier dependencies, high costs
  - No or little ability to influence direction, functionality
  - Changes and add-ons not possible or error-prone
- New software challenges (smart grid) ahead
  - Smart grid (Energiewende) and other challenges
  - Single monolithic system is not going to cut it
- Purpose and goals of oKonsequenz
  - Develop software faster better cheaper
  - Reduce or remove vendor lock-in

Time-Line of oK

- 2010: First contact between N-ERGIE and Prof. Riehle
- 2011: Initial gathering of local energy distributors, evangelism
- 2012: Feasibility study (result: Let’s do it!)
- 2013: First specification, financing
- 2014: Eclipse IWG charter developed, RfQ
- 2015: Pilot project starts, currently on-going
- 2016: More specifications, RfQs
- 2017: First production deployment expected

oK 1 / 7: Organizational Set-up

- Originally: Eclipse Industry Working Group (IWG)
  - Organized through a U.S.-based 501(c)3 non-profit foundation
  - At cost of US$ 20000 per year per member
  - Process aborted, now German e.V. planned
- Steering committee +
  - Project planning committee
  - Architecture committee
  - Quality committee
- Since 2017: German eG (eingetragene Genossenschaft)

oK 2 / 7: Purpose and Philosophy

- Purpose
  - To develop open source software for the energy sector
  - To motivate and instigate innovation

oK 3 / 7: Intellectual Property

- Open source license
  - Eclipse Public License

oK 4 / 7: Regular IWG Members

- Different types of membership
  - Driver members
  - User members
  - Service provider members
  - Guest members (incl. non-profits e.g. universities)
- Examples of members
  - Driver members: Distribution Service Operators (DSOs), e.g.
    - MDN, Netring, Westnetz
  - Service provider members: Vendors, e.g.
    - IBM, BTC, SAG
  - Guest members: Non-profit institutions, e.g.
    - OFFIS, Univ. Lübeck, FAU

oK 5 / 7: Project Membership

- Projects are open for everyone

oK 6 / 7: Software Development

- Project planning
  - Planning leads to module specifications
  - Financing secured from members
- Project initiation
  - Requests for quotations
  - Lowest adequate bidder wins
- Software development
  - Different roles interacting
  - Vendor, architecture, quality
- Final inspection and acceptance

oK 7 / 7: Financing and Operations

- Financing
  - Annual membership dues
- Operations
  - Originally handled by Eclipse Foundation
  - Now paid for by joint staff

Summary of openKONSEQUENZ

- Organization
  - An (non-profit) German eG (eingetragene Genossenschaft)
- Purpose
  - To develop open source software for the energy industry
- Motivation
  - Founding members were dissatisfied with closed-source firms
- Development
  - Sponsors development of software through consulting firms

Challenges for User Consortia

- Market size is too small to be sustainable

Dysfunctions of User Foundations

- Over-reliance on one provider creates lock-in

Review / Summary of Session

- User foundations
  - Definition and purpose
  - Economics and governance
- Example user foundations
  - Kuali foundation
  - openKONSEQUENZ

Thank you! Questions?

dirk.riehle@fau.de – http://osr.cs.fau.de

dirk@riehle.org – http://dirkriehle.com – @dirkriehle

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  - None yet