

Open Source User Consortia

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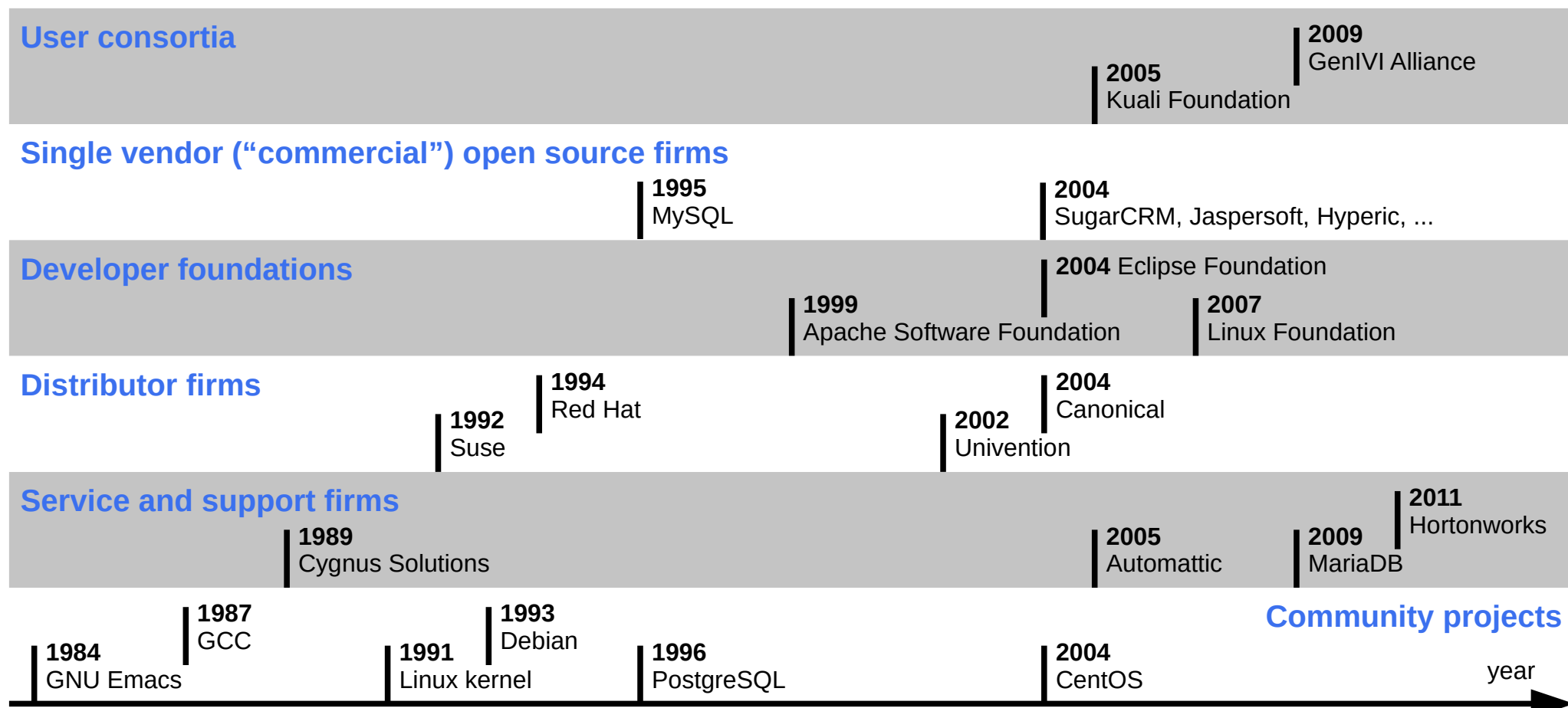
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FOSS C03

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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
 - Kualiti etc.

Open Source User Consortium

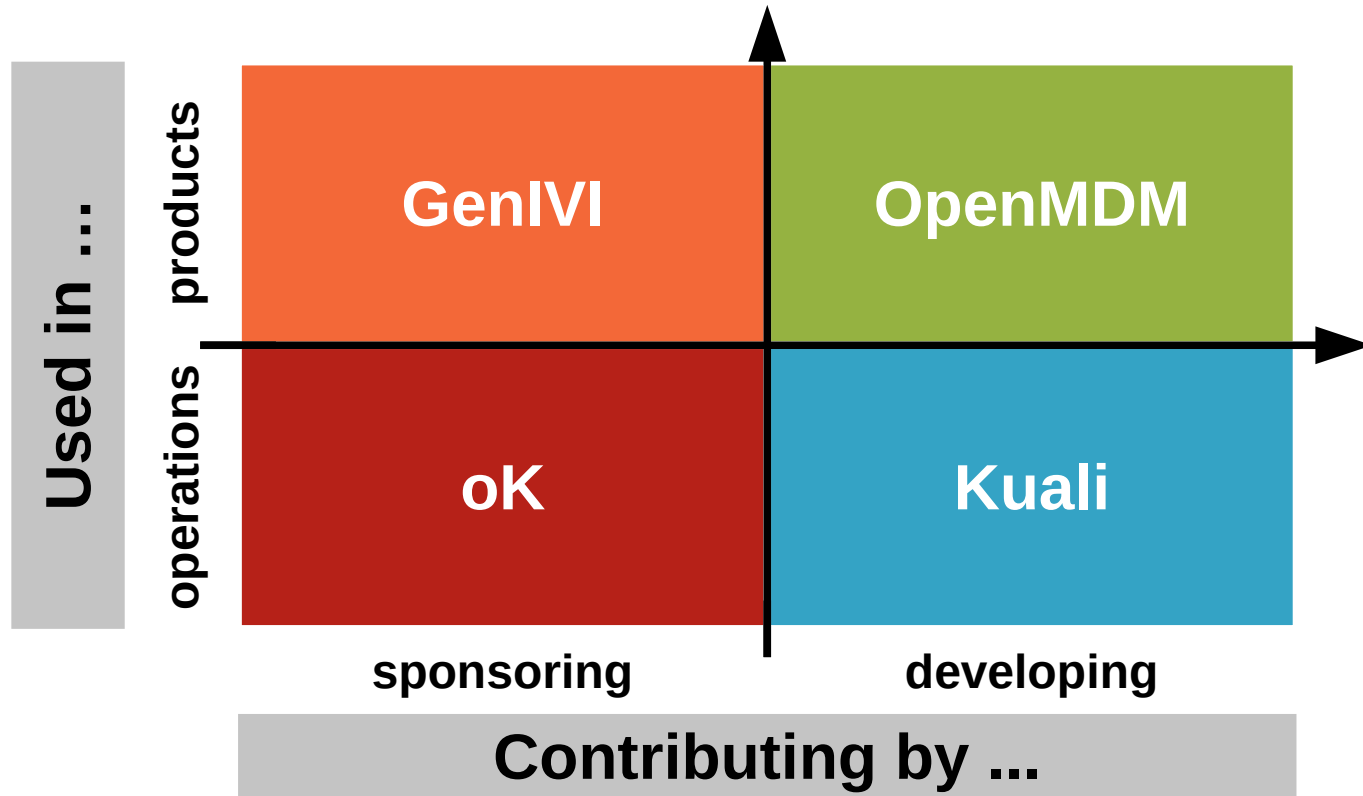
- An **open source user consortium** is
 - a **non-profit organization** (foundation, consortium)
 - with the purpose of **funding and managing** the development of
 - **non-differentiating open source software**
 - made available to foundation members and **the general public**
- Typical members of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

Examples of User Consortium



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

Single Vendor



Multiple Vendors

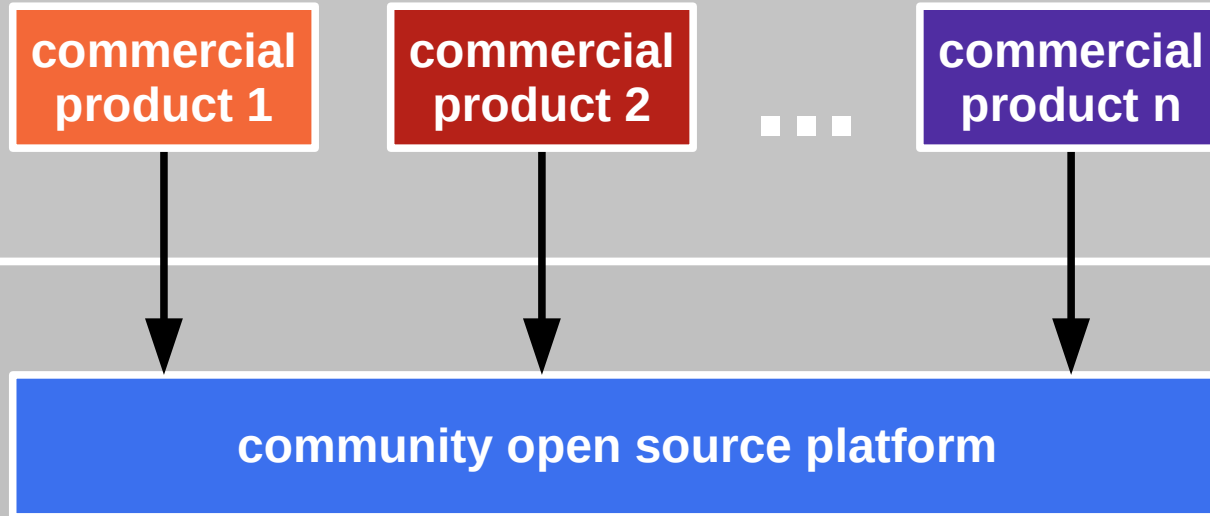


Problems with Single Vendor Lock-in

- 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

Commercial Products and Services

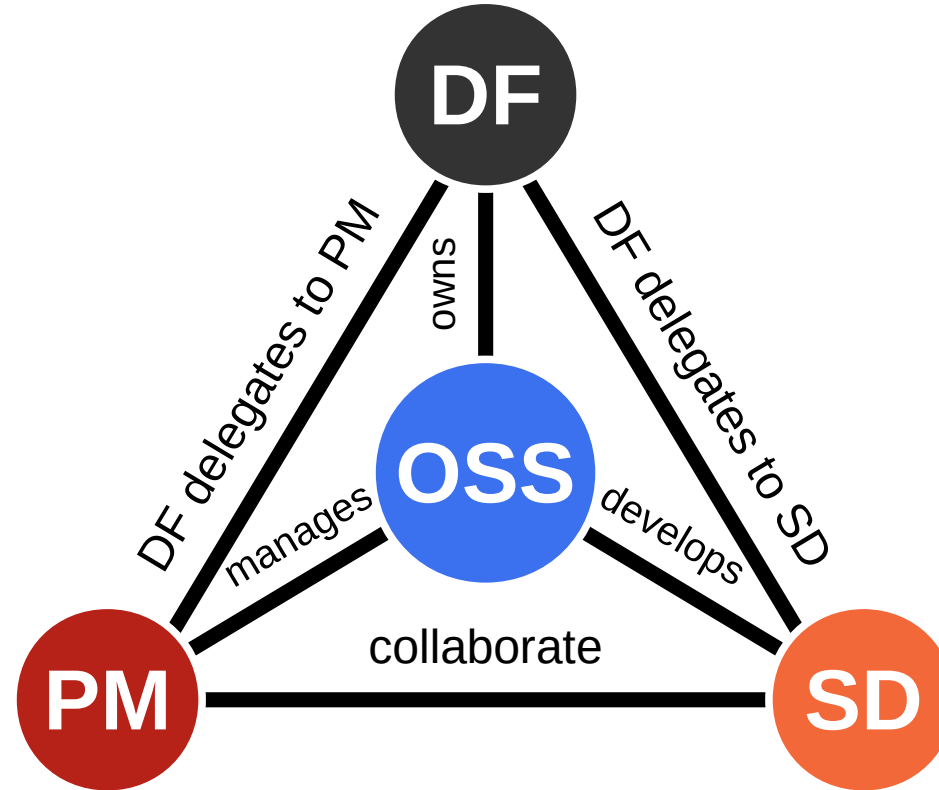


Community Open Source Software

Equal Playing Field

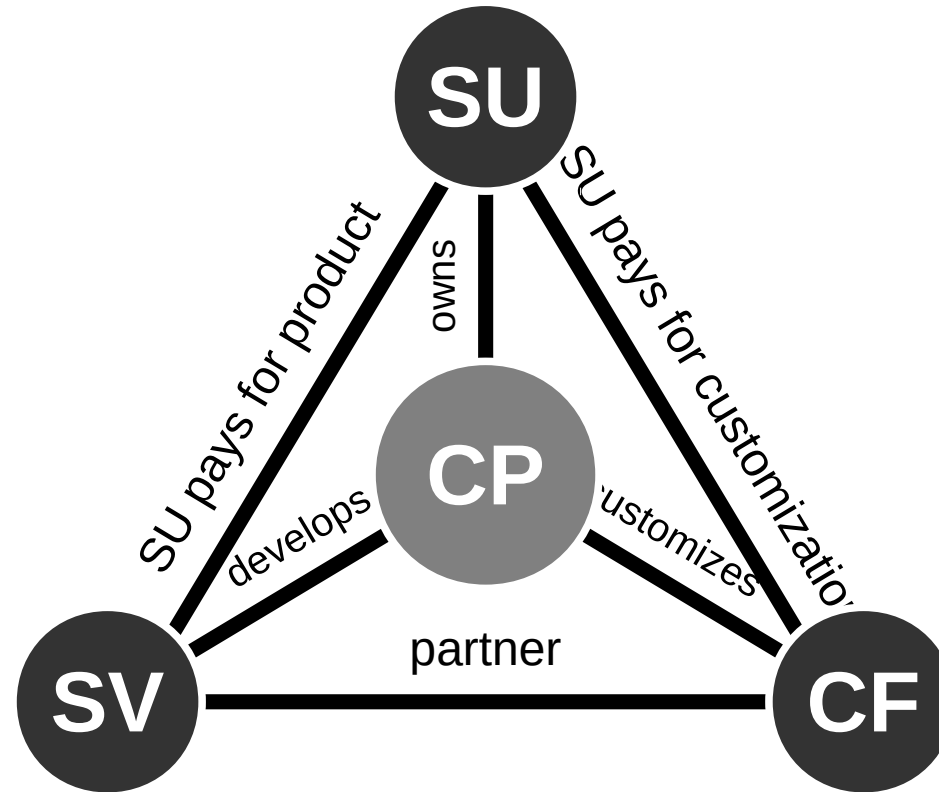
- The software ecosystem needs to be fair
 - Vendors and suppliers need to be able to earn a sufficient living
 - Users want the ability to switch suppliers, avoid lock-in

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

- 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



- 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



- 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**

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
 - Quali, apereo, Prometheus, ...
- As industry working groups
 - Polarsys, OpenMDM, ...
- Strong vendor involvement
 - GenIVI, LocationTech, OpenAPC, ...
- Natural-member user foundations
 - OpenStreetMap, OSGeo, OKFN, ...



Motivation for Quali 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+ institutions
 - 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
 - Facilitation 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



open KONSEQUENZ

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?

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