Single-Vendor Open Source at the Crossroads

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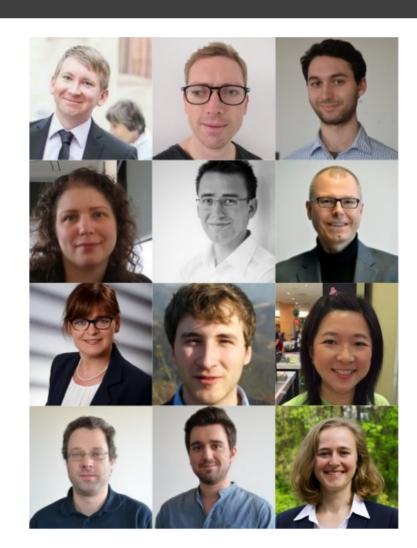**2019-03-13 – LF OSLS 2019 – California, U.S.A**

- Professor of Computer Science
  - For software engineering and open source software
  - At the computer science department of the engineering faculty

- Previously held research positions at ...
  - SAP Labs (Silicon Valley) leading the open source research group
  - UBS (Swiss Bank, Zurich) leading the software engineering group

- Previously worked in development at ...
  - Skyva Inc. (supply chain software, Boston) as software architect
  - Bayave GmbH (on-demand business software, Berlin) as CTO

FAU FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG

Professorship of Open Source Software

- At the computer science department
    - Also teaches in information systems at FAU
    - Led by Prof. Dr. Dirk Riehle, M.B.A.

- Core research and teaching areas
    - Open source software
        - Governance and license compliance
        - Open source strategies
        - Open source business models

    - Inner source software development
        - Program management, project management
        - Quality assurance and security
        - Transfer pricing and intellectual property

    - Artificial intelligence techniques in applications

Single-Vendor Open Source

- Commercial open source business models

  - Service and support firms
  - Open source distributor firms
  - **Single-vendor open source firms**

- Single-vendor open source firms

  - Exclusively own (key parts of) the software their business is based on
  - Can attract venture capital funding; can have outsize returns
  - Perhaps better be called neo-proprietary software vendors

Terminology Disambiguation

- Single-vendor open source (vendor-owned open source)

  - An open source project exclusively owned (in key pieces) by a particular vendor

- Dual licensing / multi-licensing

  - The practice of licensing a piece of software under two or more licenses

- IP modularity (open core model)

  - The practice of splitting software into modules of different licenses

- Community vs. commercial or enterprise edition

  - Community edition = pure open source source software (often open core)
  - Commercial or enterprise edition = the commercially licensed product

Three Generations of Single-Vendor Open Source Firms

- The pioneers
  - MySQL, Sleepycat Software, Trolltech

- The second wave / growth of model
  - SugarCRM, Mulesoft, Jaspersoft, etc.

- The current breed (at the crossroads!)
  - MongoDB, Redis Labs, Confluent [1], etc.

- "Gartner Predicts" (2010)
  - "By 2012, at least 50% of direct commercial revenue attributed to open-source products or services will come from projects under a single vendor's patronage." [D10]

[1]   Confluent is listed because of their license change; if you define
Apache Kafka as the product's core, it is multi-vendor, not single-vendor

Company

	Company	Employees	Est. Revenue (M)	Est. Valuation (B)	Stock	Exit	Outcome (B)	Exit Date	Technology Area	Monetization Model	Core Project(s)	OSS License	Foundation-Based
1	Company	Employees	Est. Revenue (M)	Est. Valuation (B)	Stock	Exit	Outcome (B)	Exit Date	Technology Area	Monetization Model	Core Project(s)	OSS License	Foundation-Based
2	Acquia	850	$200	$3.0	Private	No			Web Content Mgmt System	Open Core	Drupal	GPL v2	Sorta, Drupal Foundation
3	Alfresco	450	$100	$0.3	Private	Yes	$0.30	2/8/18	ECM <> BPM	Open Core	Alfresco	LGPL v3	No
4	Automattic	800	$300	$4.0	Private	No			Content Management System	Open Core	Wordpress	GPL v2	https://wordpressfoundation.org/
5	Canonical	600	$150	$1.5	Private	No			Operating System (Linux)	Support Subscriptions	Ubuntu	GPL	Ubuntu Foundation ($10M seeded, no website)
6	Chef	320	$100	$1.0	Private	No			Configuration Management	Open Core	Chef	Apache 2.0	No
7	Cloudera	3,300	$800	$2.6	Public	IPO	$1.90	4/28/17	Big Data / Hadoop Ecosystem	Open Core	Hadoop	Apache 2.0	http://hadoop.apache.org/
8	Confluent	490	$150	$2.5	Private	No			Big Data / Middleware / Streaming	Open Core + SaaS	Kafka	Apache 2.0	http://kafka.apache.org/
9	Coinbase	800	$1,500	$8.0	Private	No			Cryptocurrency Wallet/Exchange/Platform	SaaS	Bitcoin/Ethereum/Litecoin	MIT/A2.0	Yes
10	Datastax	700	$150	$2.5	Private	No			NoSQL Database	Open Core	Cassandra	Apache 2.0	http://cassandra.apache.org/
11	Databricks	650	$250	$2.8	Private	No			Big Data / Hadoop Ecosystem	Open Core + SaaS	Spark	Apache 2.0	https://spark.apache.org/
12	Docker	530	$120	$2.5	Private	No			Developer / Ops / Infra Tools	Open Core	Moby	Apache 2.0	No
13	Elastic	1,200	$400	$5.0	Public	$2.5B IPO	$2.5B	10/5/18	Distributed Search Index + Tools	Open Core	ElasticSearch	Apache 2.0	Lucene in ASF (basis for ElasticSearch)
14	Fastly	460	$100	$1.5	Private	No			CDN	SaaS	Varnish	BSD	No
15	ForgeRock	550	$120	$1.5	Private	No			Identity and Access Management	Open Core + SaaS	OpenAM/IDM/DJ/IG	CDDL	No
16	GitHub	1,100	$400	$7.5	Private	Yes	$7.50	6/4/18	Distributed Source Code Version Control	Open Core + SaaS	Git	GPL v2	No
17	HashiCorp	400	$250	$2.5	Private	No			Developer / Ops / Infra Tools	Open Core + SaaS	Many	MPLv2	No
18	Hortonworks	1,500	$400	$1.5	Public	IPO	$0.70	12/11/2014	Big Data / Hadoop Ecosystem	Support Subscriptions	Hadoop	Apache 2.0	http://hadoop.apache.org/
19	Instructure	1,300	$220	$1.4	Public	IPO	$0.65	11/13/2015	Learning Management	Open Core + SaaS	Canvas	AGPL v3	No
20	JetBrains	700	$300	$3.0	Private	No			Developer Tools	Open Core	IntelliJ	Apache 2.0	No
21	JFrog	400	$150	$1.5	Private	No			Software Artifact Repository	Open Core	Artifactory	AGPL v3	No
22	Kaltura	420	$200	$1.5	Private	No			Video Editing Platform	Open Core	Kaltura	AGPL v3	No
23	Liferay	850	$250	$2.5	Private	No			Enterprise Portal	Open Core	Liferay Portal	LGPL v2.1+	No
24	MapR	500	$100	$1.0	Private	No			Big Data / Hadoop Ecosystem	Open Core	Hadoop	Apache 2.0	http://hadoop.apache.org/
25	Mapbox	450	$100	$1.5	Private	No			Mapping Software	Open Core + SaaS	Mapbox GL JS	https://github.com	No
26	Magento Commerce	700	$200	$1.7	Public (via Adobe)	No	$1.68	5/20/18	Web Content Mgmt System	Open Core + SaaS	Magento	OSL v3, AFL v3	No
27	Mirantis	475	$100	$1.0	Private	No			Infrastructure Software	Open Core	OpenStack	Apache 2.0	https://www.openstack.org/foundation/
28	MongoDB	1,300	$300	$5.0	Public	IPO	$1.60	10/19/17	NoSQL Database	Open Core	MongoDB	AGPL v3	No
29	Mozilla Foundation	1,100	$550	$5.0	Private	No			Web Browser	Royalties / Donations / Strategics	Firefox	MPLv2	https://www.mozilla.org/en-US/foundation/
30	MuleSoft	1,500	$500	$8.0	Public	$2.9B IPO + $6.5	$6.50	3/20/18	Middleware	Open Core	Mule ESB	CPAL	No
31	MySQL AB	800	$500	$10.0	Public (via Oracle)	Yes	$1.10	2/26/08	Relational Database	Open Core	MySQL	GPL v2	No
32	Nicira	100	$1,500	$1.3	Public (via VMware)	Yes	$1.26	7/23/12	SDN / Network Virtualization	Open Core	Open vSwitch	Apache 2.0	http://openvswitch.org/
33	Pentaho	400	$100	$1.0	Public (via Hitachi)	Yes	$1.10	6/4/15	BI/ETL	Open Core	Pentaho	Apache 2.0	No
34	Pivotal	2,500	$700	$4.5	Public	IPO	$4.00	4/20/18	PaaS / Hadoop / Spring	Open Core	CloudFoundry	Apache 2.0	https://www.cloudfoundry.org/foundation/
35	Puppet Labs	550	$250	$2.5	Private	No			Configuration Management	Open Core	Puppet	Apache 2.0	No
36	Red Hat	12,700	$3,500	$35.0	Public	IPO + IBM exit	$34.00	8/11/99	OS, Middleware, Infrastructure Software	Support Subscriptions	Linux	GPL v2	https://www.linuxfoundation.org/
37	Sourcefire	600	$400	$3.0	Public (via Cisco)	Yes	$2.70	10/7/13	Network Intrusion Detection	Open Core	Snort	GPL v2	No
38	SugarCRM	400	$150	$1.0	Private	No			CRM	Open Core	SugarCRM	Apache 2.0	No
39	SUSE	1,500	$380	$2.5	Public (via Novell) + Pri	Yes	$2.50	11/4/03	Operating System (Linux)	Support Subscriptions	Linux Kernel	GPL v2	https://www.linuxfoundation.org/
40	Talend	1,150	$100	$2.0	Public	IPO	$0.55	7/28/16	SOA/ETL/AI/Middleware	Open Core	Talend Data Integration	Apache 2.0	No
41	WP Engine	610	$100	$1.0	Private	No			Content Management System	Open Core	Wordpress	GPL v2	https://wordpressfoundation.org/
42		**45,705**	**$16,140**	**$147.1**			**$68.04**						

For this spreadsheet, please see http://oss.cash; it shows that venture capital funding in single-vendor and related companies is highly lucrative.

Why the Open Source Strategy?

- Purpose of open sourcing
  - To build a large (not necessarily paying) user base from which benefits accrue

- What is not new
  - Revenue sources

- What **is** new
  - Everything else (changes)

Whole product

Basic product

Usage rights

Software (core product)
- Core software
- Additional software (extensions + plug-ins, tools and utilities, integrations)

Complementary materials
- Documentation
- Training materials

Self-help services
- Forums, mailing lists
- Help and chat agents
- On-line tutorials

Pricing of usage rights
- Quantity: User, machine, time, …
- Duration: Perpetual, time-limited, …
- Structured: Initial license fee, regular maintenance fee

Guarantees ("insurance")
- Fitness for use, certification
- Indemnification

Pricing of guarantees
- By damage: Loss of business, fines received
- Structured: Levels / bands, formula

Support services
- Hot-line support
- On-site servicing

Pricing of support services (SLAs)
- By availability: Incident-based, 9x5, 24x7
- By quality: First-level, second-level, third-level

Training
- In-house training
- Off-site training

Pricing of training
- Fixed fee
- Per participating person

Consulting
- Technical implementation services
- Strategic solution consulting

Pricing of consulting
- Fixed fee
- Time and materials

Operations
- Provision of SaaS (managed service)

Pricing of operations
- Quantity: Users, resources, …
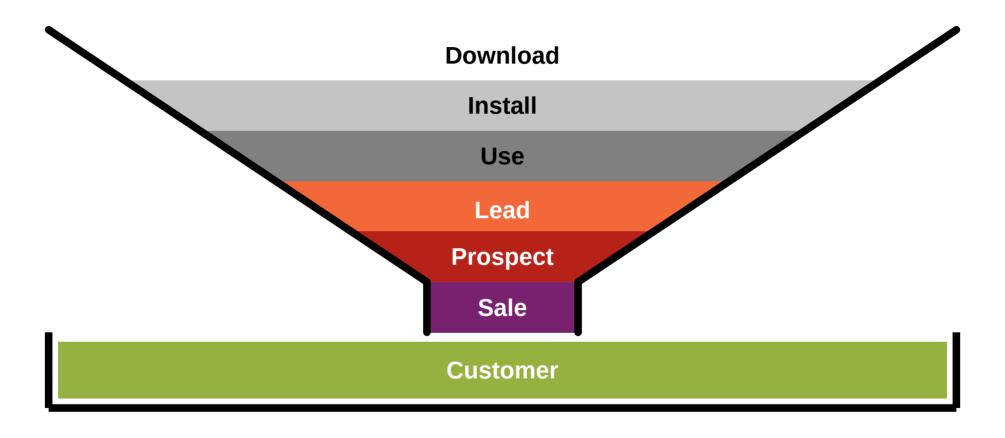- Duration: Always time-limited
- Structured: Set-up, subscription

Impact of Open Sourcing on Business Functions

- Marketing

  - Get help from open source community

- Business development

  - Identify partner opportunities faster / better / cheaper

- Product management

  - Learn from users, identify market opportunities
  - Build a superior product faster

- Software development

  - Build a product faster at lower cost
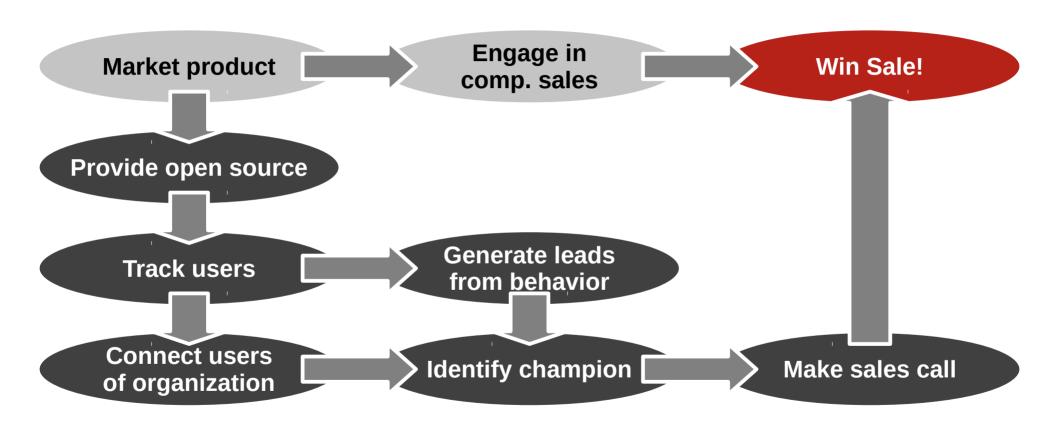 - Recruit better faster

- ...

	2011 ($m)	Percentage
Revenues	$1.657	100%
Subscription and Support	$1.551	94%
Professional Services etc.	$106	6%
Cost of Revenues	$324	20%
Subscription and Support	$208	13%
Professional Services etc.	$116	7%
Gross Profit (and Gross Margin)	$1.333	80%
Operating Expenses		
Research and Development	$188	11%
Sales and Marketing	$792	48%
General and Administrative	$256	15%
Total Operating Costs	$1.236	74%
Operating Profit (and Operating Margin)	$97	6%

Commercial Open Source Sales Funnel

Commercial Open Source Sales Process Illustrated

Market product → Engage in comp. sales → Win Sale!

Market product → Provide open source → Track users → Connect users of organization → Identify champion → Make sales call → Win Sale!

Track users → Generate leads from behavior → Identify champion

Intellectual Property Management

- 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." [R09]

- Use contributor agreement to maintain ownership

  - Almost all single-vendor open source firms require copyright transfer for any contributions to maintain full IP ownership [1]

- Use reciprocal license to keep competition away

  - Almost all single-vendor-owned commercial open source is provided under a reciprocal license, typically the AGPLv3

[1]   All you really need is a relicensing right though.

Community Management

- Community management
  - Is a business function tasked with
  - Creating, growing, and maintaining
  - A **self-sustaining** open source community
  - Around the vendor's products

- Community manager role
  - Is a role (but often also a full-time position)
  - Tasked with community management
  - Challenged by community scalability

- Community management tasks
  - Create community
    - Pull members on board
    - Make members return, stay

  - Grow community
    - Lead community to help each other
    - Enable self-sustaining growth

  - Manage community
    - Maintain community peace
    - Facilitate community benefits

Key Challenges of Product Management

- Product definition

  - Maximize the incentive for non-paying users to become paying customers
  - While not creating crippleware and alienating the open source community
  - And minimizing the opening for other firms to compete using your product

- Maintaining goodwill

  - Be forthcoming and predictable
  - Over the full product life-cycle

At the Crossroads

- Current licensing of single-vendor open source does not keep competition away
    - In particular, large cloud providers are providing single-vendor open source as a packaged product
    - A consequence of permissively-licensed client libraries to drive adoption?

- In reaction to this competition, single-vendor open source firms changed their licenses
    - The new licenses are trying to prevent the aforementioned competition
    - So far, the new licenses are arguably not open source licenses

- This created a crisis of goodwill for the single-vendor open source firms
    - If not with customers, then at least with the open source community at large
    - This threatens the benefits of the open source strategy for the firm

Thank you! Questions?

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DR

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[R09]   Riehle, D. (2009). The intellectual property rights imperative. Available at http://wp.me/pe4V6-io
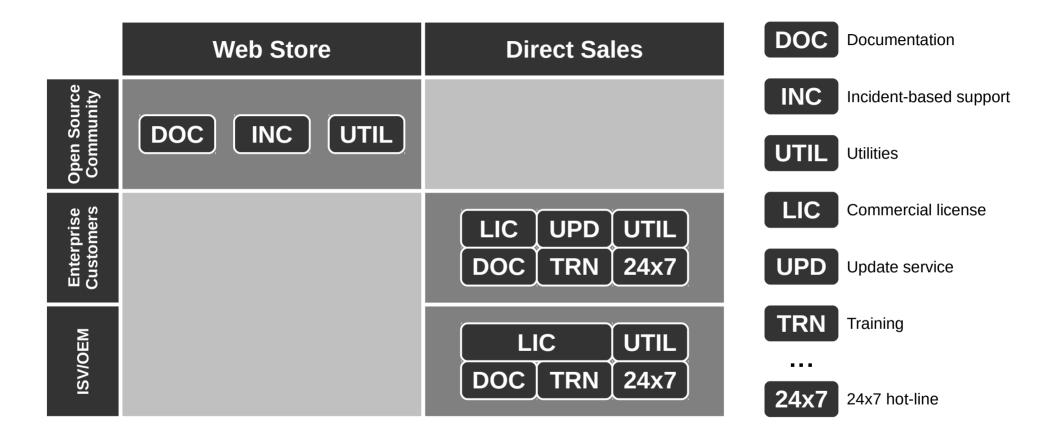
Credits and License

- Original version

    - © 2012-2019 Dirk Riehle, all rights reserved

- Contributions

    - ...

"Some people spend time to save money, some spend money to save time."   [M10]

Revenue Sources of Jaspersoft (2010)

	Web Store	Direct Sales
Open Source Community	DOC INC UTIL	
Enterprise Customers		LIC UPD UTIL DOC TRN 24x7
ISV/OEM		LIC UTIL DOC TRN 24x7

DOC Documentation

INC Incident-based support

UTIL Utilities

LIC Commercial license

UPD Update service

TRN Training

...

24x7 24x7 hot-line

Community and Revenue Proportions [1]

- Community proportions

Passive Users	**100-10000x**
Active Customers	**10-500x**
Firm Employees	**1**

- Revenue proportions

Non-paying Users	**0%**
Webstore Sales	**0-1%**
Enterprise Sales	**99-100%**

[1] Anno 2010