# CS499 - Open Source software development

Lecture #09: Commercial Open Source (COSS)

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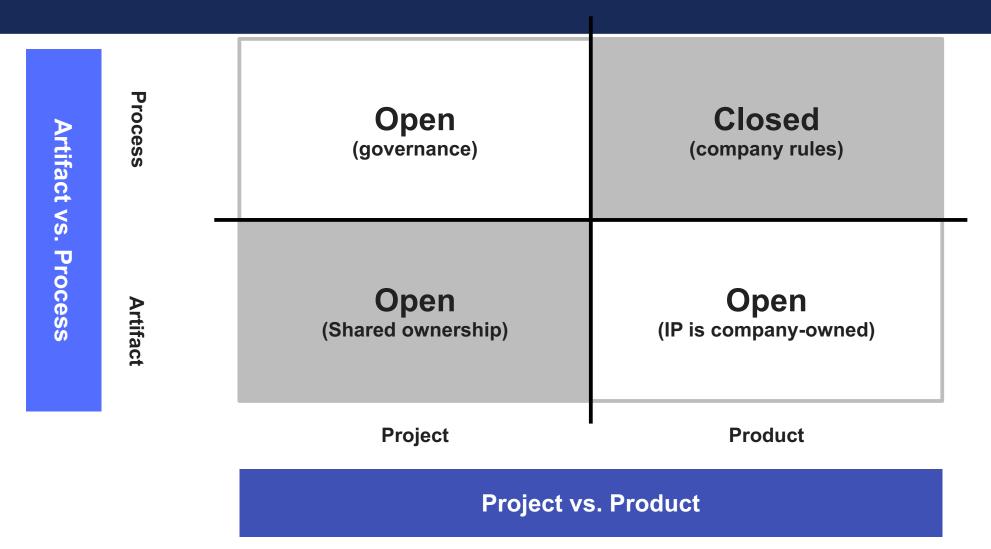
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# Community vs. Commercial Open Source



# Community vs. Commercial Open Source

# Community open source

- •Traditional open source projects (e.g. GIMP)
- Developer-led projects / foundations (e.g. Jakarta / Eclipse)
- User-led projects / foundations (e.g. Kuali)

# Commercial open source

- •Single-vendor open source firms (e.g. MongoDB)
- Open source distributor firms (e.g. SUSE)
- Service and support firms (e.g. Cygnus Solutions)

# **Commercial Open Source??**

"How can we build a business around a product that we are committed to give away to the community for free?"

# **Commercial Open Source??**

- Commercial open source software
  - Is open source software that
    - Is being developed by one or more software vendors
    - •For the purposes of deriving indirect revenues from it
- The product is never open source software
  - Customers pay for a basic or whole product
  - •By a (the) commercial open source vendor

# **But, Why?**

- •To drive adoption (of the product) due to (nearly) frictionless distribution
  - •To build a large user base from which benefits accrue
  - •To have an existing base of users to convert to customers
  - •To hinder competitors from getting in
- What is not new
  - Revenue sources
- What is new
  - Everything else (changes)

## **Who??**





















# Who?

COSS Company	OSS Origin	VC Raised (M)	Employees	Est. Revenue (M)	Est. Valuation (B)	Exit Value (B)	Public/Private	Status
Mirantis	Academia/Research (NASA)	\$227	580	\$100	\$1.0		Private	Independent
Linden Lab	Company project	\$19	247	\$100	\$0.5		Private	Independent
Pentaho	Company project	\$75	670	\$100	\$1.0	\$0.50	Public (via Hitachi)	Acquired (Hitad
Alfresco	Company project	\$70	419	\$100	\$0.3	\$1.00	Private	Hyland acquire
Cloudbees	Personal project	\$111	450	\$100	\$1.0		Private	Independent
Docker	Spin-out (dotCloud)	\$308	200	\$100	\$1.0		Private	Independent
Kaltura	Company project	\$166	710	\$120	\$1.0		Private	Independent
VA Linux (Geeknet)	Personal project	\$30	300	\$120	\$0.2	\$0.15	Private	Acquired
Canonical	Company project	\$12.80	875	\$150	\$1.5		Private	Independent
Puppet Labs	Company project	\$190	510	\$150	\$2.5		Private	Independent
Neo4j	Company Project	\$190	490	\$150	\$2.0		Private	Independent
Datastax	Internet-Scale (Facebook)	\$240	530	\$150	\$2.0		Private	Independent
Couchbase	Spin-out (LiveJournal)	\$251	630	\$150	\$1.5		Private	Independent
JFrog	Company project	\$230	820	\$160	\$5.0		Private	Independent
SugarCRM	Company project	\$146	504	\$175	\$1.0		Private	PE (KKR)
Liferay	Company project	-	1,250	\$200	\$2.0		Private	Independent
Instructure	Company project	\$90	1,200	\$200	\$1.4	\$0.65	Public	Independent (T
Treasure Data	Company project	\$54	400	\$200	\$1.5	\$0.70	Private	Acquired (Arm)
Segment	Company project	\$284	650	\$200	\$3.2	\$3.20	Public (Twilio)	Acquired (Twili
Postman	Company project	\$208	560	\$200	\$5.0		Private	Independent
Mapbox	Company project (DevelopmentSeed)	\$275	530	\$200	\$2.0		Private	Independent
Magento Commerce	Company project (Varien)	\$272	700	\$200	\$1.7	\$1.68	Public (via Adobe)	Acquired (Adol
Redis Labs	Personal Project	\$555	500	\$200	\$1.1		Private	Independent
GitLab	Personal project	\$437	1,350	\$200	\$6.0		Private	Independent
Enterprise DB	Academia/Research (UCB)	\$67	900	\$200	\$1.0		Private	Independent

## •Core product =

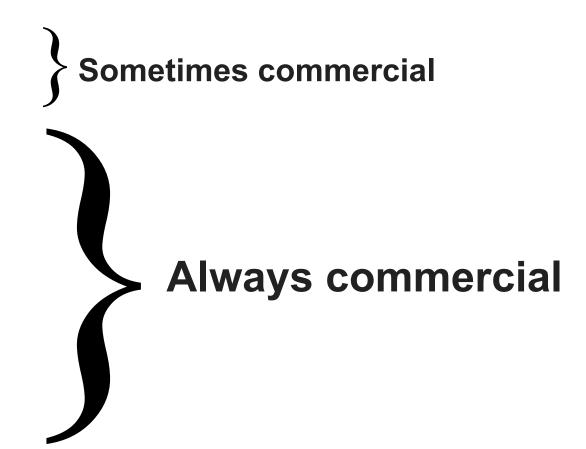
- Open source software
- Additional functionality
- Complementary artifacts
- Self-help services

## •Basic product =

- Core product +
- Fitness for use
- Certification
- Support services

## •Whole product =

- Basic product +
- Training
- Consulting
- Operations



# Commercial Open Source by Intellectual Property

## Single-vendor open source firms

- Provide a traditional software product to enterprises
- Exclusively own (key parts of) the software their business is based on
- Can attract venture capital; can have outsize returns

## Open source distributor firms

- Provide a well working assembly of open source components
- Exclusively own non-core-software IP (configuration data, regression test suites, ...)
- Can attract venture capital; can have outsize returns

## Service and support firms

- Service existing community open source software
- Share in the IP, don't dominate it
- Don't attract venture capital

# **Definition of Single-Vendor Open Source**

- Single-vendor open source software is commercial open source software that
  - Is managed and developed by a single vendor
- A single-vendor open source software firm is a software vendor that
  - Manages and develops single-vendor open source software

# **Characteristics of Single-Vendor Open Source**

- Single-vendor open source firms
  - •Owns most or all of the key control mechanisms for open source
    - •In particular, they are (by definition) the sole copyright owner
  - Can attract venture capital funding and can have outsize returns
- May be called neo-proprietary software vendors

# First and Second Generation Single-Vendor Open Source Firms

































# Third Generation Single-Vendor Open Source Firms

































# Community vs. Commercial Edition (Single-Vendor Firms)

- Community edition
  - Core product
    - Core software
      - Provided under an open source license
    - Some complementary artifacts
    - Self-help services

- Commercial edition
  - Core product
    - Core software
      - Provided under a commercial license
    - Additional functionality
    - Complementary artifacts
    - Self-help services
  - Basic product =
    - Core product +
    - Fitness for use
    - Certification
    - Support services
  - Whole product =
    - Basic product +
    - Training
    - Consulting
    - Operations

## **User to Customer Conversion**

- Community edition
  - Home user
    - Will never pay money
    - But pays with time, feedback



- Line-of-business user
  - Likes \$0 line-items
  - May be ignorant of risks

- Commercial edition
  - Enterprise customer
    - Is willing to pay
    - Requires enterprise features
  - Internal IT department
    - Has appropriate budget
    - Wants professional support

# Intellectual Property Management (Single-Vendor Firms)

- Intellectual property rights imperative (of single-vendor open source)
  - "Always act in such a way that you, and only you, possess the right to provide the open source project under a license of your choice." [1]
- Use contributor assignment to maintain ownership
  - •Almost all single-vendor open source firms require copyright transfer for any contributions to maintain full IP ownership [2]

- [1] Riehle, D. (2009). The Intellectual Property Rights Imperative.
- [2] All you really need is a relicensing right though

# **Multi-Vendor Commercial Open Source**

- Multi-vendor = no single dominant owner, rather shared control
  - If so, best under a foundation to ensure reasonable governance
  - •Creates the problem of starving the project for new features

Hadoop	Kafka	Lucene / Solr
cloudera	confluent	<b>elastic</b>
MAPR.	aiven	Lucidworks
HORTONWORKS°	instaclustr	swiftype

# **Definition of Open Source Distribution**

# An open source distribution

 Is a well integrated collection of open source components and applications

# An open source distributor firm

•Is firm that provides an open source distribution as a product or service

# **Characteristics of an Open Source Distribution**

- •An open source distribution is a complex software where complexity stems from
  - The number of components
  - •The individual complexity of a component
  - Keeping the components working with each other
  - Keeping the components up-to-date
- •A commercial open source distributor hides this complexity from the user (for pay)

# **Examples of Open Source Distributor Firms**

#### •Linux









### Kubernetes









#### Miscellaneous





# Community vs. Commercial Edition (Distributor Firms)

- Community edition
  - Example Linux-based distributions
    - Canonical
      - Ubuntu
    - Univention
      - Univention Corporate Server
    - Red Hat
      - Fedora, CentOS
    - Suse
      - OpenSuse
  - Product
    - Core product
      - Core software
        - Provided under its open source license
      - Complementary artifacts
      - Self-help services

- Commercial edition
  - Example Linux-based distributions
    - Canonical
      - Ubuntu
    - Univention
      - Univention Corporate Server
    - Red Hat
      - Red Hat Enterprise Linux
    - Suse
      - Suse Linux Enterprise Server
  - Product and services
    - Core product
      - Core software
        - Provided under its open source license
      - Additional functionality
        - Provided under a commercial license
      - Complementary artifacts
      - Self-help services
    - Basic product
    - Whole product

# Intellectual Property Management (Distributor Firms)

- •Distributor firms do not exclusively own the copyright to the code
- Distributor firms can (and do) exclusively own
  - •Build processes for building the product from its components
  - Compatibility matrices and configuration data
  - Knowledge databases for support
  - Tests and test suites
- Distributors own "what's in between" the open source code
  - Sometimes manifests itself exclusively in people

# **Definition of Service and Support Firm**

- •An open source service and support firm
  - •Is a consulting firm that services and supports community open source software

# **Characteristics of Service and Support Firms**

- •A service and support firm is a consulting firm
  - Revenues mostly scale with labor
- •These firms contribute to the open source project they support
  - Such positioning is important for marketing and sales