NGI DAPSI

Data Portability and Services Incubator

OSS Business Models

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ENGINEERING

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Who we are

Stefano Scamuzzo has long working experience in the IT field. Initially involved in European research projects on hypertext technology, he then undertook the technical management of complex projects in several technological areas such as document and workflow applications, web based applications, enterprise portals and business intelligence applications. At present, he is working within the Research & Innovation Division, as a member of KNOWAGE Board. He masters the domains of service-oriented architectures and Business Intelligence, with a particular focus on open source solutions.

Daniele Gagliardi is a Technical Manager at Engineering Group - ICT Technical and Innovation Direction. He works as a consultant about ALM, Software Testing, Test Automation and DevOps, how leveraging OSS tools to support them. He currently represents Engineering Group at OW2 Board of Directors and chairs OW2 Technology Council. In the past he spoke at OSS conferences (OW2Con', Eclipse Conference Europe) and worked as WP Leader in STAMP H2020 research project. Passionate about computer science since early years (he started to code on a Commodore 64), he discovered the world of open source at university and was impressed by the value that OSS open knowledge daily gives to the society.

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Agenda

- Economic Ecosystems: definition and overview
- OSS Communities: members, roles, interactions, companies and individuals engagement
- Coopetition: OSS organizations and business ecosystems in action
- Intellectual Property and Licences
- OSS Business Models Overview
- OSS Business Models Focus
  - Red Hat
  - Xwiki
  - VideoLabs
  - KnowAge
- Conclusion and QA

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Prelude: the Four Freedoms

- The freedom to run the program as you wish, for any purpose (freedom 0).
- The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help others (freedom 2).
- The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

OSS Business Models shouldn't ignore them

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Economic Ecosystems: definition and overview

In the 1930s, British botanist Arthur Tansley introduced the term ecosystem to describe a community of organisms interacting with each other and their environments: air, water, earth, etc. In order to thrive, these organisms compete and collaborate with each other on available resources, co-evolve, and jointly adapt to external disruptions.

Business strategist James Moore adopted this biological concept in his 1993 Harvard Business Review article "Predators and Prey: A New Ecology of Competition", in which he paralleled companies operating in the increasingly interconnected world of commerce to a community of organisms adapting and evolving to survive. Moore suggested that a company be viewed not as a single firm in an industry, but as a member of a business ecosystem with participants spanning across multiple industries.

Economic Ecosystems: definition and overview

"An economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world. The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders. Over time, they co-evolve their capabilities and roles and tend to align themselves with the directions set by one or more central companies. Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments and to find mutually supportive roles." (James Moore)

Important! Like natural ecosystems, the firms involved in business ecosystems compete for survival with adaptation and sometimes extinction.

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A non-IT example: Lyon Silk Factory

Middle of the 18th century, **english government adopted a patent system to protect their innovation** and production of goods.
No patent system did exist in France.
The town of Lyon adopted an open attitude governance in order to drive their innovations.

In **1814**, we could count **14.500** loom in London versus **12.000** in Lyon.
In **1853**, they were only 5.000 looms left in London versus **60.000** looms in Lyon.

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A non-IT example: Lyon Silk Factory

1800-1900, Lyon was famous for
- its loom ecosystem,
- silk factories, and,
- open attitude governance.

Demands from North America, EU …
Major competitors in Italy and in England.

The town of Lyon set up & organized public meetings where:
- inventors came & presented new technologies, new methods & possible improvements for the loom industry.
- Industrials were invited to the public meetings.

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A non-IT example: Lyon Silk Factory

Incentives

- **Companies** that integrated the technologies presented were persuaded to **document and disseminate the nature of the integrations, and any improvements** they noticed
- The **number of machines or processes** which has been **impacted** by the innovation were **traced**.
- The **knowledge** based upon research and industrials where then **put back into the public domain**, **people** were then **encouraged to present the new modifications**, etc.

Monitoring (Measurements & Metrics)

The town of Lyon carefully monitored

- the presentation of novelties
- the adoption of those new technologies by the industrials.

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A non-IT example: Lyon Silk Factory

Rewarding

- **Inventors were remunerated** by the town accordingly to the estimated **value** of their invention and accordingly to the usage **popularity** in the silk factories.
- Grants were based on the nature of the invention, the effort made by the inventor to share his knowledge and the effectiveness of the results.

Standardisation

The town of Lyon decided to establish standards for the loom industry:

- **facilitate the maintenance** of the machines
- ensure a certain level of **interoperability** between machine/components stimulate a normalization of the “user interface”

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A non-IT example: Lyon Silk Factory

New market!

- Thanks to this standardization, a new market appeared: **the market of spare parts**.
- Manufacturers, resellers, technicians had access to a widely open market in which monopoly situations where virtually nonexistent which brought cheaper goods and cheaper services.

Open governance

The open attitude governance of the city of Lyon enabled the creation of an important loom ecosystem which pushed the town of Lyon as the leader of the silk market.

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A non-IT example: Lyon Silk Factory

Impacts

- **creation of new technologies** by building new components above existing innovations
- **diversity** in the production of goods
- **peer-to-peer collaboration network** that added flexibility in the production of silk goods.
- **promote inventions** while making them **public & open**
- leverage **motivations** by rewarding smartly inventors.
- **relationship and collaboration** between the different factories and looms.
- Thanks to the **standardization**, **a new market** of spare parts **appeared**.

Open source before the open source

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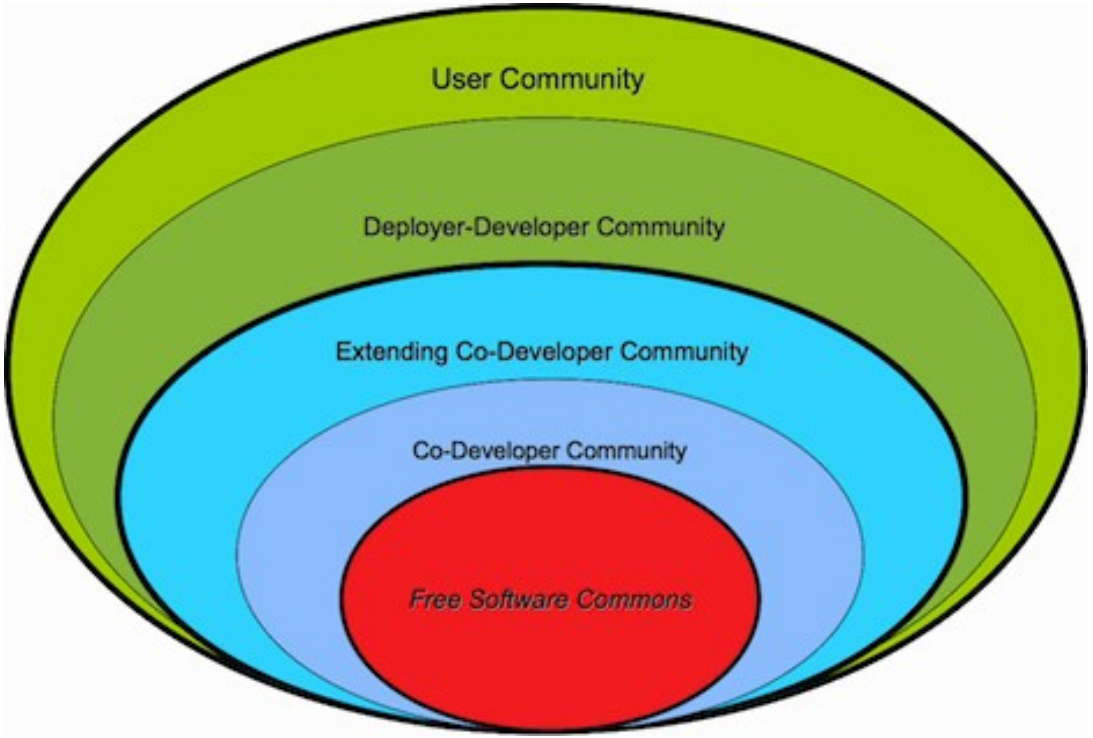
OSS Communities: members, roles, interactions, companies and individuals engagement



Layered model by Simon Phipps

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OSS Communities: members, roles, interactions, companies and individuals engagement

- Co-Developer communities – people directly engage with the core source code for the project
- Deployer communities – running instances of the code configured and deployed by community members in conjunction with other software (deployment stacks) - bug reports, test case, occasional fixes, no direct code contribution
- People may play multiple roles
- The freedoms people need protected vary between roles (original four freedoms are a baseline)
- The way a commercial organization engages with communities must respect both the role the organization plays in relation to the community and also the roles of the people they wish to influence
- 90:9:1 – 90 out of 100 plain users, 9 out of 100 interacting users, 1 out of 100 contributes

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Different kind of communities

open source communities evolution over time




Actors	**Individuals**	**Community**	**Communities, Consortia, Competence Centers**
Management	**Hacker ethics**	**Governance**	**Networks Ecosystems**
Goals	**Technology**	**Technology**	**Technology Business**

source: Cedric Thomas, OW2 Consortium, 2008

A collective business model: collaboration to increase the value of the organization as a whole

Co-opetition relations: availability of technology and of a business platform

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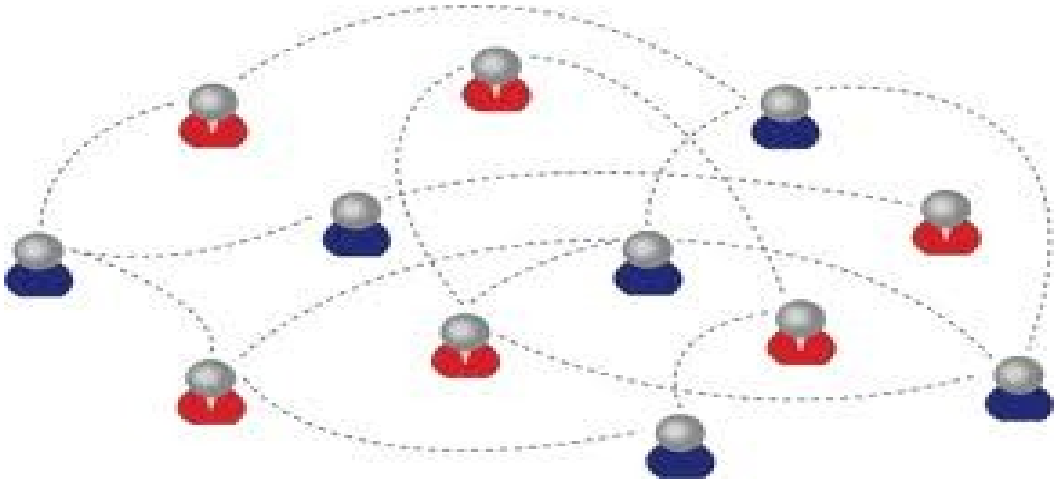
Community vs Network

COMMUNITIES:

Safe place for personal achievement (love/gift)

Restrictions: reception and exclusion

Personal and collective identity



NETWORKS:

Unsafe ever-evolving place (gain/loss)

Openness: connection and disconnection

Personal identity and collective marketing

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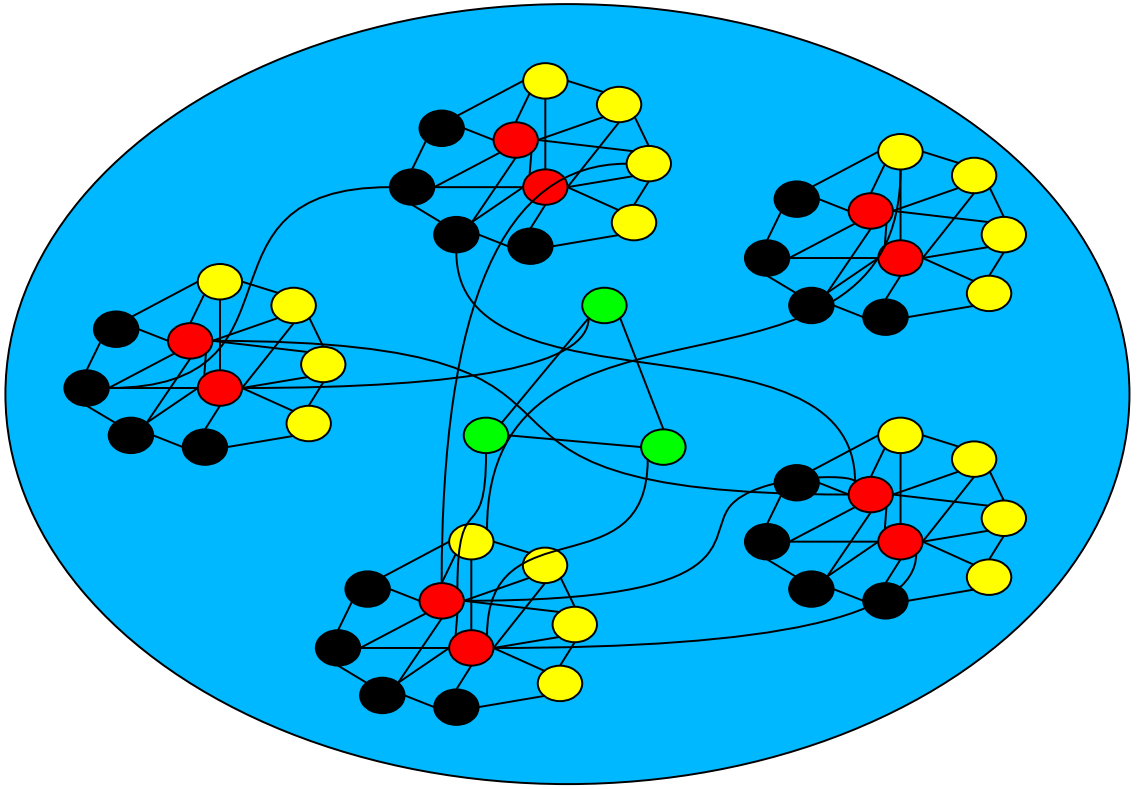
New Commercial Model: Business Ecosystem



Enterprises
End users

Developers

Integrators
Service providers

Network aggregators

from profit-based to value-based economic models
community and network coexistence

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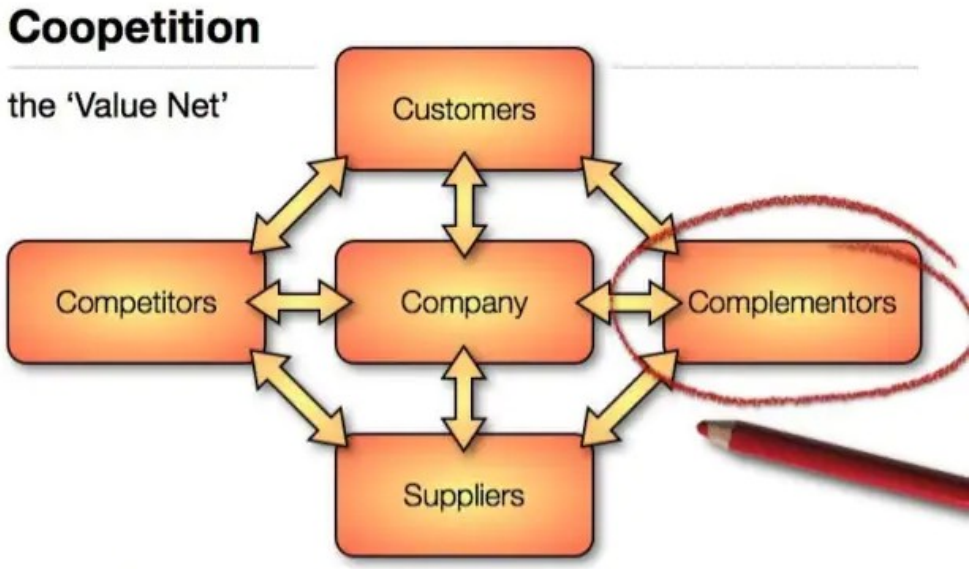
Coopetion: OSS organizations and business ecosystem in action

Coopetition is the act (art?) of cooperation between competing companies; businesses that engage in both competition and cooperation are said to be in coopetition. Certain businesses gain an advantage by using a judicious mixture of cooperation with suppliers, customers, and firms producing complementary or related products.

Customers – The people who buy your product or service.
Suppliers – These provide your organization with the resources you need to produce a saleable product. (Keep in mind that suppliers can be outside organizations, or your own employees.)
Competitors – Competitors take a share of your target market by offering a similar product or service.
Complementors – These are other players who provide a product or service that can be linked to your own to make both offerings more attractive to your customers.



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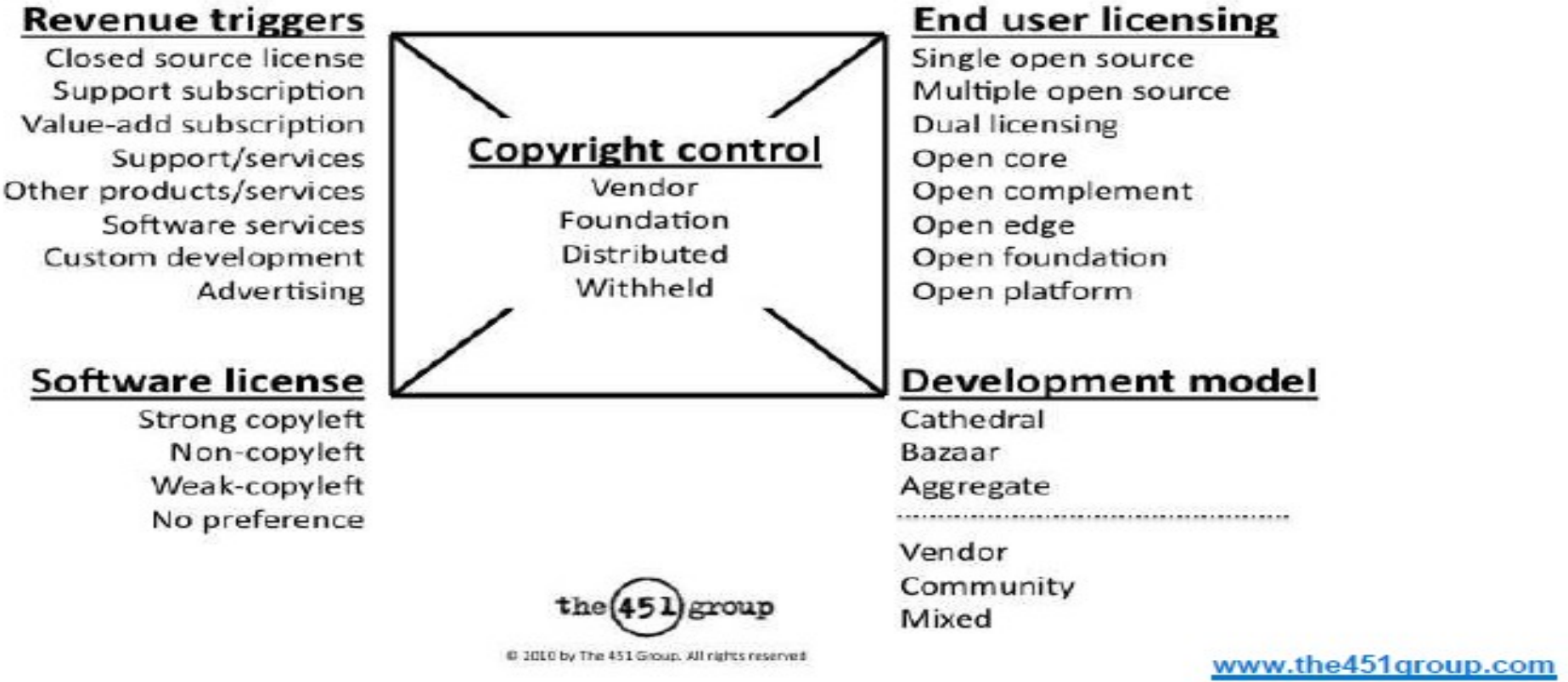
Open source business strategy



Intellectual Property and Licences

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.

IP is protected in law by, for example, patents, copyright and trademarks, which enable people to earn recognition or financial benefit from what they invent or create

Copyright – Rights that creators have over their literary and artistic works
Patents – Exclusive right granted for an invention. Inventor has right to decide how and whether the invention can be used by others. Patent owner makes technical information about the invention publicly available in the patent document
Trademarks – Sign capable to distinguish goods or services of one enterprise from those of other enteprises
Industrial design – ornament or aesthetic aspect of an article (shape, surface, color, patterns, lines)
Geographical indications – geographical indication and appellations on goods that have a specific geographical origin and possess qualities, reputation, characteristics essentially attributable to the place of origin
Trade secrets – IP rights or confidential information which may be sold or licensed. Unauthorized acquisition, use or disclosure of such secrets is an unfair practice and a violation of the trade secret protection

open source initiative
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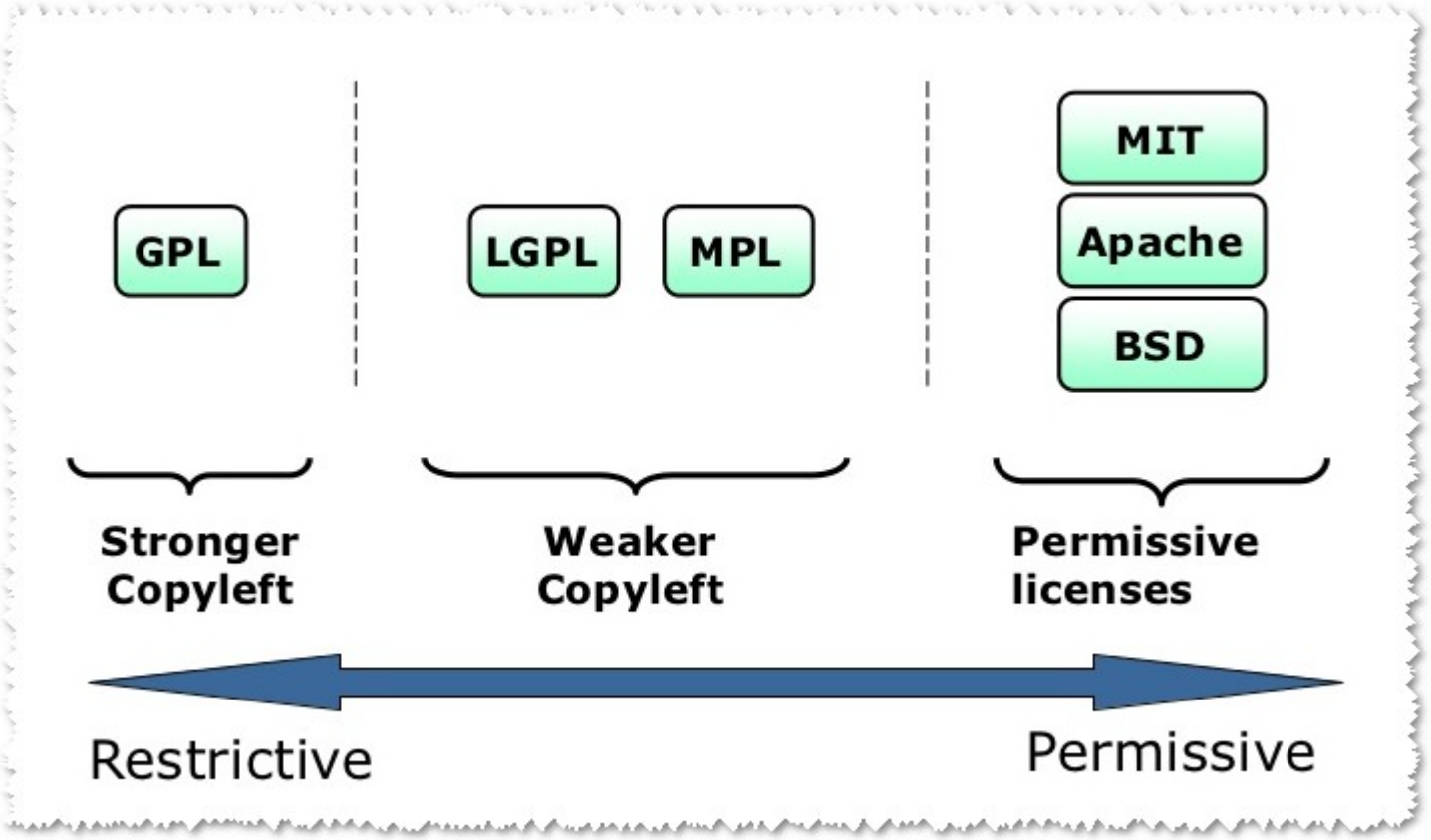
OSS licenses

Copyleft is a general method for making a program (or other work) free (in the sense of freedom, not “zero price”), and requiring all modified and extended versions of the program to be free as well.



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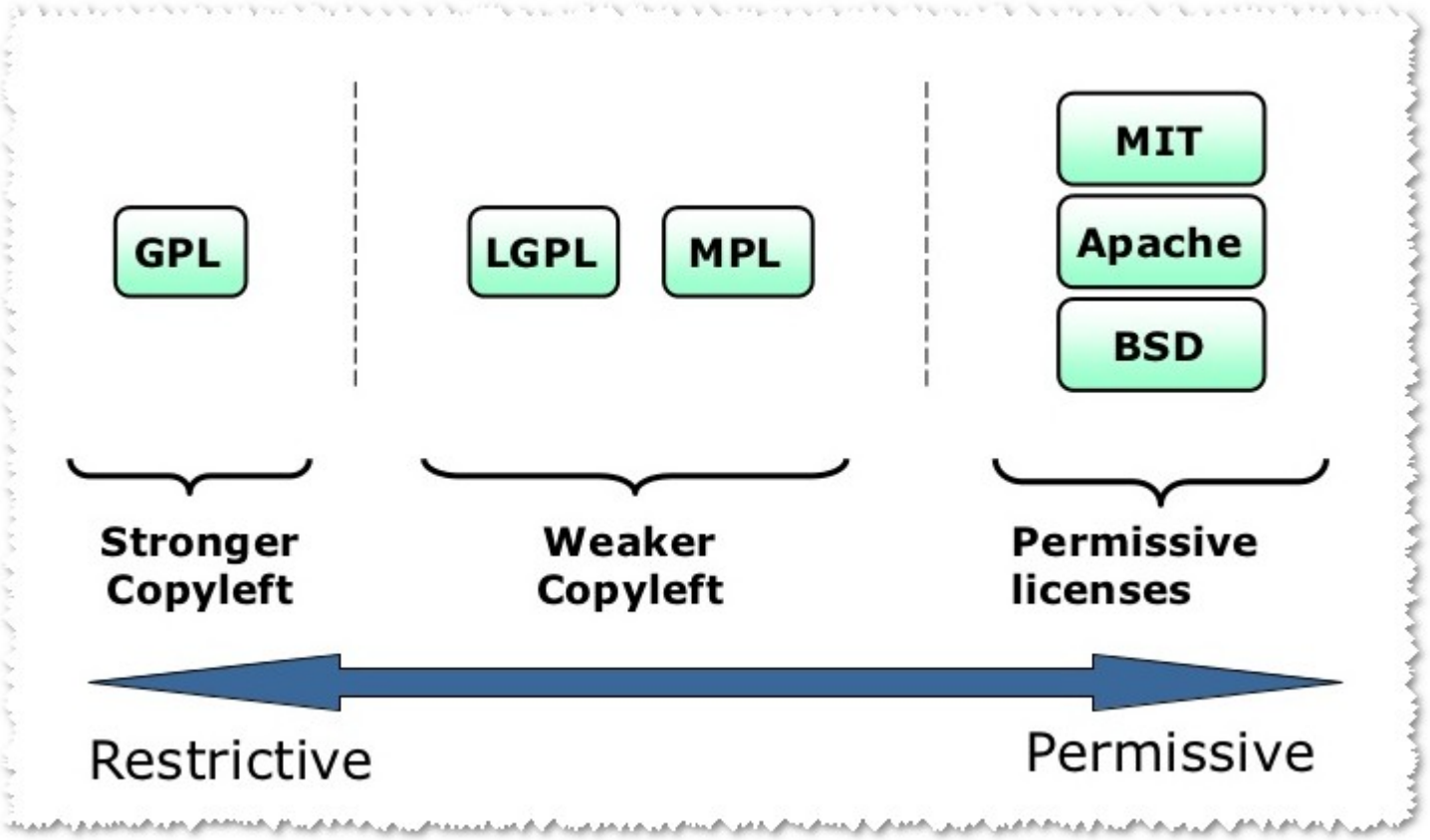
OSS licenses

Permissive licenses only require users to include (1) the original copyright notice and a (2) copy of the license text. Copyleft licenses have this condition as well. However, they also require users to offer the source code of any modifications to all recipients of the binary — and place those modifications under the same license. All reworkings of the code end up exactly as "open" as the original.



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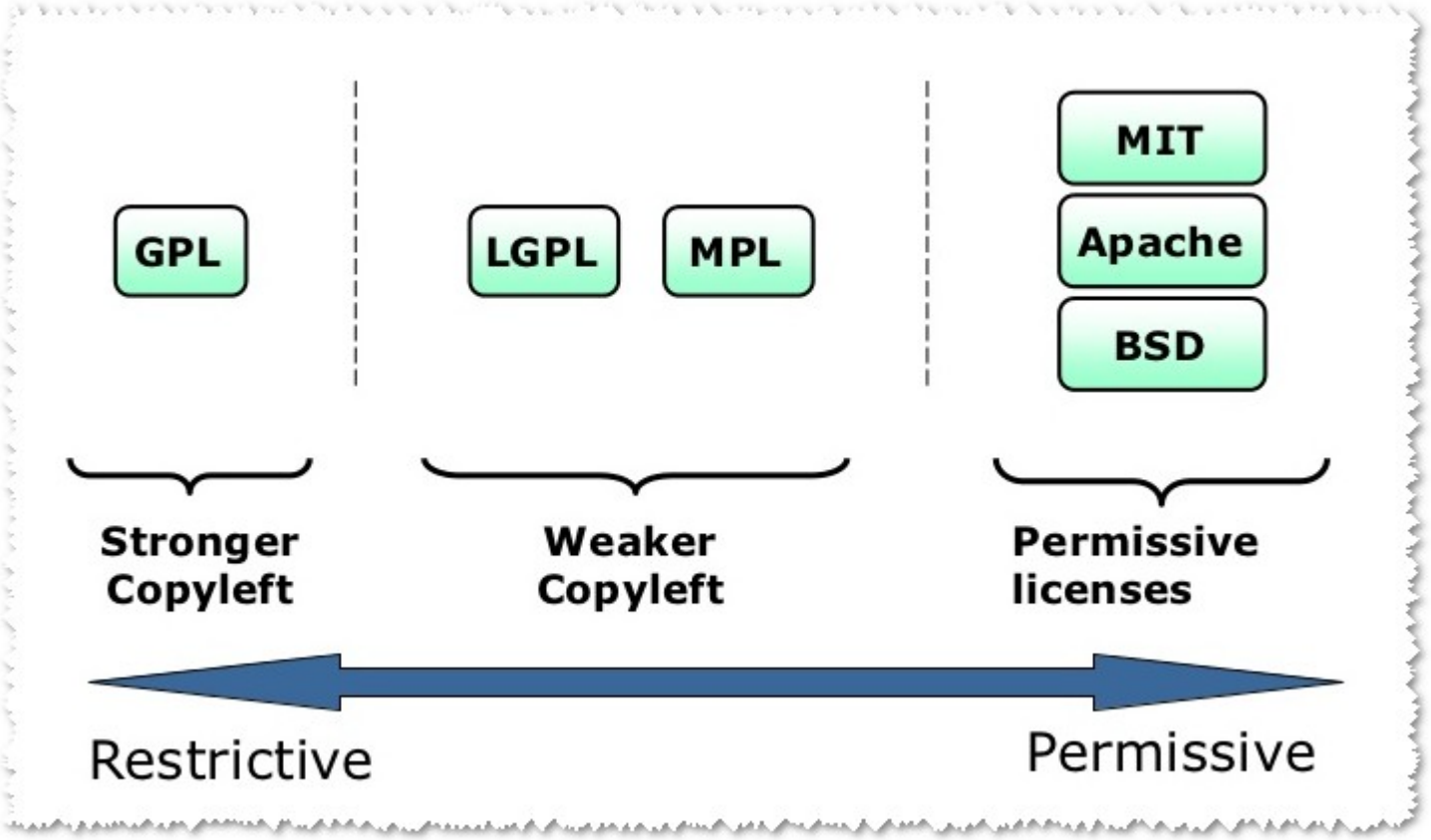
OSS licenses

The major differences between the two involve the license compliance conditions and how “open” any changes to the code must be.



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OW2 MRL: how ready is my OSS Product? (inspired by TRLs)

Market Readiness Level	Description	NASA TRLs
MRL 9 – Market Leader	Significant market share and global customer base. Properly financed and organized business support. Global active community.	“flight proven”
MRL 8 – Established Outsider	Customer base of mainstream users. Appropriate financing. Active community support and contributions. Recognized software	“flight qualified”
MRL 7 – Established Business	Established product. Customer base of early and mainstream users. Stable financing. Open to community support and contributions.	“prototype in space”
MRL 6 – Sizable Adoption	Proven product. Customer base of early users. Project fit for third party contributions. Implicit community governance	“proven demo”
MRL 5 – Fair Adoption	Some customers, recent market opening, Core team of developers, untested open source governance	“relevant envt validation”
MRL 4 – Usefulness Verified	Several users, project leadership well established	“lab validation”
MRL 3 – Fledgeling Usefulness	MVP stage One declared user (can be company internal) with declared project leader	“proof of concept”
MRL 2 – Product Development	POC stage. Basic R&D code developed with one demonstrated use case, some documentation	“application formulation”
MRL 1 – Basic Early Stage	Basic R&D code developed	“basic principles”

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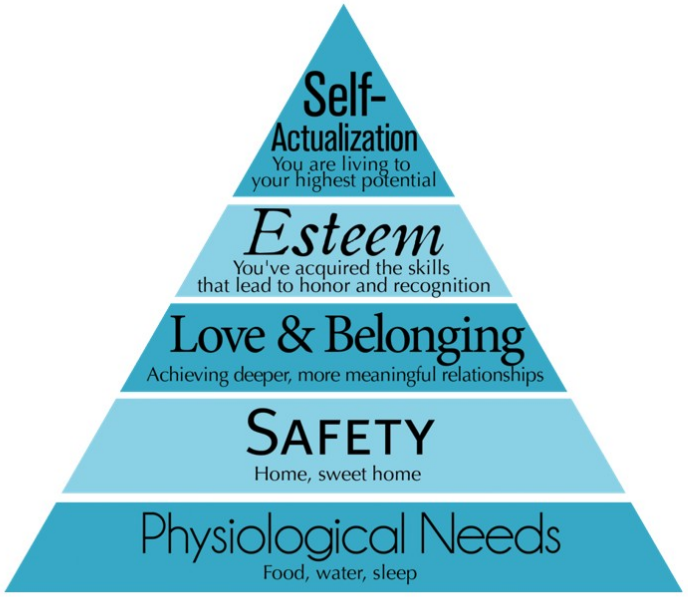
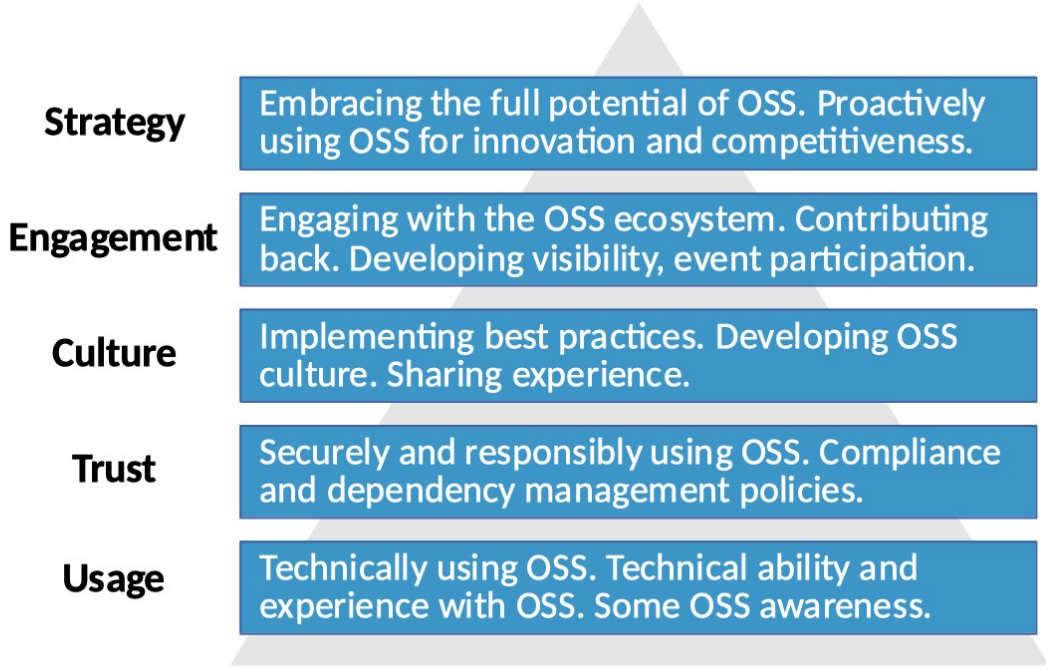
https://www.ow2.org/view/MRL/

OSS Good Governance

- Blueprint to implement corporate-wide open source policies
- Awareness and expertise on how to properly use and contribute to open source software
- Improve competitiveness and enhance sustainability of the European OSS Ecosystem



Abraham Maslow's Hierarchy of Behavioral Motivation



OW2 Goals to OSS Good Governance

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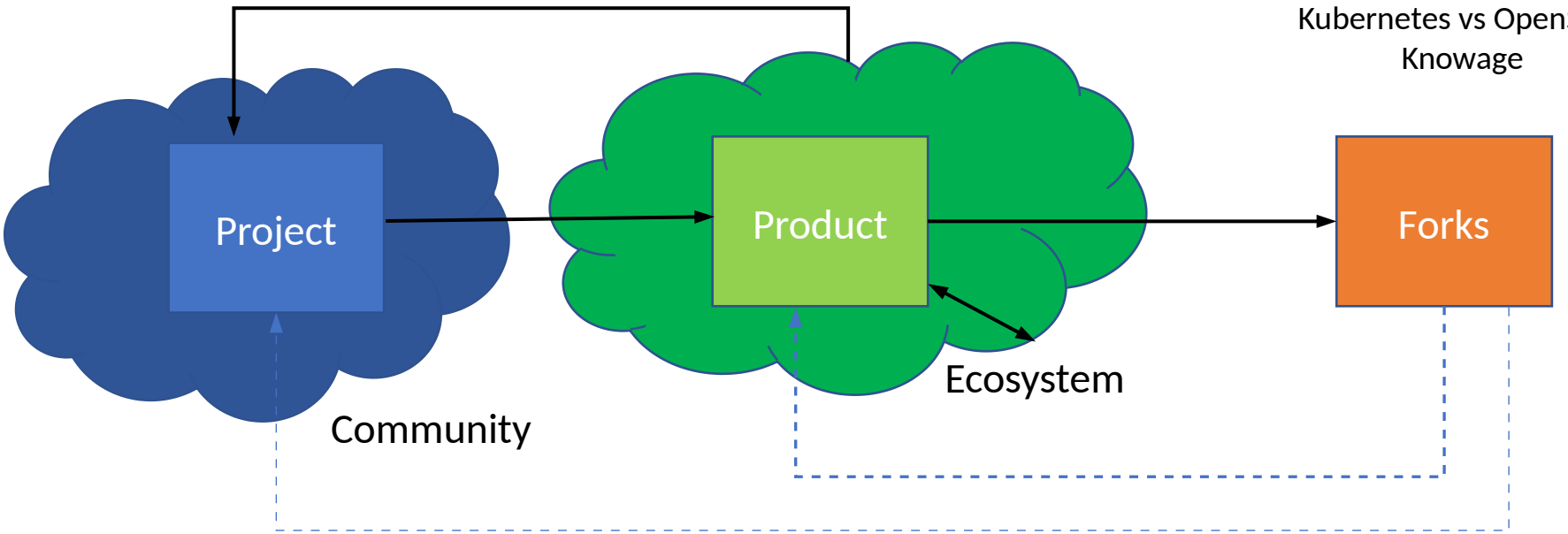
https://www.ow2.org/view/OSS_Governance/

Business Models, communities and ecosystems

Examples:

Kubernetes vs OpenShift
Knowage



Beware the 90-9-1 principle

Source: www.winglemeyer.com

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OSS Business Models

- **Open core** – core software code **with very valuable features** available to everyone, complemented with paid premium features. Rule of thumb: put features in the open core that **help users perform their daily job**—building key technology quickly and efficiently. Features that help enterprises extract additional value from the product generally, such as security, governance, and high availability, go into the commercial framework (e.g. **Confluent**, **ElasticSearch**, **KnowAge**)
- **Professional services** – One of the earliest OS business model. **Customers pay for support and consultancy**. A number of OS companies scaled with this model, but with significant challenges (service revenues unpredictable and thinner margins). Currently services bundled with additional product offerings (e.g. **Red Hat**, **XWiki**, **VLC**, **Hortonworks** pre Cloudera acquisition)
- **Hosting & Cloud Services** - open source company hosts and manages its entire stack (open core features as well as premium features), in the cloud and charges **users subscription or consumption fees** to access various tiers. Each tier adds additional functions or features. **Simpler commercial relationship**: rather than managing the customer move from free OSS license to a commercial one (legal and procurement processes), simply managing the customer move from a free tier or free trial to a paid version (e.g. **MongoDB**, **Gitlab**)
- **Marketplace** – open source company acts as an intermediary between different parties that interact with its product (e.g. **Android**, **Mozilla**)

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Business Models: Red Hat

- Year: 2001
- What:
  - Linux distros (RHEL, Fedora, CentOS)
  - OpenShift
  - JBoss
  - Ansible
- Business model:
  - Selling subscriptions for support, training, integration services
  - Development within a community
  - Professional quality assurance
- And…

https://www.redhat.com

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Business Models - XWiki

- Year: 2003
- What:
  - Enterprise grade Wiki with semantic annotations, advanced import/export
  - Cryptpad (https://xwiki.com/en/Blog/cryptpad-overview2021/), a Zero-knowledge cloud
- Business model:
  - Professional Services
- And…

https://www.xwiki.org/

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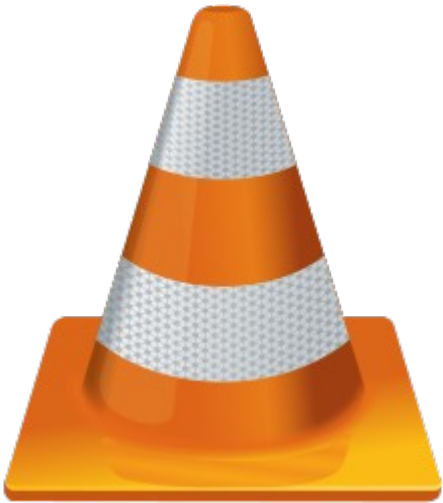
Business Models – VLC (Videolan)

- Year: 2001
- What:
  - VLC, Skin Designer, Non linear video editor, DVB Streaming, virtually every codec and every OS supported
- Business model:
  - Applications & integration B2B
  - Bugs and support B2B2C
  - Mirror Ads
  - Donations

https://www.videolan.org/



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Business Models - KnowAge

- Year: 2016 (formerly SpagoBI, since 2005)
- What:
  - Business Intelligence, Data Visualization, Analytics
- Business model:
  - Open Core
  - Professional services
  - Value-added, embedding and reselling

https://www.knowage-suite.com

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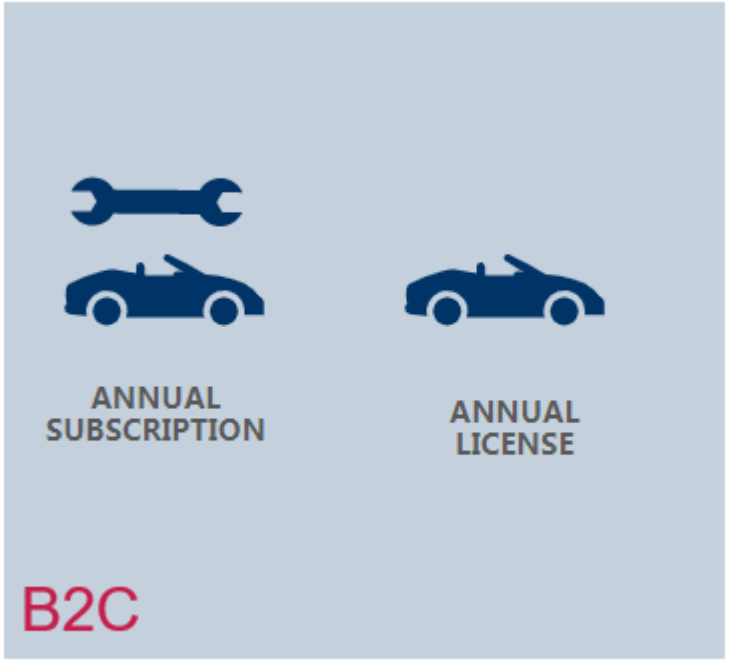
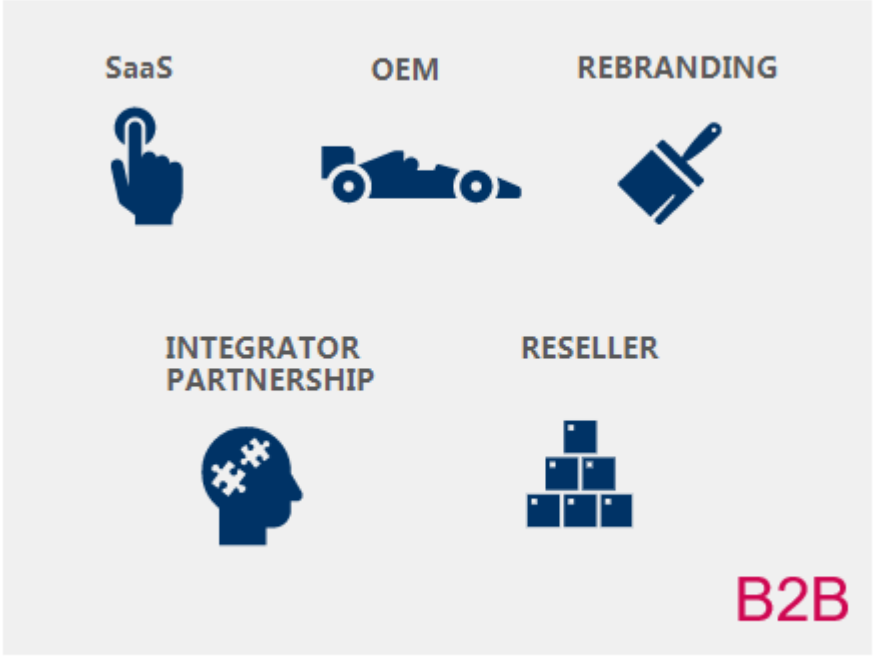
Business Models KnowAge





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Question and Answers

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Credits & References

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