

Working in Open Source



open source
initiative®

Patrick Masson

General Manager & Board Director

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Adobe, Amazon, Apache Software Foundation, **Apple, Benetech,** Harvard University, **Capital One,** Carnegie Mellon, **Canonical, Cisco,** Creative Commons, Debian, **Dell,** Drupal Association, **Dropbox,** Eclipse Foundation, edX, **Elastic,** Electronic Frontier Foundation, **Facebook,** Free Software Foundation, Gates Foundation, **Github, Google, Hewlett-Packard, IBM, Intel,** LibreOffice, Linux Foundation, **Lucidworks, Microsoft,** MIT, Mozilla, **NASA/Goddard Space Flight Center, Novell, Oracle,** O'Reilly Media, **PayPal,** Perl Foundation, Python Foundation, **Red Hat,** Sunlight Foundation, **Sun Microsystems, Sony,** SUNY, Tufts University, **Twitter,** UCLA, UMass, **VMware, The White House,** Wikimedia Foundation, **Wipro,** World Wide Web Foundation...

The Open Source Initiative protects and promotes open source software, development and communities, championing software freedom in society through collaboration, education, and infrastructure, stewarding the Open Source Definition, and preventing abuse of the ideals and ethos inherent to the open source movement.





OSI Affiliate Membership

- Apache Foundation
- Creative Commons
- Debian Project
- Document Foundation (LibreOffice)
- Drupal Association
- Eclipse Foundation
- Fedora Project
- FreeBSD Foundation
- Joomla (Open Source Matters)
- KDE e.V.
- Linux Foundation
- Mozilla Foundation
- Open EdX
- Plone
- Python Software Foundation
- Software Freedom Conservancy
- The Perl Foundation
- Wikimedia Foundation
- Wordpress Foundation

IRS Puts Open Source Projects Under Microscope, Spawns Nonprofit Black Hole

BUSINESS DESIGN ENTERTAINMENT GEAR SCIENCE SECURITY

ROBERT MCMILLAN 06.27.13 6:30 AM

IRS PUTS OPEN SOURCE PROJECTS UNDER MICROSCOPE, SPAWNS NONPROFIT BLACK HOLE

Bills Resolutions Calendars Meetings Transcripts Actions Sponsor Committee

OPEN Search | Advanced

Bill S161-2015

Provides a maximum \$200 tax credit for taxpayer expenses associated with the development of open source and free software license programs

[Print Page](#)
[Original Bill Format \(PDF\)](#)
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Provides a maximum \$200 tax credit for taxpayer expenses associated with the development of open source and free software license programs.

NEWS



Computer scientists oppose Oracle's bid to copyright Java APIs

Copyrighting the Java APIs would hurt innovation and deny end users affordable technology, says EFF brief

By James Nicolai
 IDG News Service | MAY 31, 2013 04:35 PM PT

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CITY & COUNTY OF SAN FRANCISCO

Local Agency Formation Commission

Home About the Board Clerk of the Board Legislative Research Center (LRC) Meeting Information Legislation Introduced Legislation Passed Forms & Documents

Home » Board's Divisions » LAFCO

Local Agency Formation Commission

LAFCo is responsible for reviewing and approving proposed jurisdictional boundary changes, including annexations and detachments of territory to and/or from cities and special districts, incorporations of new cities, formations of new special districts, and consolidations, mergers and dissolutions of existing districts. In addition, LAFCo must review and approve contractual service agreements, determine spheres of influence for each city and district, and may initiate proposals involving district consolidation, dissolution, establishment of subsidiary districts, mergers, and reorganizations (combinations of these jurisdictional changes).

The full text of the LAFCO law can be found in Government Code Section 56000, et seq.




Software License Agreement

This Software License Agreement (the "Agreement") is made effective as of this _____ day of _____, 20____, by and between _____, a _____ corporation ("Licensee"), and _____, Inc. ("Company").

Company and Licensee make agreement that the following terms and conditions will pertain to any use of the Company's _____ software, in machine readable (object code) form, and any materials provided by the Company from time to time in electronic form (collectively, the "Materials") are referred to jointly in this Agreement as the "Software".

contained in this Agreement, the parties agree to the following terms:

License:

No. 13-298

IN THE
Supreme Court of the United States

ALICE CORPORATION PTY. LTD.,
Petitioner,

vs.
 CLS BANK INTERNATIONAL, et al.,
Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES
 COURT OF APPEALS FOR THE FEDERAL CIRCUIT

**BRIEF OF AMICUS CURIAE
 ELECTRONIC FRONTIER FOUNDATION
 IN SUPPORT OF RESPONDENTS**



Helping organizations authentically engage.

February 16, 1999

Self-Proclaimed Computer Geeks Hold 'Windows Refund Day'

By AMY HARMON

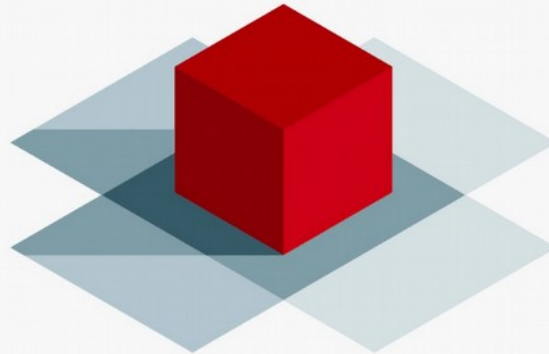
As mass movements go, Windows Refund Day might not have achieved the political profile of an anti-war protest or the popular support of, say, saving the whales. But for a demonstration over computer software, the turnout Monday was not too shabby.



<https://archive.nytimes.com/www.nytimes.com/library/tech/99/02/biztech/articles/16windows.html>

OPEN SOURCE WON. SO, NOW WHAT?

KLINT FINLEY BUSINESS 08.11.16 07:00 AM



<https://www.wired.com/2016/08/open-source-won-now/>




<https://www.theverge.com/2016/9/15/12926288/microsoft-really-does-love-linux>




PARIS CALL
SOFTWARE SOURCE CODE
AS HERITAGE FOR SUSTAINABLE DEVELOPMENT

“All sectors of modern industry and commerce use and/or produce software, and the amount of free and open source software that is reused is booming.”



United Nations
Educational, Scientific and
Cultural Organization



Inria
inventors for the digital world

PARIS CALL: “Software Source Code as Heritage for Sustainable Development”, UNESCO, Feb. 2019

<https://en.unesco.org/foss/paris-call-software-source-code>



SECTION 2
CORPORATE USE

78% OF COMPANIES
RUN ON OPEN SOURCE

LESS THAN 3%
DON'T USE OSS IN ANY WAY



SECTION 2
CORPORATE USE

CORPORATE PARTICIPATION IN OPEN SOURCE PROJECTS ON THE RISE

64% SAID THEIR
COMPANIES CURRENTLY PARTICIPATE IN OPEN SOURCE PROJECTS



SECTION 2
CORPORATE USE

IN THE NEXT 2-3 YEARS CORPORATE PARTICIPATION WILL **DEEPEN FURTHER**

@FUTUREOSS #FUTUREOSS

39%
PLAN TO START OWN EXTERNAL OSS PROJECT
UP 9% FROM 2014

47%
WILL RELEASE INTERNAL TOOLS AND PROJECTS AS OPEN SOURCE
A 18% INCREASE FROM 2014

53%
EXPECT TO REDUCE BARRIERS TO EMPLOYEE PARTICIPATION IN OSS
UP 13% FROM 2014

2015 Future of Open Source Survey Results

NorthBridge & Black Duck Software

<https://www.slideshare.net/blackducksoftware/2015-future-of-open-source-survey-results/>

Open Source Support Report



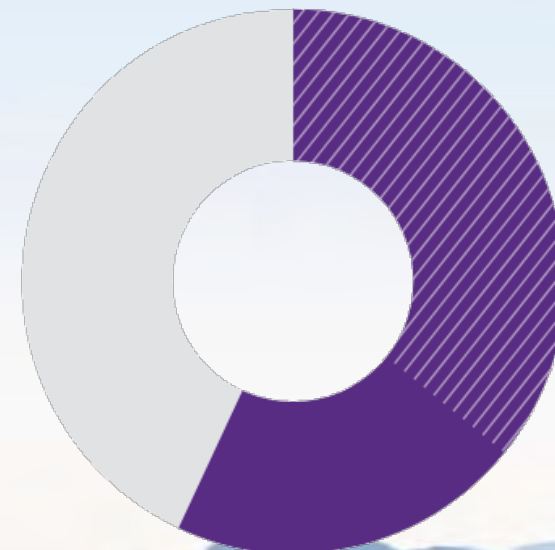
“The old story of needing to understand if your organization uses open source has shifted to how and how much open source is in your applications,” wrote Rod Cope, CTO of Rogue Wave, in the report. **“It’s no longer worthwhile for management to discourage open source. We’ve reached a point of acceptance. But with this open source comes issues that aren’t necessarily familiar to the enterprise.”**

Open Source Software found in 98% of audits

2018 Open Source Security
and Risk Analysis
Synopsys
Center for Open Source
Research & Innovation



96% of applications include open source components, with an average **257** components per application.



Average percentage of codebase that is open source: **57%** (36% in 2017). Many applications now contain more open source than proprietary code.



Salary Estimate

\$85,000+ (6987)

\$95,000+ (5987)

\$105,000+ (4491)

\$115,000+ (2831)

\$125,000+ (1368)

Median Pay: **\$100,690/year**

Education: **Bachelor's degree**

Number of Jobs, 2014: **1,114,000**

Job Outlook, 2014-24: **+17%**

Growth, 2014-24: **+186,600**

what

Open Source Software Developer

job title, keywords or company

where

city, state, or zip

Find Jobs

Location

Seattle, WA (612)

San Francisco, CA (599)

New York, NY (524)

Chicago, IL (224)

Boston, MA (217)

Annapolis Junction, MD (203)

Washington, DC (185)

San Jose, CA (171)

Austin, TX (171)

Redmond, WA (149)

Atlanta, GA (137)

Sunnyvale, CA (137)

Palo Alto, CA (121)

San Diego, CA (118)

Companies

Amazon Corporate (487)

Capital One (217)

Microsoft (172)

US Gov. / DoD / NSA (119)

Toyota (102)

JPMorgan Chase (81)

Netflix (73)

Verizon (53)

Google (49)

IBM (49)

Oracle (48)

Northrop Grumman (43)

Booz Allen Hamilton (42)

Apple (30)

Boeing (12)

Disney (11)

ESPN (11)

Software Engineer: AI & Research, Bing Platform



Qualifications:

- **Minimum BS in Computer Science or equivalent** is required
- **3+ years relevant experience** is required
- **Technical skills:** OOP language (C/C++/C#/Java) is required; web client technologies (JS/Typescript, CSS, HTML) on large-scale applications is preferred.
- **Experience with open-source** tools like Docker, Mesos, and Kubernetes.

Full Stack Software Engineer



Qualifications:

- **Bachelor's degree in Computer Science** or equivalent industry experience
- **5+ years of experience**
- **Technical skills:** Java and newer JVM-based languages such as Scala or Clojure, streaming solutions like Storm, Flink, Flume or similar, message queues like Kafka or Rabbit, databases like Oracle, Teradata
- **Experience with latest open source** technologies Spring, Apache commons
- **Strong written and oral communication skills**

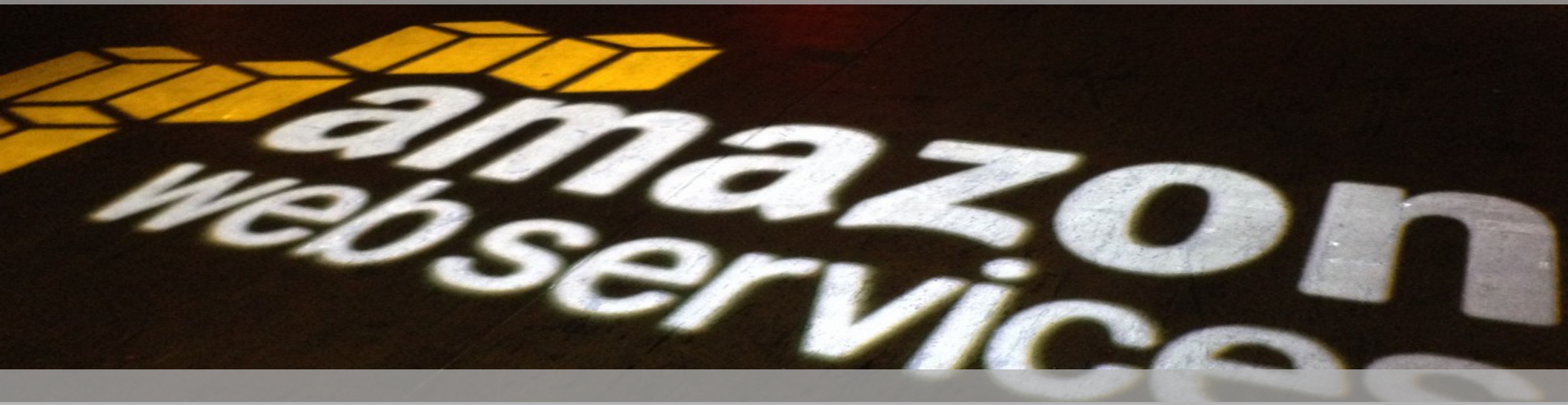
Software Engineer (Full-Stack) - Ads Innovation



Qualifications:

- **BS, MS, or PhD in Computer Science, Electrical Engineering or equivalent work experience**
- **Technical Skills:** Extensive experience with low-level programming (C, C++, Vectorization, ...); Familiarity with Torch and/or Lua; Strong algorithms and data structures background; Familiar with Machine Learning and/or Deep Learning; Experience with CUDA (GP-GPU) programming.
- **Experience working closely with the the open source community.**

Software Engineer



Qualifications:

- **Bachelor's degree in Computer Science or related field**
- **5+ years experience** building production software systems
- **Technical skills:** OO design/development (Java, C/C++, Objective C, Python) and open-source technologies (Linux, SQLite, OpenGL, Spring, Hibernate)
- **Demonstrated ability to mentor other software developers** to maintain architectural vision and software quality. Excellence in technical communications with both technical and non technical peers.

Staff Software Engineer - PlayStation Video



Qualifications:

- **BS or MS in Computer Science, or comparable experience**
- **9+ years of experience**
- **Technical skills:** Java and development experience in developing web server applications, Agile/Scrum software development methodologies and strong understanding of engineering best practices
- Strong written and verbal communication skills
- Experience in multiple software platforms and/**or open source software development**

Senior Software Engineer, Multimedia



Qualifications:

- **BS or MS degree in Computer Science or equivalent experience**
- **5+ years of experience**
- **Technical skills:** Java/J2EE, Spring, REST, HTTP/HTTPS, AWS, Relational and NoSQL databases; Service oriented Software Architecture; Web service development, REST APIs, XML/JSON; Jenkins, Rundeck, Maven, Git/GitHub; Angular, jQuery, Node.js
- Excellent written and verbal communication skills; Self-learner, independent, and have outstanding problem-solving skills
- **Experience in Open source communities including Spring and Apache related modules**



***There are no open source software developers,
only developers of open source software.***

Finding the right mix of experience and skills is difficult for 87% of hiring managers, very similar to the 89% who said so last year and 87% in 2016.

Fifty-two percent would also like their employer to establish clear policies and procedures for using and contributing to open source.

The 2018 Open Source Jobs Report

Senior Program Manager

Redmond, Washington, United States

Over the past few years Microsoft has made great progress in open source. **Teams who have learned to embrace open source as a set of best development practices** are now looking with great interest at inner source as they want to use the same approach and tools they have grown accustomed to **for their internal and proprietary efforts.**

To be successful in this role you need significant experience in open source at the contributor level as well as a good understanding of the dynamics of a large engineering community. You will spend a lot of time meeting with product teams across Microsoft to understand the way they build software so that you can design, implement, and promote the right set of tools and processes to **help give Microsoft engineers a great developer experience and a seamless transition between open source and internal efforts.**

Todo Group: Adobe, ARM, Autodesk, AWS, Bloomberg, Box, Capital One, ChangeHealthcare, Comcast, Datadog, Didi, Dropbox, Ebay, Facebook, Github, Google, HP, Huawei, KhanAcademy, IBM. Indeed, Intel Juniper, Microsoft, National Instruments, Netflix, PayPal, Pinterest, Pivotal, Qualcomm, Red Hat, Salesforce, Samsung, SanDisk, SAP, Spotify, Square, Target, Toyota, Twitter, Uber, VMWare, Walmart, Wipro

Use open source code for non-commercial or internal reasons



93%

Use open source code in commercial products



79%

Contribute code upstream



69%

Recruit and hire developers to work on open source projects



Create its own open source projects



60%

Train developers to contribute to open source projects



53%

Attend and speak at open source events or conferences



Throughout your career working in open source...

Throughout your career working in open source...

How will you know what projects to use?

Throughout your career working in open source...

How will you know what projects to use?

How will you know what projects to contribute to?

Throughout your career working in open source...

How will you know what projects to use?

How will you know what projects to contribute to?

How can you set your project up to succeed?

Throughout your career working in open source...

How will you know what projects to use?

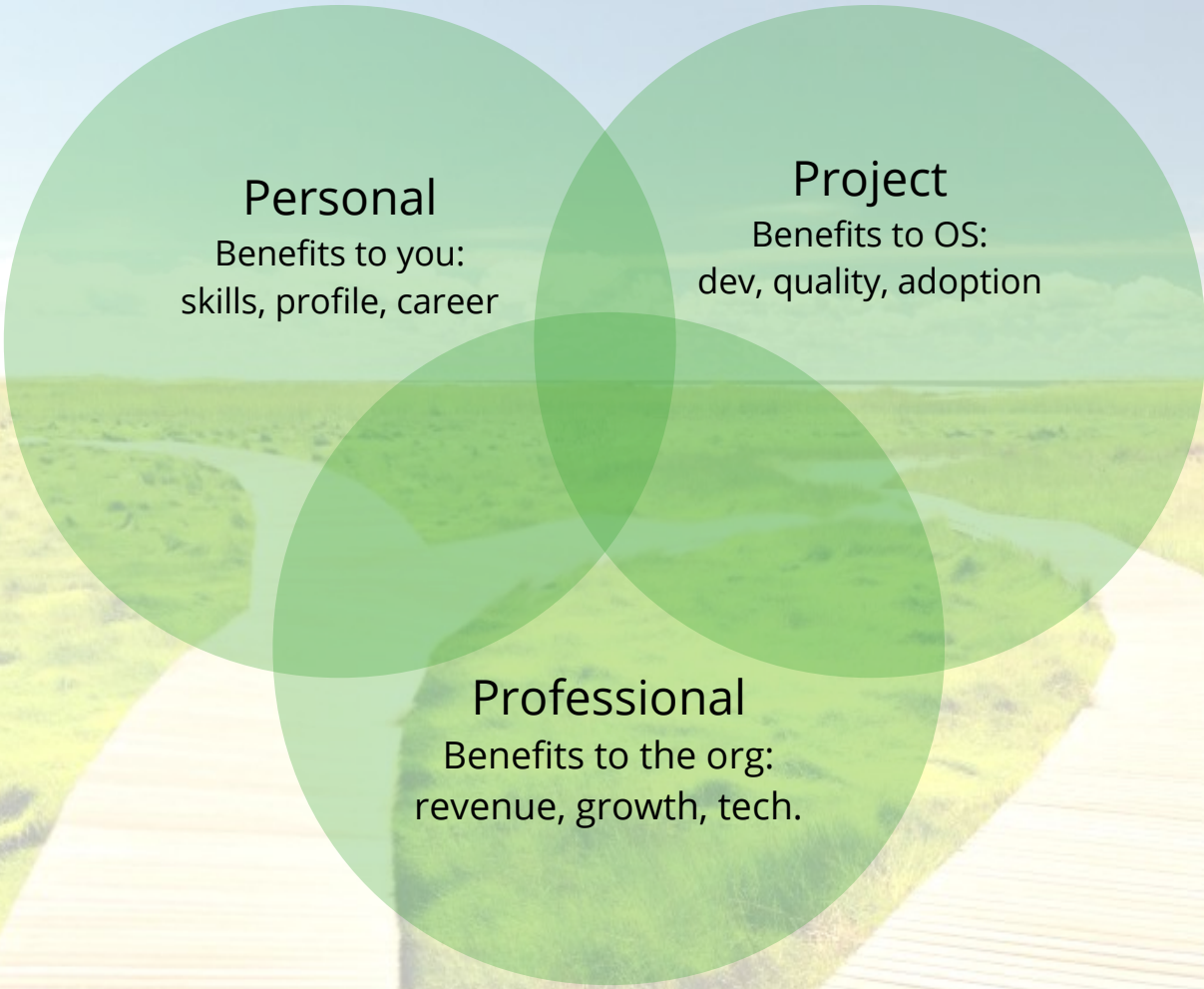
How will you know what projects to contribute to?

How can you set your project up to succeed?

How will you know what job to take?

Observations...

- 1) There are ***significant differences*** in the development of open source software—and the communities of practice that enable them—from traditional in-house development and companies that create ***proprietary software***.
- 2) ***Criteria exist*** to assess the maturity (beneficial behaviors) of competent and well positioned contributors to open source—including businesses.
- 3) Working within organization to advance open source software (projects and businesses) can ***benefit*** a person's ***profile among peers*** and in the community; ***skills*** with the technology, their own ***position*** within the company, and ***career***.





*Companies [and individuals] that contribute and give back learn how to better use the open source software in their own environment, [learning] by contributing as they receive feedback from the crowd of more experienced users and are therefore able to better capture **value** from using the goods.*

- Frank Nagle, Assistant Professor, Harvard Business School

<https://hbswk.hbs.edu/item/the-hidden-benefit-of-giving-back-to-open-source-software>

For Business...

- TCO
- Quality (security)
- Pace of Innovation
- Pace of Development
- Agility (flexibility, iteration)
- End to Vendor Lock-in
- Recruiting



For Developers...

- Self-directed
- Latest technologies
- Peer communities
- Professional development
- Professional opportunities
- Profile
- Mobility



For Developers...

- Self-directed
- Latest technologies
- Peer communities
- Professional development
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- Profile
- Mobility

Only 3% said money and perks were the best thing about their jobs, the same as last year. Thirty percent cited the ability to work on interesting projects, collaborate with a global community (19%) and the opportunity to work on the most cutting-edge technology challenges (16%). These numbers are essentially unchanged from 2016 and 2017.

- The 2018 Open Source Jobs Report



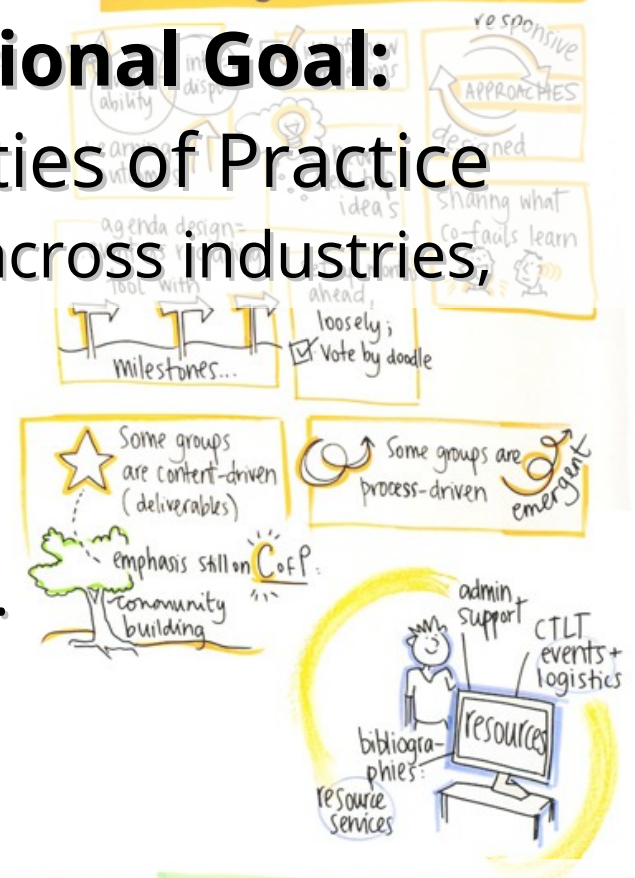
COMMUNITY of PRACTICE

Creating JOINT AGENDAS

Project, Personal & Professional Goal:

Creating / Cultivating Communities of Practice

- Adoption and distribution of software across industries, even among competitors.
- From “specifications” to “standards”.
- Industry-wide principles and processes.
- Engage, engaging, and engaged.
- Shared (and thus reduced) resources.



“What is your management [development] model?”

Focus on **formal, well-structured** management processes to deliver outputs?

Or, **informal, spontaneous** coordination through mutual adjustment?

Personal decision making, relying primarily on own deep knowledge and experience?

Or, tap into the disparate knowledge of **others** and assign collective responsibility?

Clear short-term goals for the firm?

Or, **oblique, indirect, path** through higher-level and longer-term set of objectives?

Hire and retain through **extrinsic** rewards: salary, benefits, and bonuses?

Or, **intrinsic** rewards: opportunities to contribute, feeling of achievement, peer recognition?

Julian Birkinshaw, Professor of Strategic and International Management, London Business School

<https://opensource.com/business/10/11/what-your-management-model>

Values: Govern through **a few clear values, goals and boundaries**, not detailed rules and budgets.

Performance: create a higher performance climate **based on relative successes**, not on meeting fixed targets.

Transparency: Promote **open information for self direction**, don't restrict hierarchically.

Organization: Organize as a network of **lean accountable teams**, not as central functions.

Autonomy: Give teams the freedom and **capability to act**, don't micro management.

Customers: Focus on **improving customer outcomes**, not on hierarchical relationships.

Goals: Set relative goals for **continuous improvement**, don't negotiate fixed performance contracts.

Rewards: Reward shared **success based on relative performance**, not on meeting fixed targets.

Planning: Make planning a **continuous and inclusive** process, not a top-down annual event.

Coordination: Coordinate **iterate dynamically**, not through annual planning cycles.

Resources: **Resource as needed**, not through annual budget allocations.

Controls: Base controls on **relative indicators and trends**, not on variances against plan.

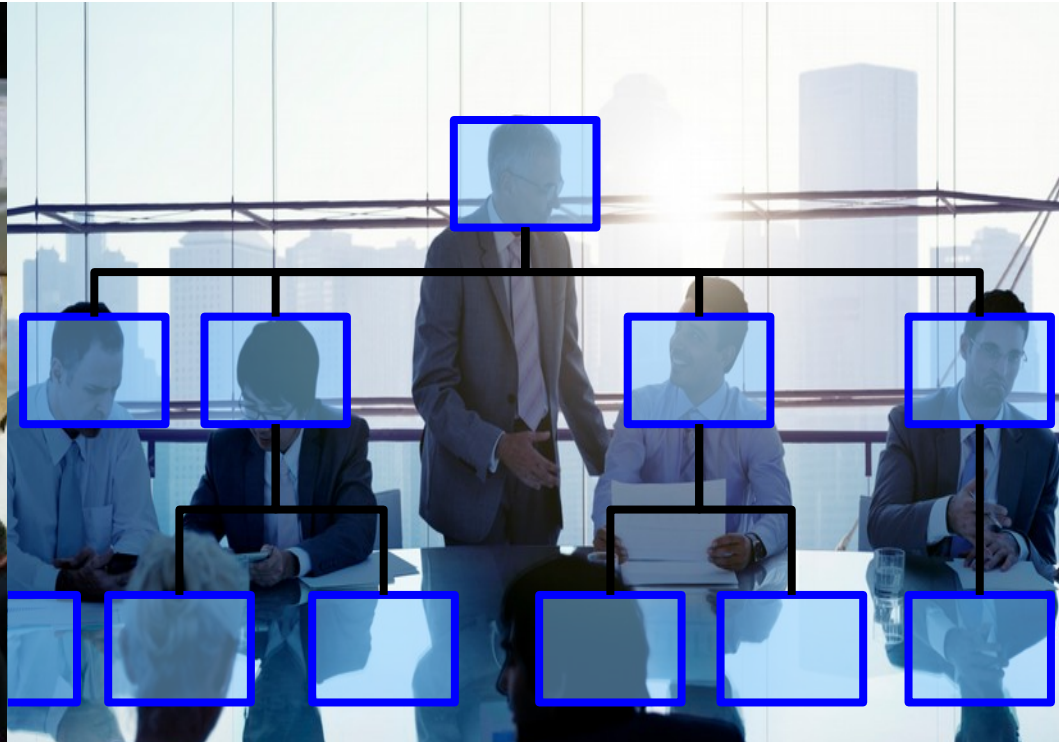
Bjarte Bogsnes, Vice President of Performance Management Development, Statoil

<https://opensource.com/business/12/8/end-performance-management/>

bottom-up, emergent, iterative, incremental, decentralized, distributed, self-organized, self-directed, peer-to-peer, voluntary, meritocratic consensus-based, community-oriented, re-usability, outward-facing, autonomic, independent, transparent, forkable.

top-down, future-focused, strategic, centralized, authoritative, command-and-control, formal roles & responsibilities, directed, managed, controlled, hierarchical, institutionally-oriented, stewardship, novel, inward-facing, alignment, continuity, conservative, risk-averse.

vs.



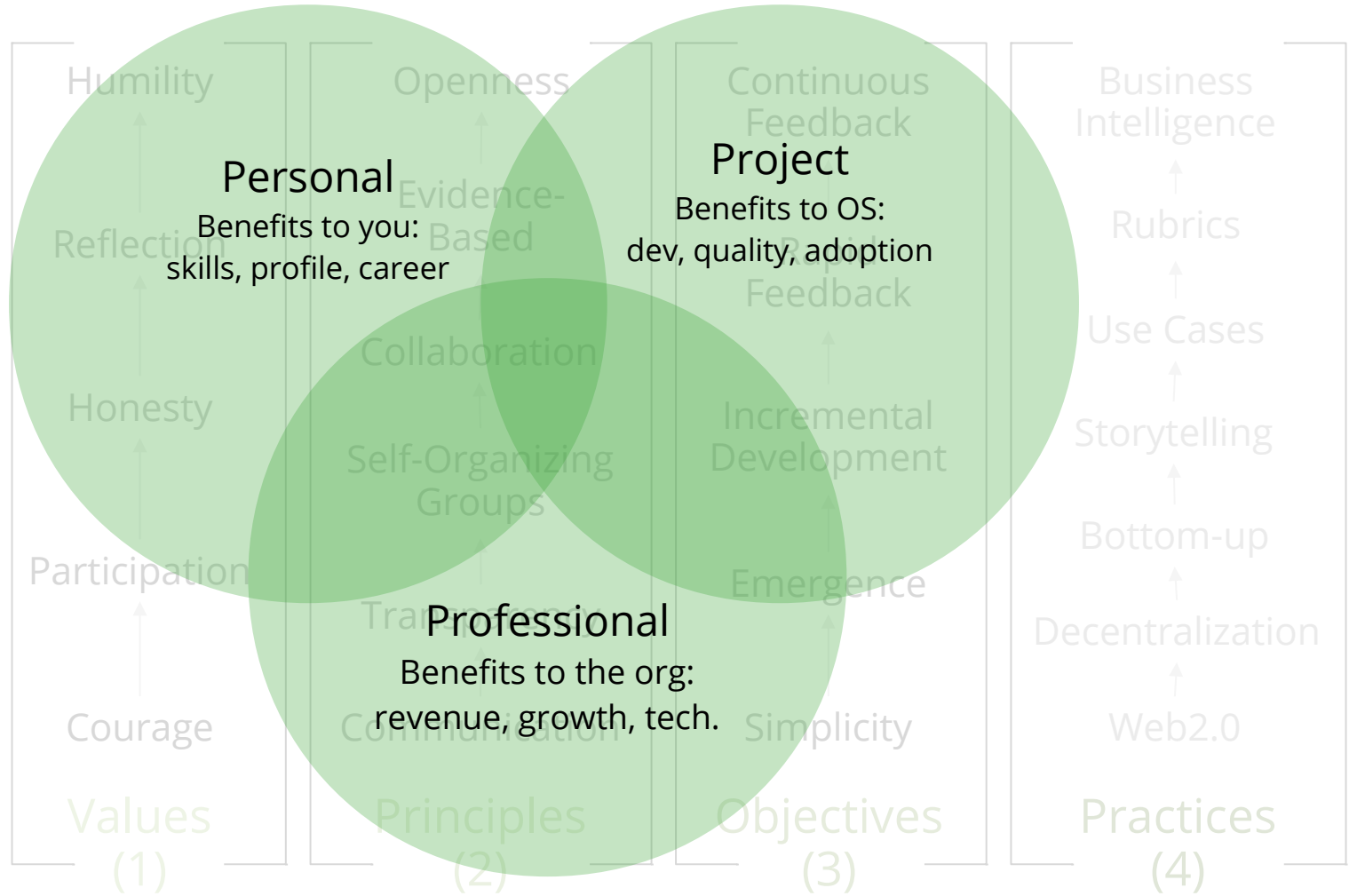
Bernard Bodo, EXIT photo team (Exit Festival's Flickr photostream) CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>), via Wikimedia Commons

Christophe Veltsos, Why Is Your Board of Directors, Finally Asking About Cyber Risks? <https://static.securityintelligence.com/uploads/2015/10/board-of-directors.jpg>, via IBM

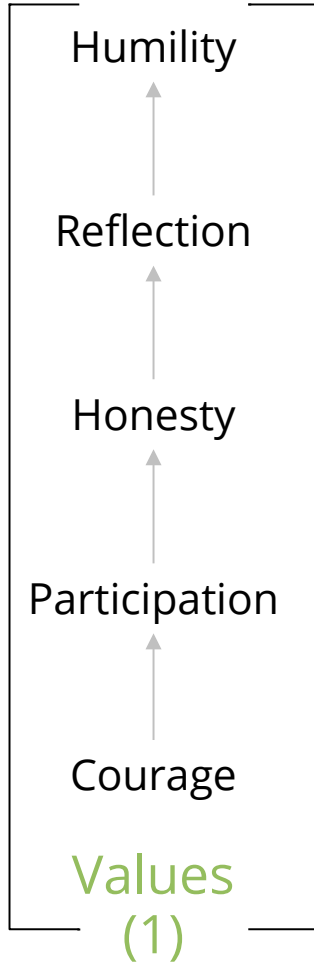
OpenMaturity CausalityModel



Open Maturity Causality Model



OpenMaturity Causality_{Model}



: Deferring to others.

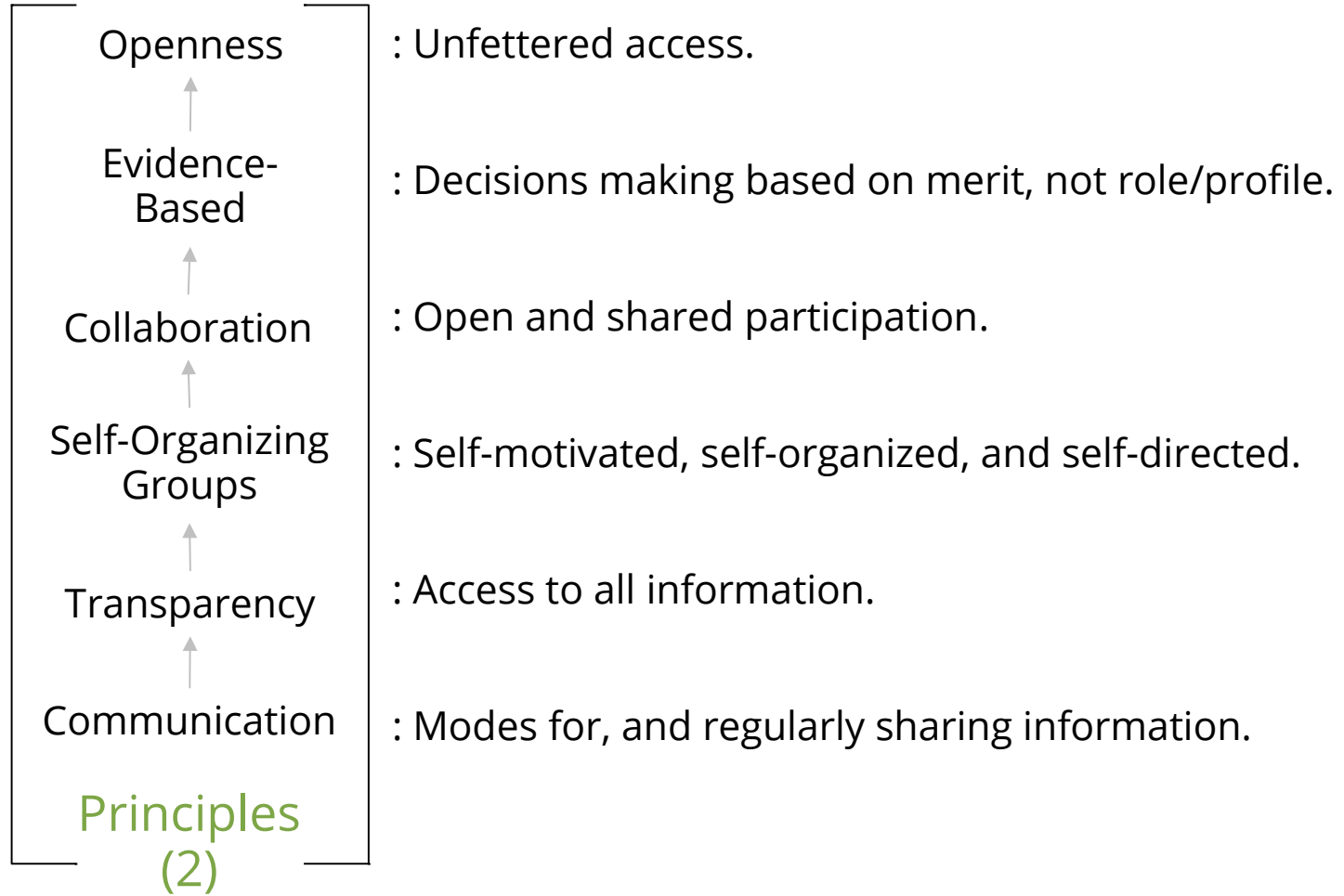
: Assessing own interests, behavior, outcomes.

: Working in and for open source best interests.

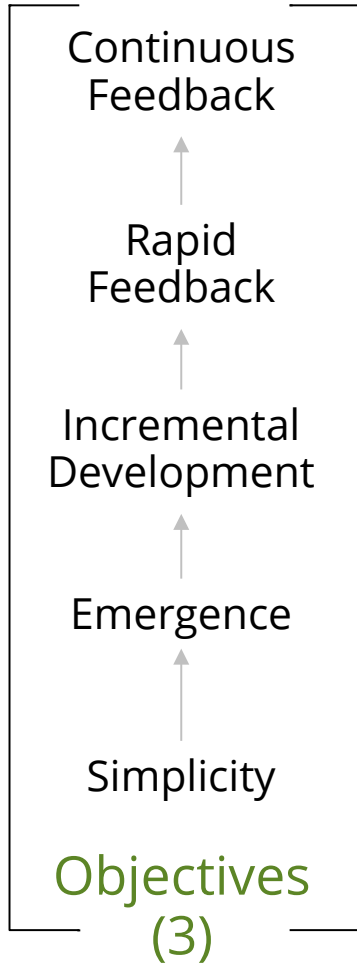
: Engaging with an open source community.

: Publicly declaring commitment to open source.

OpenMaturity Causality_{Model}



OpenMaturity Causality_{Model}



: ongoing efforts to share and capture information.

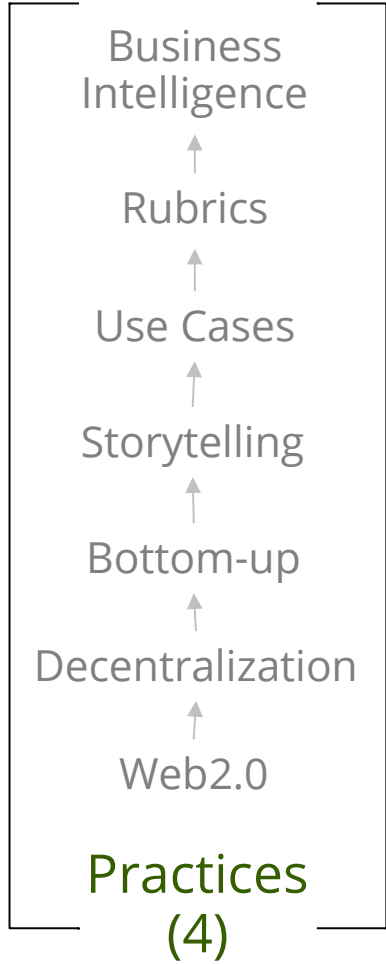
: methods for sharing and capturing information in real time.

: repeated cycles (iterative) in smaller portions at a time.

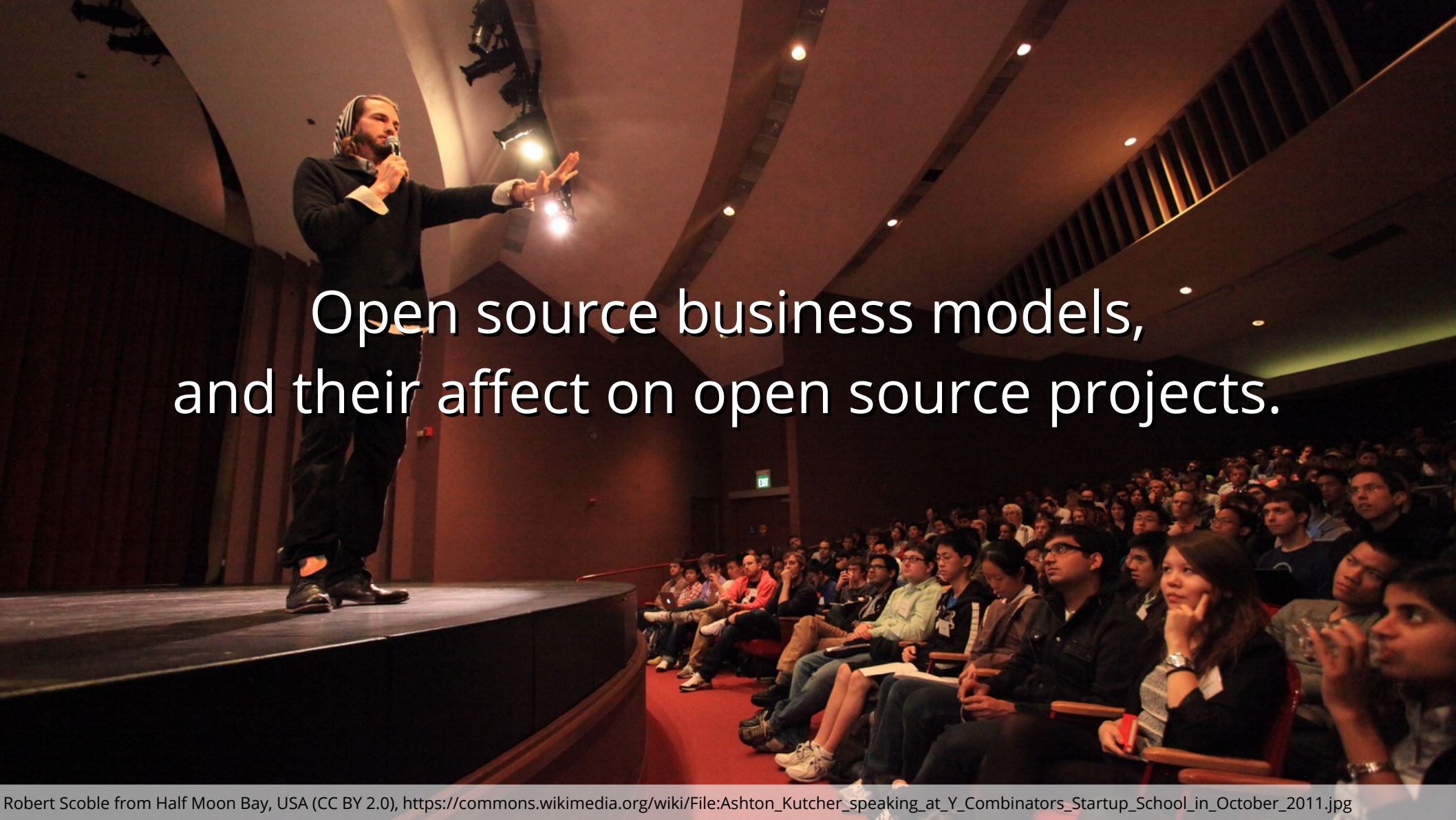
: Direction, development evolves vs. being pre-determined.

: "The enemy of good is perfect", "just enough".

OpenMaturity Causality_{Model}



Evidence from ***within*** the project and community.

A man with a beard and a head covering is standing on a stage, speaking into a microphone and gesturing with his hands. He is wearing a dark suit. The stage is lit with spotlights. In the foreground, a large audience of people is seated in a theater, looking towards the speaker. The theater has a curved ceiling and a red carpet. The text "Open source business models, and their affect on open source projects." is overlaid in white on the image.

Open source business models,
and their affect on open source projects.

Business Models for Free and Open Source Software

C. Okoli, Molson School of Business & J. Nguyen, Foreign Trade University, May 2016

- Corporate development and distribution...
- Corporate development without distribution...
- Auxiliary services...
- Cloud (PaaS, SaaS, etc.)...
- Dual-licensing/Selling exceptions...
- "Open Core"...
- Proprietary with FOSS extensions...
- Commercial buy-out...
- Software certification...

COMMUNITY of PRACTICE ?

Corporate Development and Distribution

IBM Linux kernel; Raspberry Pi; Android system-on-a-chip vendors; smartphone manufacturers

Organizations pay full-time or part-time developers to customize and extend **OSS for their own organizational needs**; then they **distribute some or all of their modifications at no charge to the OSS community** for the continued improvement of the original OSS product.

For **hardware vendors**, this can be a way to enable hardware sales or reduce the vendor's cost of operating system production and maintenance.

Corporate Development without Distribution

Facebook, Google, Netflix, Toyota, Walmart

Organizations pay full-time or part-time developers to **customize and extend OSS for their own organizational needs**; they keep these modifications internal **without distributing them** (either because they are too organization-specific to be generalized, or for proprietary reasons).

Consulting companies or independent software vendors might use OSS inside custom projects delivered to customers. This can be used to accelerate development, or to lower costs of production of the end product.

Auxiliary Services

Red Hat, IBM (consulting); Revolution Analytics (enterprise version for R statistical software)

Revenue is generated from **paid professional services** provided along with the software rather than the software itself. These services may include implementation, support, maintenance, consultation, training, localization (translation) to other languages, or providing of compiled binaries for a fee (rather than source code only).

Software as a Service

Adobe, Blackboard, Microsoft, Salesforce, SugarCRM, Wordpress

The core software is server-based. Customers subscribe to the online service often with e.g. freemium pricing, and offered one or more paid offerings with added features. There might or might not be a OSS desktop or mobile component. A **generic OSS “community version” of the core server-side software is distributed with baseline features.**

Cloud (PaaS, IaaS) Services

Amazon, Azure, Bluehost, Local ISP's

The **server-side software is not distributed at all**, being based on a OSS license that does not require distribution of server-side software, or so that **no modifications are made to require contributions.**

Dual-licensing/Selling exceptions

Asterisk, Jaspersoft , MongoDB, MySQL, SugarCRM

The software is available under a typical OSS license. Users (normally organizational) who want to **modify the software and distribute it without adhering to OSS licensing terms pay to obtain such authorization.**

Open Core

Cloudera, Eucalyptus, Gitlab, Neo4j , Redis Labs


A provider (often also the creator) releases **OSS software and along with** it, they sell **proprietary extensions** that provide enhanced capabilities.

Commercial buy-out

OSS developers manage somehow to sustain themselves in the early period. Then, when the product's potential is proven, the product or company is either sold to a commercial enterprise or an IPO is launched to make the company public and bring in investment funds. Strictly speaking, this model is combined with other business models: an **initial model for launching and developing the OSS, and then a subsequent model after the buy-out applied by the new owners**. This model description refers only to the intermediate buy-out or IPO stage.

Software Certification

Software can be provided under a OSS license, but **requires certification to use a branding mark** or claim to be interoperable. In one variation, original equipment manufacturers (OEM) might use the certified software in their hardware devices. In another variation, the project owners register service marks around the world, then **create a trust- and royalty-based scheme** where only licensed partners can use the software or project name in their promotions and service descriptions. The mark becomes a standard for those looking for support services (e.g. hosting, development, training, etc.).

A man with a beard and a dark jacket is standing on a stage, speaking into a microphone and gesturing with his hands. He is addressing a large audience seated in a theater. The theater has a curved ceiling with recessed lighting. The audience is diverse in age and appearance, and many are looking towards the speaker. The overall atmosphere is that of a professional presentation or lecture.

Where is value created and how is it monetized?
Can that monetization support the company,
AND your work/career, **AND** the project?

Business Models for Free and Open Source Software

C. Okoli, Molson School of Business & J. Nguyen, Foreign Trade University, May 2016

- Corporate development and distribution...
- Corporate development without distribution...
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- Cloud (PaaS, SaaS, etc.)...
- Dual-licensing/Selling exceptions...
- "Open Core"...
- Proprietary with FOSS extensions...
- Commercial buy-out...
- Software certification...

COMMUNITY of PRACTICE ?

Open Maturity Causality Model

Corporate development and distribution:

Facebook's React Native, Indeed's Imhotep, Walmart's Electrode



Open Maturity Causality Model

Open Core:

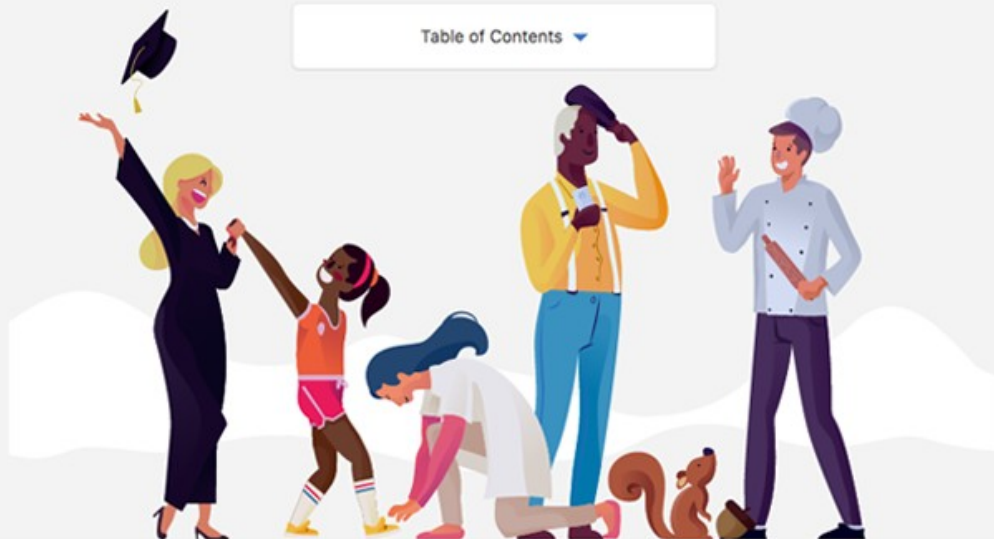
Acquia's Drupal, Instructure's Canvas, Redis Labs' Redis

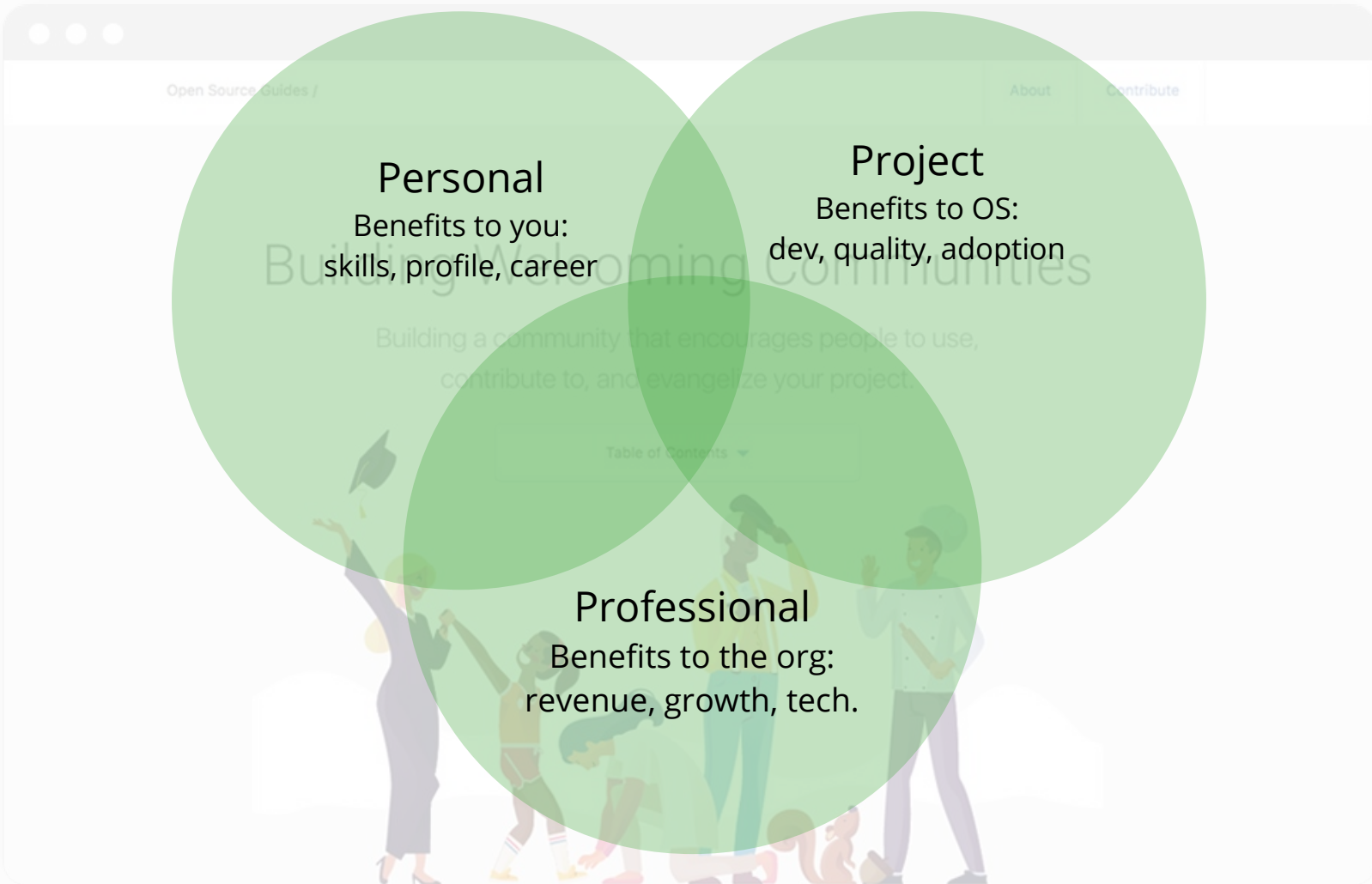


Building Welcoming Communities

Building a community that encourages people to use, contribute to, and evangelize your project.

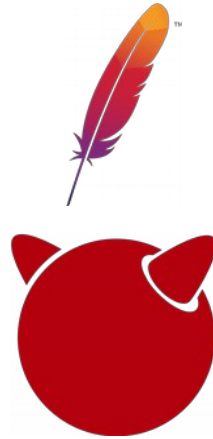
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OSI Affiliate Membership

- Recognized as a non-profit (or equivalent) by the national government were organized.
- Mission statement describing purpose and goals.
- Documentation formalizing organization, e.g. by-laws.
- Publicly available release of a product(s) or service(s).
- Use of an OSI approved open source license.
- Documented approach for participation by the public.
- An active community:
 - Methods for current and interested individuals/organizations to join and participate in your community
 - Active participation from multiple contributors, i.e. individuals and organizations other than founders (contributions may be other than programming/technology)
- References from other open source projects, ideally a current OSI Affiliate Member.

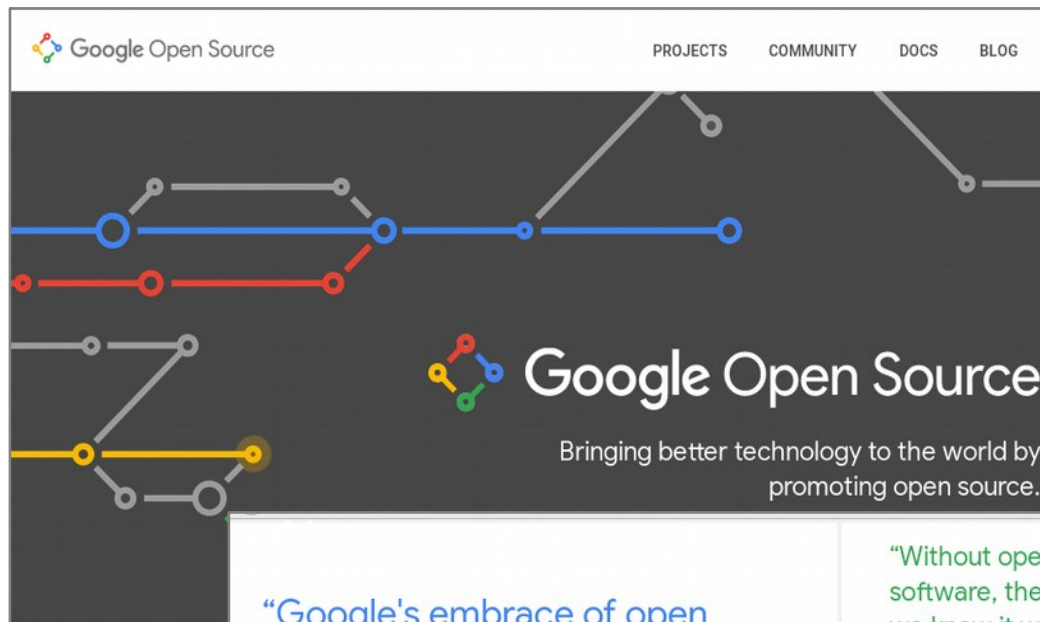
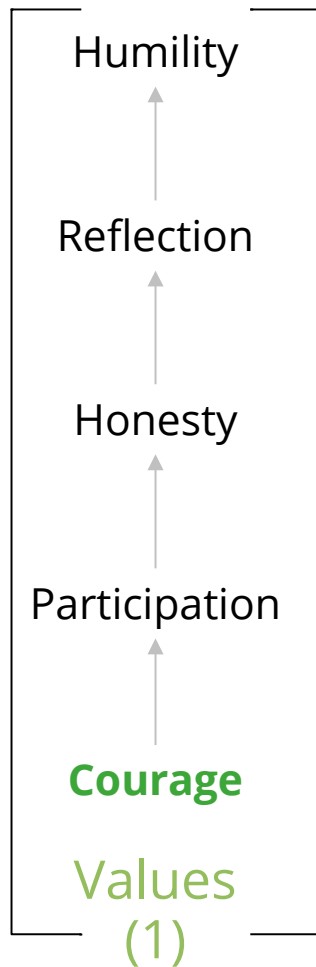





$\frac{20}{70}$	T O Z	$\frac{70 \text{ FT.}}{21.3 \text{ m}}$	3
$\frac{20}{50}$	O P E N	$\frac{50 \text{ FT.}}{15.2 \text{ m}}$	4
$\frac{20}{40}$	S O U R C E	$\frac{40 \text{ FT.}}{12.2 \text{ m}}$	5
$\frac{20}{30}$	E D F C Z P	$\frac{30 \text{ FT.}}{9.14 \text{ m}}$	6

Ken Teegardin from Boulder, Boulder, (CC BY-SA 2.0), [https://commons.wikimedia.org/wiki/File:Vision_Of_Eyechart_With_Glasses_\(5547069087\).jpg](https://commons.wikimedia.org/wiki/File:Vision_Of_Eyechart_With_Glasses_(5547069087).jpg)


Open Maturity Causality_{Model}




“Google's embrace of open source has been important to me as an engineer in ways I can't express. It's fantastic!”

 Rob Pike, Distinguished Engineer

“Without open source software, the entire internet as we know it would not exist.”

 Chris DiBona, Director of Open Source

“Open source is about working together to make better software and a better world.”

 Sarah Novotny, Program Manager

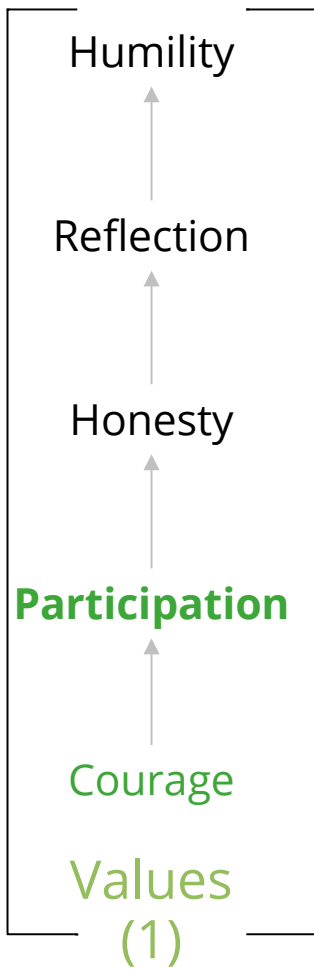
Community is Important

How We Do It

Google understands that to be a part of the open source community, we need to give back. Through our financial


In the spirit of openness, we are sharing the internal documentation that helps Googlers use, patch, and release

Open Maturity Causality Model



Google Developers Products Events Search ALL PRODUCTS


Upcoming events



TensorFlow Dev Summit 2019
March 6-7 Sunnyvale, CA, USA #TFDevSummit

TensorFlow Dev Summit brings together a diverse mix of machine learning users from around the world for two days of highly technical talks, demos, and conversation with the TensorFlow team and community.

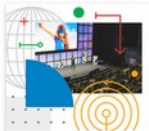
[LEARN MORE](#) [ADD TO CALENDAR](#)



Google Cloud Next '19
April 9-11 San Francisco, CA, USA

Google Developers Products Events Developer Progra Search ALL PRODUCTS


Recent events



DevFest OnAir 2018
December 11-12 | Online

DevFest OnAir is an online conference featuring sessions from DevFest events around the globe. With over 500 communities and DevFest events happening all over the world, DevFest OnAir brought this global experience online for the first time!


[WATCH SESSIONS](#)



Flutter Live 2018
December 4 | London, UK

Developers joined us for Flutter Live on December 4th to experience the latest from Flutter, Google's free and open source SDK for building high-quality native iOS and Android apps from a single codebase.

[WATCH SESSIONS](#)



Chrome Dev Summit 2018
November 12-13 | San Francisco, USA

Chrome Dev Summit 2018 returned from November 12-13 to the Yerba Buena Center for the Arts in San Francisco, California.

[WATCH SESSIONS](#)

OpenMaturity Causality_{Model}



ZDNet

CLOUD TV MWC 2019 INNOVATION SECURITY MORE NEWSLETTERS ALL WRITERS

Google joins Open Invention Network patent commons as a full member

Google joins IBM, NEC, Novell, Philips, Red Hat and Sony as a full member of the Open Invention Network open-source and Linux patent protection organization.

By Steven J. Vaughan-Nichols for Linux and Open Source | December 18, 2013 -- 14:00 GMT (06:00 PST) | Topic: Enterprise

Software

Google Summer of Code

ABOUT ORGANIZATIONS HOW IT WORKS HELP GET STARTED LOG IN

14,000+ STUDENTS, 109 COUNTRIES
14 YEARS, 651 OPEN SOURCE ORGANIZATIONS

35,000,000+

LINES OF CODE

Google Summer of Code is a global program focused on bringing more student developers into open source software development. Students work with an open source organization on a 3 month programming project during their break from school.

GET STARTED

Open Maturity Causality Model



Jaikuarchive.com – Jaiku Presence archiver

Datum 9 Januari 2012
Skribent JOAKIM JARDENBERG
7 KOMMENTARER

Verktøy

SKRIV UT



Welcome to [jaikuarchive](#) - the Jaiku Presence archiver. We aim to rescue the immeasurable values built up on [jaiku.com](#), but only the stuff you still care about.

Newsflash: More than 700.000 jaiks saved for the future. More than 15.000 users in the archive.

Google Open Source

PROJECTS COMMUNITY

OSS-Fuzz

github.com/google/oss-fuzz

Continuous fuzzing of open source software

Fuzz testing is a well-known technique for uncovering various kinds of programming errors in software. Many of these detectable errors (e.g. [buffer overflow](#)) can have serious security implications. OSS-Fuzz provides 'fuzzing as a service' for open source projects

How Google uses OSS-Fuzz

Various open source projects developed and/or maintained by Google use OSS-Fuzz for continuous fuzzing

CATEGORIES
[developer-tools](#)
[programming](#)
[security](#)
[testing](#)

LANGUAGES
[c](#)
[c++](#)

TAGS
[continuous-integration](#)

opensource.com

redhat
SUPPORTED BY RED HAT

How Google created a new kind of open source program office

06 Sep 2016 | [John Mark Walker](#) | 196


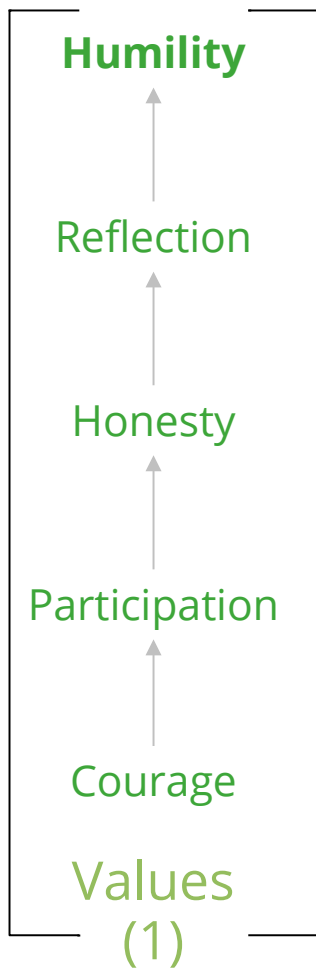


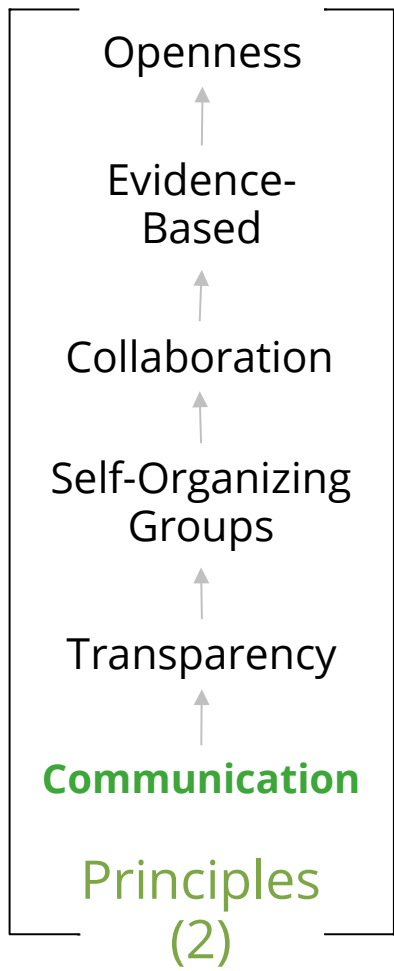
Image by : [opensource.com](#)

Twitter Facebook LinkedIn Reddit Google+ Email

OpenMaturity Causality_{Model}



Open Maturity Causality Model



Google Open Source PROJECTS COMMUNITY DOCS BLOG

Perkeep

perkeep.org

Perkeep is your personal storage system for life

Perkeep (née Camlistore) is a set of open source formats, protocols, and software for modeling, storing, searching, sharing and synchronizing data in the post-PC era. Data may be files or objects, tweets or 5TB videos, and you can access it via a phone, browser or FUSE filesystem.

Source Code

Repo	License	Stars	Forks
perkeep	Apache 2.0	3809 Stars	299 Forks

CATEGORIES
[databases](#)
[utilities](#)

LANGUAGES
[go](#)
[javascript](#)

TAGS
[backup](#)
[archive](#)
[quantified-self](#)
[personal](#)
[privacy](#)
[storage](#)
[sharing](#)
[cli](#)
[web](#)

PERKEEP

HOME DOWNLOAD **Perkeep** CODE COMMUNITY

Documentation

- **Overview:** The original motivation and background for why Perkeep exists and what one might use it for.
- **Compare:** how Perkeep compares to similar services and software

For Users

If you're just looking to set up a Perkeep server and use it yourself, check out our [getting started guide](#). The documents below go into more detail on customizing the high level configuration for use such as alternative blob storage or synchronization to cloud storage.

- **Command-line tools**
- **Server Config:** Details for configuring server storage and access, including synchronization to other Perkeep servers or backup to cloud storage providers
- **Client config:** Clients need this configuration file to securely connect to your Perkeep server(s)
- **Search Commands:** Covers the available search operators
- **Configuring CLI**
- **Files or Permissions**

For Developer

If you want to help the Perkeep, these docs

PERKEEP

HOME DOWNLOAD DOCS CODE COMMUNITY

Community

Perkeep survives with the generous contributions of time and code by our [contributors](#). If you'd like to contribute, find out how to [get the code](#) and [how to start submitting changes](#).

- [@PerkeepOrg](#): Perkeep on Twitter
- [Perkeep](#): Mailing list for official discussion, design, help
- [camlistore-commits](#): Mailing list for commit emails, code reviews
- [Gerrit](#): Code review
- [Github](#): our Github home (Issues + source mirror)
- [Issues](#): Issue/bug tracker
- [#perkeep](#): Perkeep on Freenode IRC

Please note that this project uses a [Contributor Code of Conduct](#). By participating in this project you agree to abide by its terms.

[Perkeep](#) @PerkeepOrg

We're happy to announce Perkeep 0.10, the first new Perkeep release in a year!

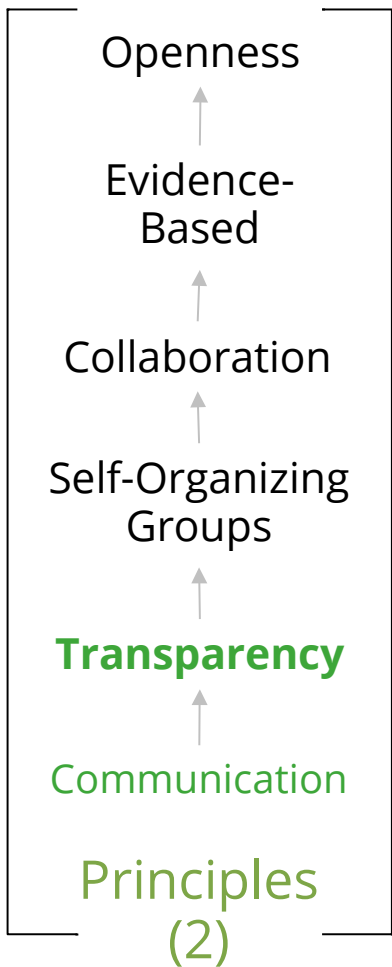
Perkeep 0.10, "Bellingham" "your personal storage system for life" perkeep.org/doc/release/0...

Thanks to the 33 contributors & all the OpenCollective patrons over the past year! Looking forward to a 1.0!

10:12 PM - 2 May 2018 from Seattle, WA

16 Retweets 50 Likes

Open Maturity Causality Model



Google Search for messages

Groups NEW TOPIC Mark all as read Filters

My groups Perkeep Shared publicly 30 of 73 topics (73 unread) Join group to post

Home Starred My groups

Click on a group's star icon to add it to your favorites

Favorites

Recently viewed

Perkeep refurbishers General Open ed...

Privacy - Terms of Service

How to "tag" photos? (1) By Tristan Kohl - 1 post - 1 view

(1) By simon.bohlin - 1 post - 19 views

Update on Perkeep, Brad, Mathieu, Open Collect... By Brad Fitzpatrick - 8 posts - 226 views

suggestions for a sensible approach to storing ... By dan.kortschak - 7 posts - 57 views

Finding parentless directory nodes. (1) By Timothy Quinn - 1 post - 11 views

Deduplication, tagging, organisation, and acces... By Andreas Toth - 5 posts - 20 views

How do I configure the /Index/ handler to work o... By rainbowtwigs - 1 post - 16 views

a newbie has prob By chung yan Chen

Backup of a whole By Albert Zeyer - 5

Dedicated hardwar

perkeep / perkeep / master / . / TODO

```
blob: e7af879f4c652a5aacd93bbd8aab36ad59842764 [file] [log] [blame]
```

```
1 There are two TODO lists. This file (good for airplanes) and the online bug tracker:
```

```
2 https://github.com/perkeep/perkeep/issues
```

```
3
```

```
4
```

```
5 Offline list:
```

```
6
```

```
7 -- add a build tag to allow perkeep to be compiled without any GCE
```

```
8 support. (good for smaller binaries on Raspberry Pis or
```

```
9 whatnot). Most code has moved to the osutil/gce package, and
```

```
10 there's little gce usage now in perkeep except for 2-3 things
```

```
11 bethind "if env.OnGCE" checks. those things inside the checks can
```

```
12 be func pointers registered by a file with a +build gce or
```

```
13 !without_gce, depending on which way we decide to go. But make sure
```

```
14 our test coverage builds both.
```

```
15
```

```
16 -- fix the presubmit's gofmt to be happy about enacs:
```

```
17
```

```
18 go fat perkeep.org/cmd... perkeep.org/dev... perkeep.org/misc... perkeep.org
```

```
19 stat pkg/blobserver/.#multistream_test.go: no such file or directory
```

```
20 exit status 2
```

```
21 make: *** [fat] Error 1
```

perkeep / perkeep

Watch 174 Star 3,811 Fork 299

Code Issues 359 Pull requests Projects Wiki Insights

Want to submit an issue to perkeep/perkeep? Dismiss

If you have a bug or an idea, read the contributing guidelines before opening an issue. Issues labeled help wanted can be good first contributions.

Labels 43 Milestones 3 New Issue

time Get or Put methods that mirror semantics of pk-get and pk-put 3

perkeep.org/pkg/fs: tests hang waiting for pk-mount CLI Fuse Testing 5

#1252 opened 18 days ago by josharian

rolism: use go4 rolism package instead dependency 12

#1249 opened 23 days ago by josharian

synology: cannot build packages on macOS MacOS Synology docker 3

#1248 opened 28 days ago by mpi

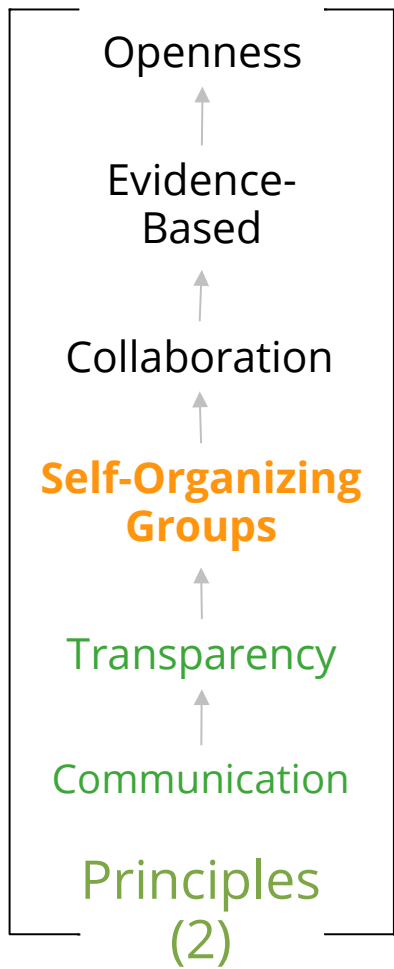
Importer: Twitter importer refers to defunct apps.twitter.com 3

#1246 opened on Jan 20 by axelismom

Importer: Mastodon importer falls with error: strconv.ParseInt: parsing "": invalid syntax 3

#1245 opened on Jan 20 by axelismom

Open Maturity Causality Model



Google Search for messages

Groups NEW TOPIC Mark all as read Filters

My groups Home Starred

Perkeep Shared publicly 30 of 73 topics (73 unread) Join group to post About

How to "tag" photos? (1) By Tristan Kohl - 1 post - 1 view 9:54 AM

(1) By simon.bohlin - 1 post - 19 views Feb 25

Update on Perkeep, By Brad Fitzpatrick -

suggestions for a se By dan.kortschak - 7

Finding parentless By Timothy Quinn - 1

Deduplication, tagg By Andreas Toth - 5

How do I configure By rainbowtwigs - 1 p

a newbie has proble By chung yan Cheng

Backup of a whole l By Albert Zeyer - 5 p

Dedicated hardware By Albert Zeyer - 6 p

Connecting perkeep By dx25 - 4 posts - 3

Debugging http2: Tr

perkeep / perkeep / master / _ / CONTRIBUTORS

```
blob: b72c66cb5556267d197437895851cbc75915b84b [file] [log] [blame]
```

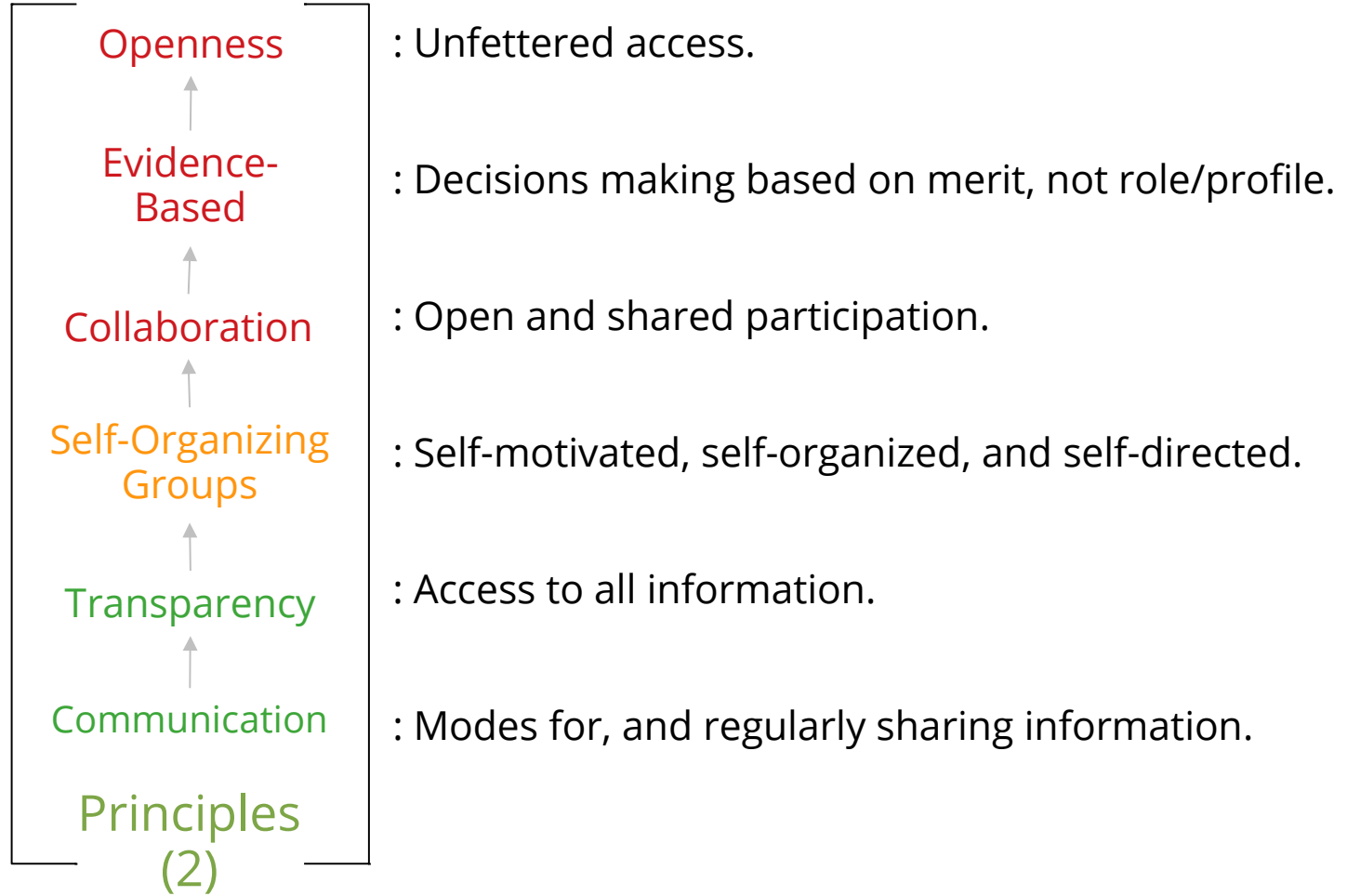
```
1 # People who have agreed to one of the CLAs and can contribute patches.
2 # The AUTHORS file lists the copyright holders; this file
3 # lists people. For example, Google employees are listed here
4 # but not in AUTHORS, because Google holds the copyright.
5 #
6 # https://cla.developers.google.com/
7 #
8 # Note that the CLA isn't a copyright_assignment_ but rather a
9 # copyright_license_. You retain the copyright on your
10 # contributions.
11
12 Aaron Bieber <deftly@gmail.com>
13 Aaron Boodman <aaron@aaronboodman.com>
14 Aaron Racine <aracine@google.com>
15 Adam Langley <agl@golang.org>
16 Alessandro Arzilli <alessandro.arzilli@gmail.com> gh=aarzilli
17 Ali Afshar <afshar@google.com>
18 Amir Mohammad Saied <amirsaied@gmail.com>
```

Release Stats

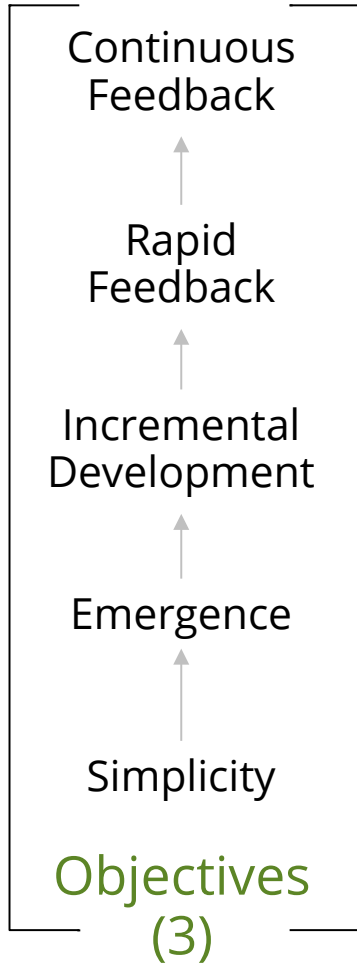
33 total committers over 597 commits since **d21ecfd24** Including Adam Shannon, Ashley McNamara, Attila Tajti, Brad Fitzpatrick, Bruce C. Dillahunty, Daniel Heath, Daniel Lipovetsky, Eric Drechsel, Fabian Wickborn, Filippo Valsorda, Govert Versluis, Herman Grecco, James Hillyerd, Josh Bleecher Snyder, Magnus Landerblom, Markus Peröbner, Mathieu Lonjaret, Max Bernstein, Michael Houston, Mike Lloyd, Paul Jolly, Paul Lindner, Peter Etelej, Phillip Couto, Piotr S. Staszewski, Ronald Evers, Sergi Mansilla, Stephen Searles, Sterchele Nicolas, Steve Armstrong, Steven L. Speek, Tamás Gulács, Tilman Dilo, Will Norris.

Thank you!

Open Maturity Causality_{Model}



OpenMaturity Causality_{Model}



: ongoing efforts to share and capture information.

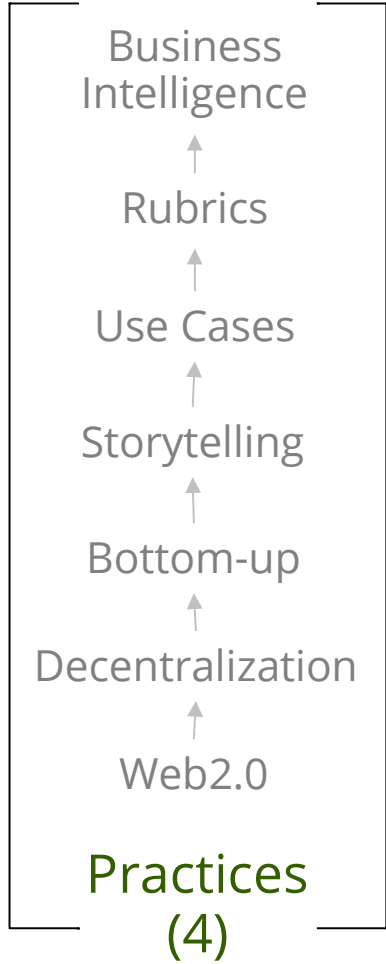
: methods for sharing and capturing information in real time.

: repeated cycles (iterative) in smaller portions at a time.

: Direction, development evolves vs. being pre-determined.

: "The enemy of good is perfect", "just enough".

OpenMaturity Causality_{Model}



Evidence from ***within*** the project and community.

Best practices when engaging as an individual with open source communities, and when participating on behalf of your employer.

"Promote and Protect Open Source"

Only software distributed with an OSI Approved Open Source License should be labeled "Open Source".



open source
initiative
Approved License®

"Your community is only as good as the biggest jerk in it"
- Josh...



Josh Simmons

Open Source Community Strategist
Open Source Programs Office, Google



Multiple Profiles (Identities)

Email, Github, IRC, Twitter, etc.

Canonical

Clearly Defined

LibreOffice

FLOSS Desktops for Kids

GIMP

Gource

Moodle

Open Index

Open Source Initiative

Ubuntu

uPortal

Sakai

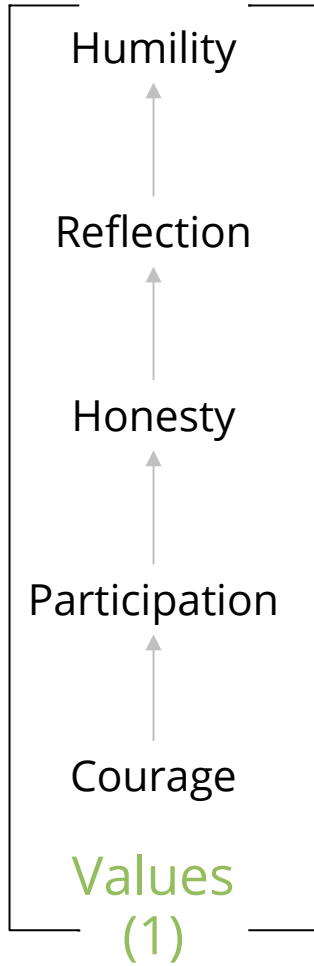
Stack Exchange / Overflow

*Keepass



"On the Internet, nobody knows you're a dog."

OpenMaturity Causality_{Model}



: More joiners, fewer starters.

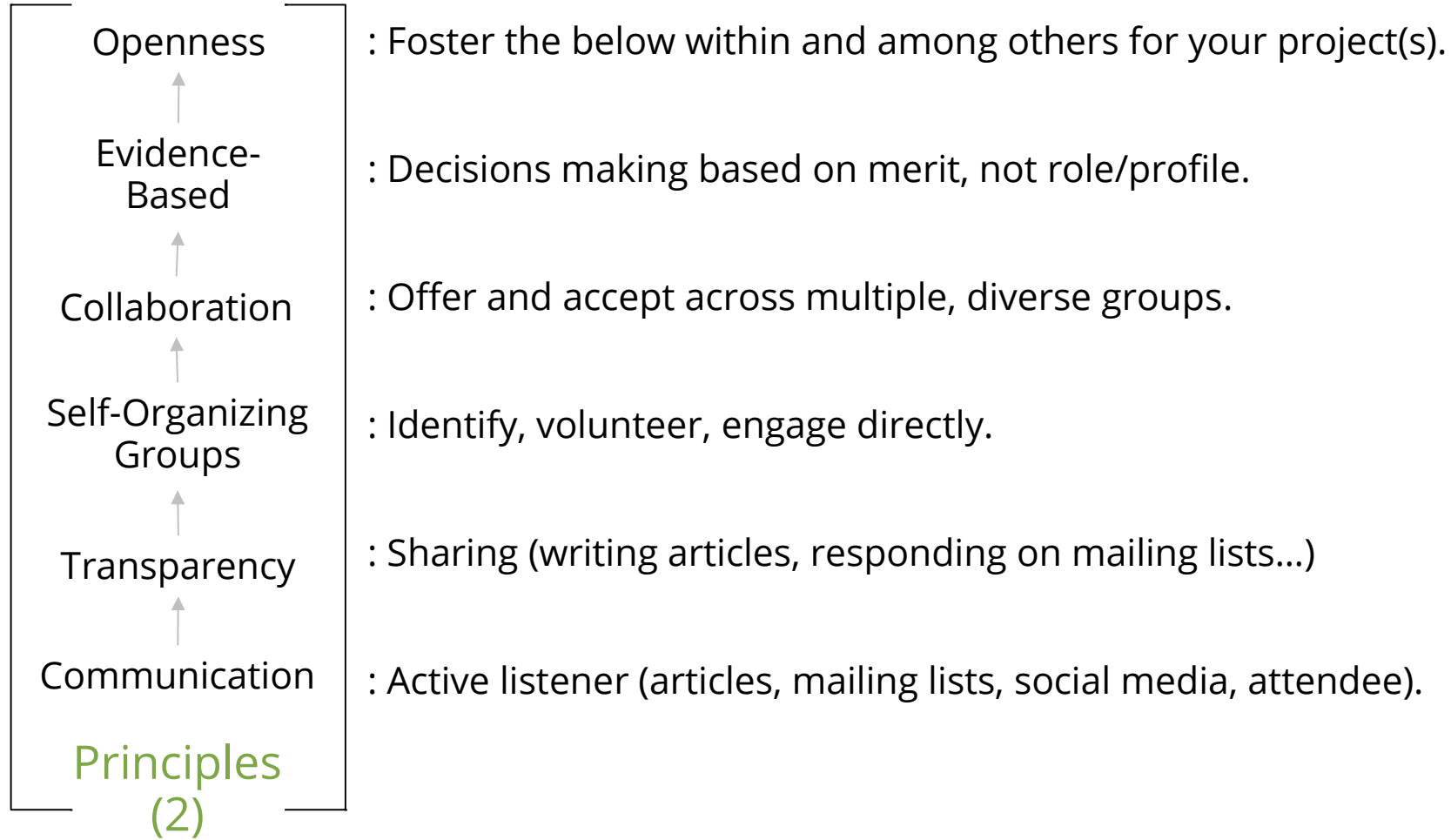
: Accepting critiques (direction, issues, bugs, pull requests).

: Publish own work, contribs (bug fixes, new features)

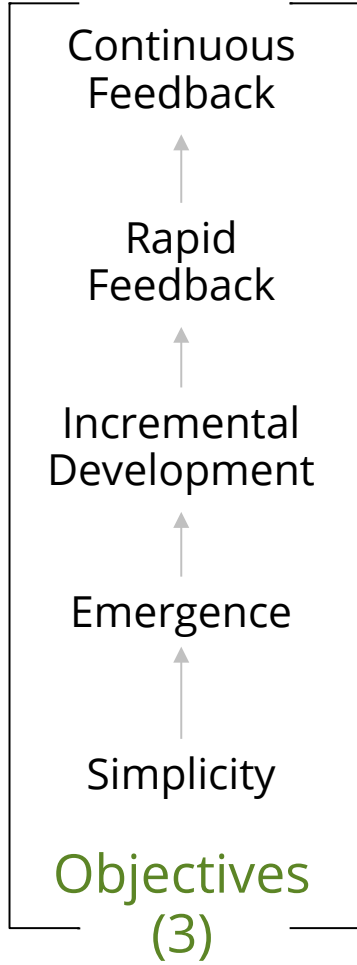
: Conferences, hackathons, contribs (docs, QA, reports)

: Twitter, Medium, Github...

OpenMaturity Causality_{Model}



OpenMaturity Causality_{Model}



: Be available.

: Be responsive.

: Stay connected.

: Build on existing work (projects and communities).

: Work small.



Thank you.



open source
initiative®

Patrick Masson

General Manager & Board Director

masson@opensource.org

What separates a good open source project from a great one?

How would you recommend overcoming that initial intimidation or learning curve?

One thing people should know more about open source projects and development.

What is the relationship between profit and open source software?

Shortcoming of/in open source.