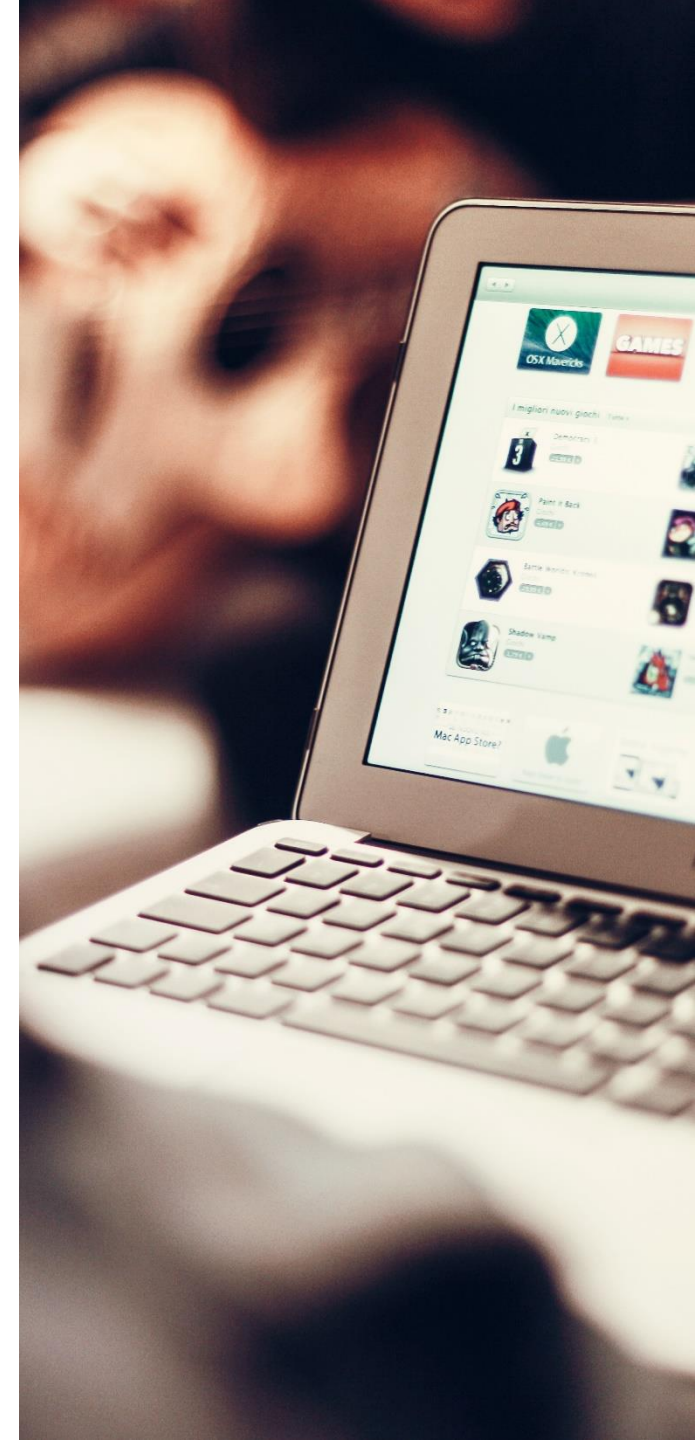


Business Models in Software Ecosystems

Lecture: „Software as a business“

TU Dresden | 11.01.2019 | Dirk Röhrborn



What are „business“ models meant for?



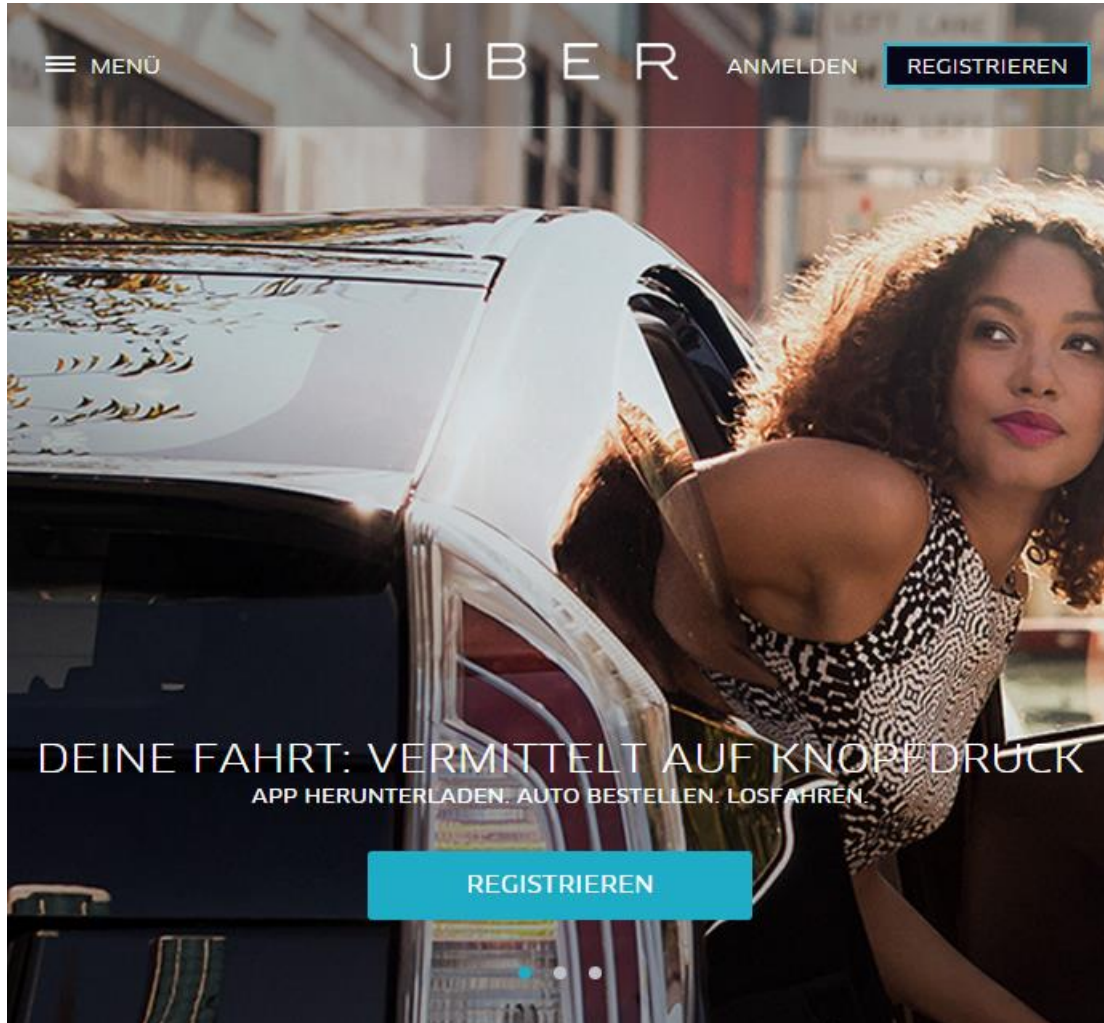
Generating profit!



For your Ferrarri or your family ;-)

Who will generate more profit in future?

Uber or the taxi cooperation?



or



Who will generate more profit in future?

Department stores or Amazon?



or

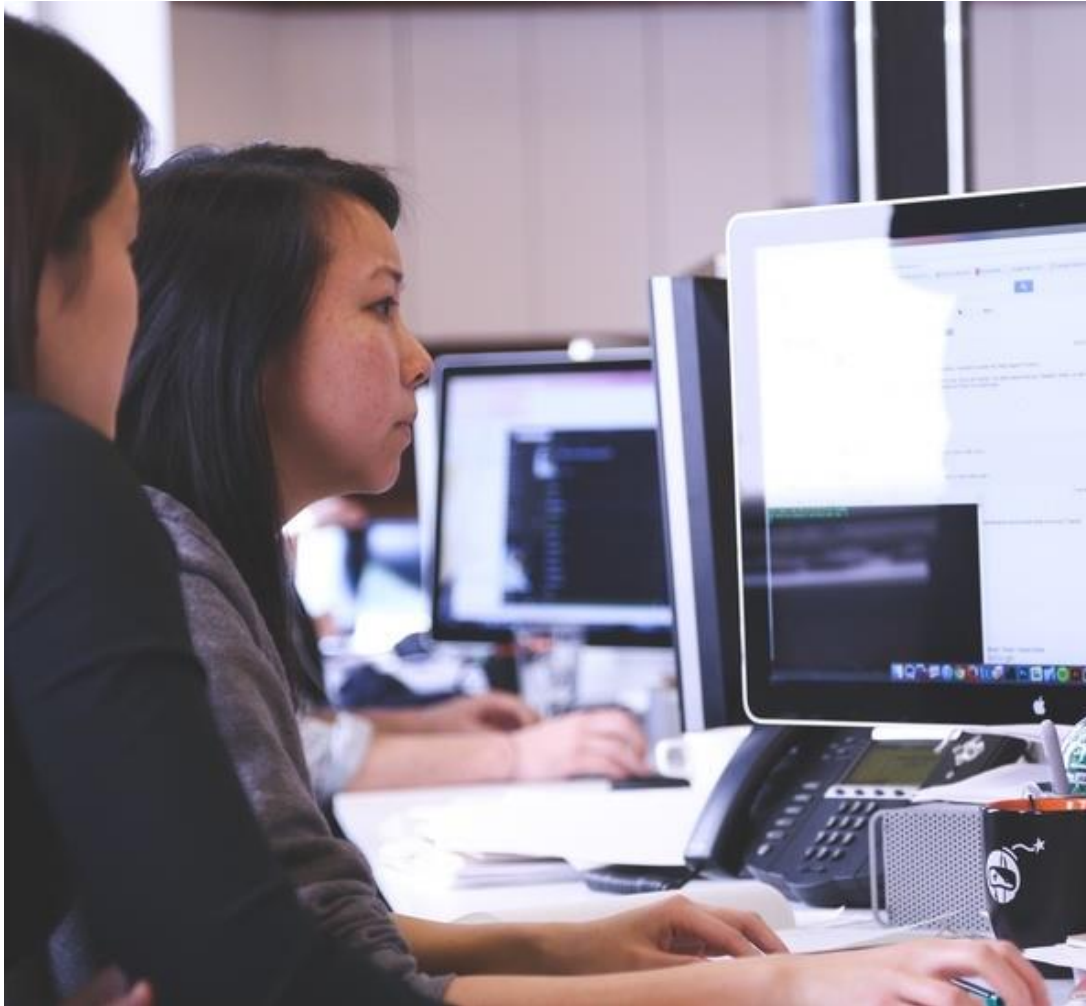


Gönnen Sie sich etwas [Mehr](#)



Who will generate more profit in future?

Developers of individual software or platform vendors?



or



**How mature
is the software industry?**

How mature is the software industry

A comparison between the automotive and software sector

Custom
Software
development

Packaged
standard
software

Software
product lines
(purchased)

Software
product lines
(rented)

SaaS / Cloud
(pay per use)

Workshop

Mass production

Product platforms

Rental/Fleet

Mobility



...

Einfach losfahren
und wieder abstellen



**What have Uber, Amazon,
Salesforce & Co. in
common?**

What have Uber, Amazon, Salesforce & Co. in common?

Products/services serving serving real customer needs

Superior *software platform*

Marketplace with low transaction costs

Ecosystem with multiple *players* and *business models*

Global scale through the internet





What should we do to become rich and beautiful?

Agenda

Business Models in Software Ecosystems

- Introduction
 - Software Ecosystems
 - Software platforms
 - Human factors
 - Marketplaces
 - Business Models
 - Bonus: The Atlassian Stack for software teams
 - Closure
-
- Cases included: Atlassian + Communardo



Cases in this lecture



- Offering: Software vendor of collaboration and software development tools
- Founded: 2002 (Sydney, Australia)
- Offices: Sydney, San Francisco, Amsterdam, Gdansk, Bangalore, Yokohama, etc.
- Revenue: >800 M US \$
- Growth: ~ 40+% p.a.
- Staff: > 2.500
- Customers: > 125.000



- Offering: Enterprise communication and collaboration solution provider
- Founded: 2001 (Dresden)
- Offices: Dresden, Bonn, Heilbronn, Dornbirn, Tirana
- Revenue: ~ 25 M US \$
- Growth: ~ 15-25% p.a.
- Staff: ~ 160
- Customers: > 1.000



Software ecosystems: what are the ingredients?

Software ecosystems

Definition

- **In nature:** “An ecosystem is a natural system consisting of all plants, animals and microorganisms (biotic factors) in an area functioning together with all the non-living physical (abiotic) factors of the environment”¹ (Christopherson 1997)
- **In general use:** „a complex network or interconnected system”² (Oxford Diction.)
- **Software ecosystem:** „a set of businesses functioning as a unit and interacting with a shared market for software and services, together with relationships among them. These relationships are frequently underpinned by a common technological platform and operate through the exchange of information, resources, and artifacts.”³ (Messerschmidt, 2003)

1) Christopherson, R.W. 1997. Geosystems: An Introduction to Physical Geography, 3rd, Upper Saddle River, NJ, USA: Prentice Hall Inc., ISBN 0-13-505314-5.

2) <http://www.oxforddictionaries.com/definition/english/ecosystem>

3) David G. Messerschmitt and Clemens Szyperski (2003). *Software Ecosystem: Understanding an Indispensable Technology and Industry*. Cambridge, MA, USA: MIT Press. [ISBN 0-262-13432-2](#)

Software ecosystems

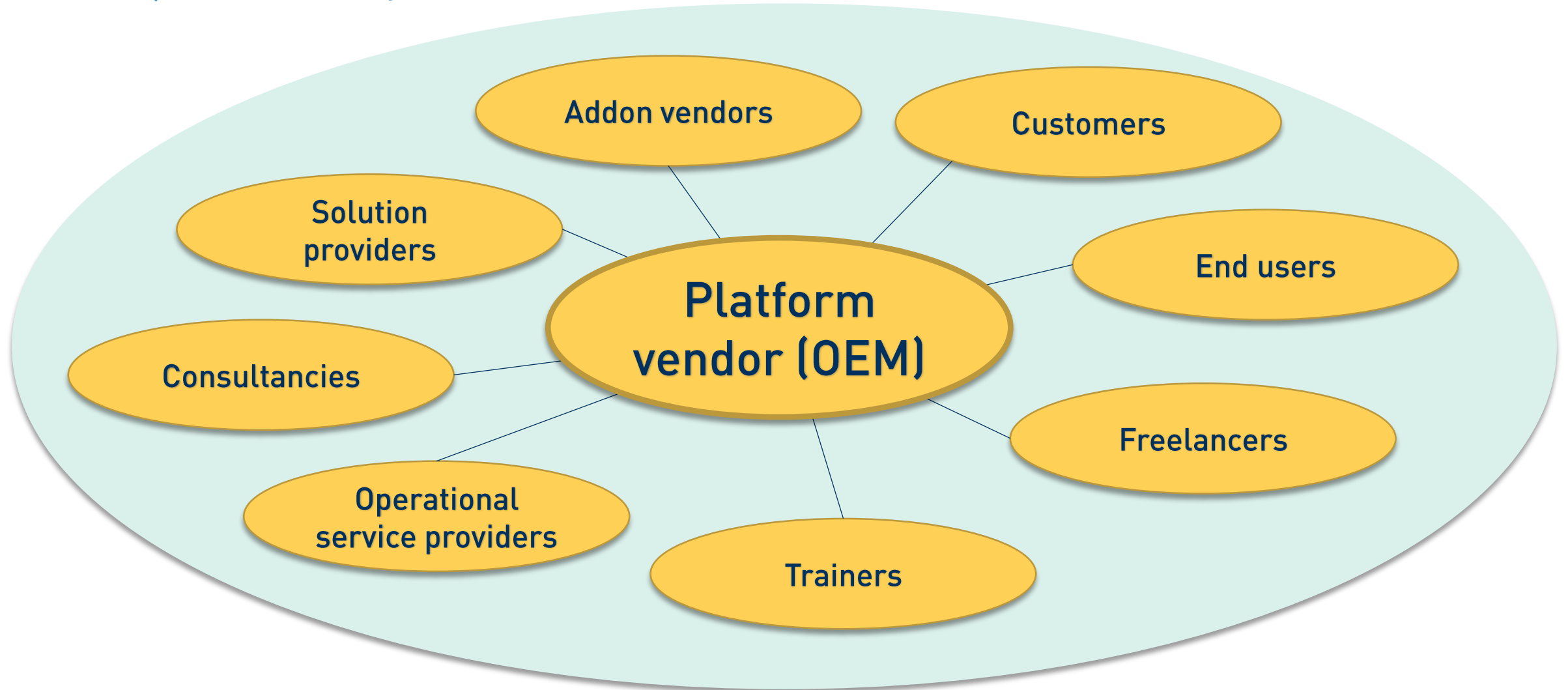
Examples



tbc.

Software ecosystems

Interdependent Players

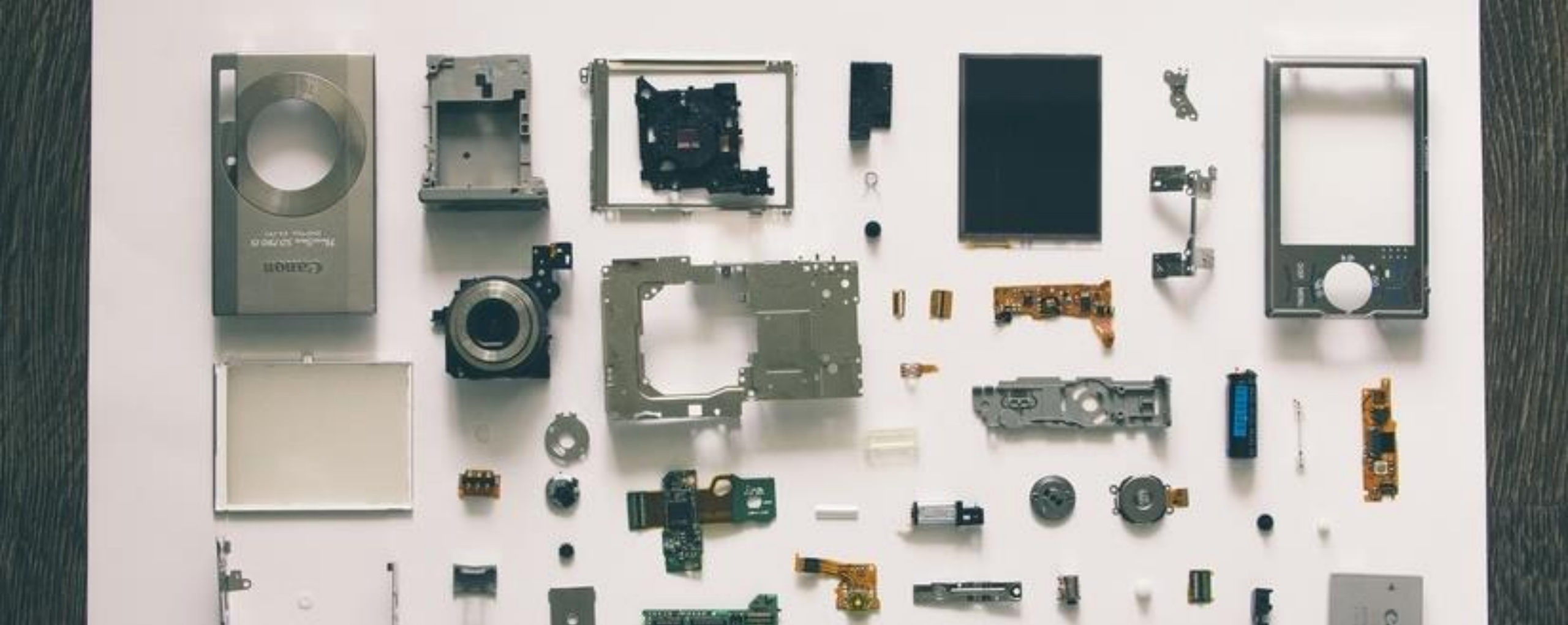


Agenda

Business Models in Software Ecosystems

- Introduction
 - Software Ecosystems
 - **Software platforms**
 - Human factors
 - Marketplaces
 - Business Models
 - Closure
-
- Cases included: Atlassian Inc. + Communardo Software GmbH





Platforms: what makes them ready for ecosystems?

Software platforms for ecosystems

What do they need?

Products/services serving real customer needs

Multiple, scalable use cases

Extensibility via rich interfaces

Open connectivity through APIs

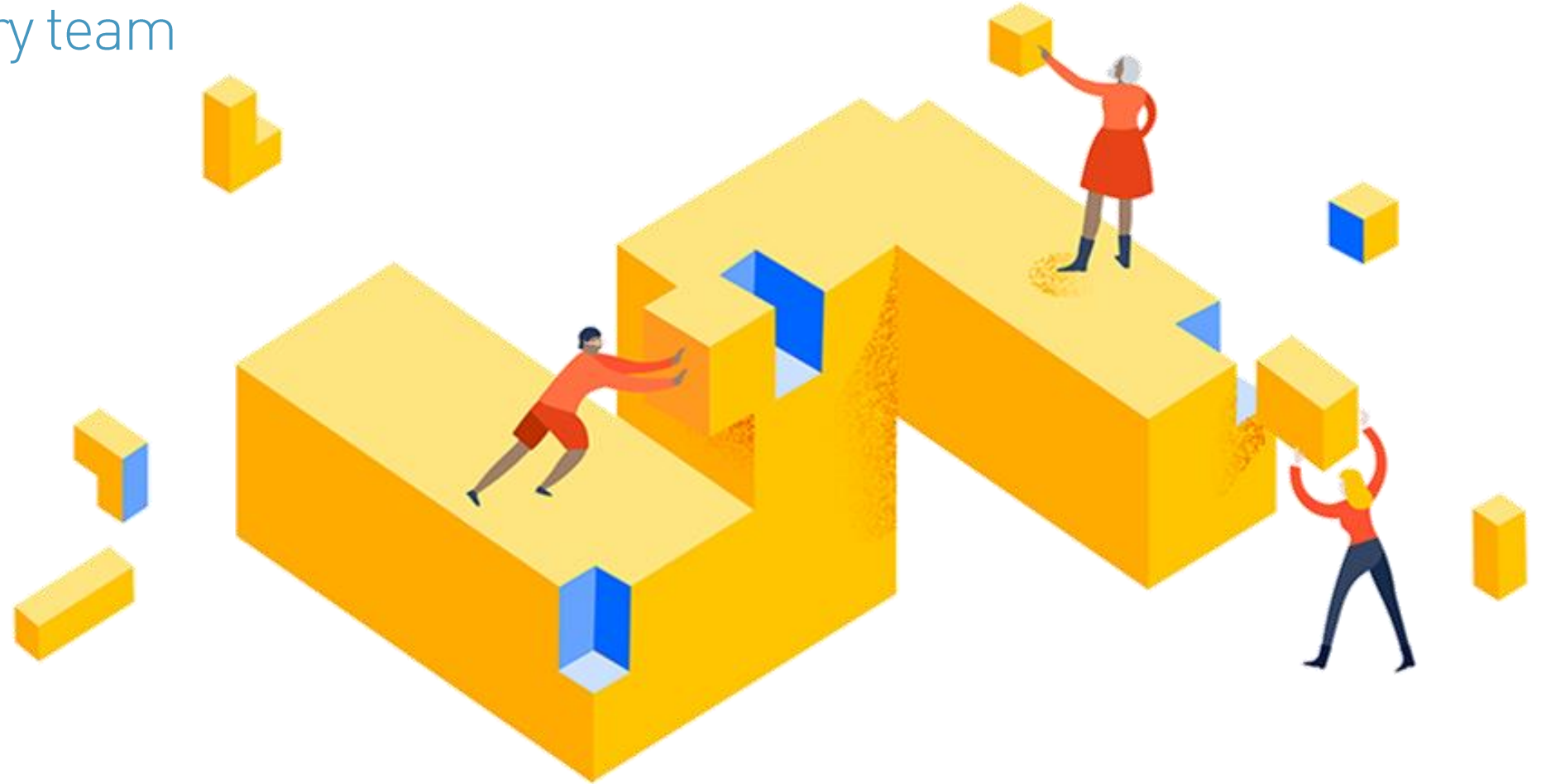
Continuous improvement

Support



Case Study: Atlassian Inc.







Software for every team



„Unleash the potential of every team“

Case Study: Atlassian Inc.

Software for every team

Software	IT	Support	Marketing	HR	Legal	Finance
TRACK & PLAN  JIRA	✓	✓	✓	✓	✓	✓
CREATE & COLLABORATE  Confluence	✓	✓	✓	✓	✓	✓
CHAT  HipChat	✓	✓	✓	✓	✓	✓
CODE & HOST  Bitbucket	TRACK & PLAN  JIRA Service Desk		✓	✓	✓	✓
ADD-ONS  Atlassian Marketplace		✓	✓	✓	✓	✓

* discontinued

Image source: Atlassian

Case Study: Atlassian Inc.

Open Software: Connectivity and extensibility

- Source code available for all Atlassian software
- APIs available for all software products
- Plugin interfaces for all software products

enables partner business



Image source: blogs.atlassian.com

Case Study: Atlassian Inc.

Continuous improvement & support

The screenshot shows a JIRA issue page with the following details:

- Issue Title:** Users are duplicated in the People Directory, shares, mentions, and have two USERINFO records in the database
- Status:** TECHNICAL REVIEW
- Type:** Bug
- Priority:** Critical
- Resolution:** Unresolved
- Assignee:** Hieu Ta [Atlassian]
- Reporter:** Denise Unterwurzacher [Atlassian]
- Created:** 22/Jul/2013 6:45 AM
- Updated:** 2 days ago
- Last commented:** 6 weeks, 4 days ago

Description:

Symptoms

- Users appear twice in the People Directory, in shares, and mentions
- Users have two USERINFO records with no 'prevver' value (ie two current records), eg:

```
select * from content where contenttype like 'USERINFO' and prevver is null;
```

USERINFO records that do **not** have an entry in prevver are the currently active records. This is a little counter-intuitive given the name of the field, however older records that are no longer active contain the id of the superseding record in prevver. If prevver is null, the record is considered active.

Steps to Reproduce

This may not be the only way to have this happen, but doing the following sequence will cause this to happen:

- Create a user in an LDAP server, which you want to test with
- Set up the LDAP server in Confluence
- Synchronise

- Issue reporting
- Feature request
- Issue Voting
- Transparent processing

Image source: jira.atlassian.com



Human factors: is this all just about technology? No!

Case Study: Atlassian Inc.

Company Mission: „Unleash the potential in every team“



Case Study: Atlassian Inc.

Atlassian Values



Open company, no
bullshit



Play, as a team



Build with heart
and balance



Don't #@!% the
customer

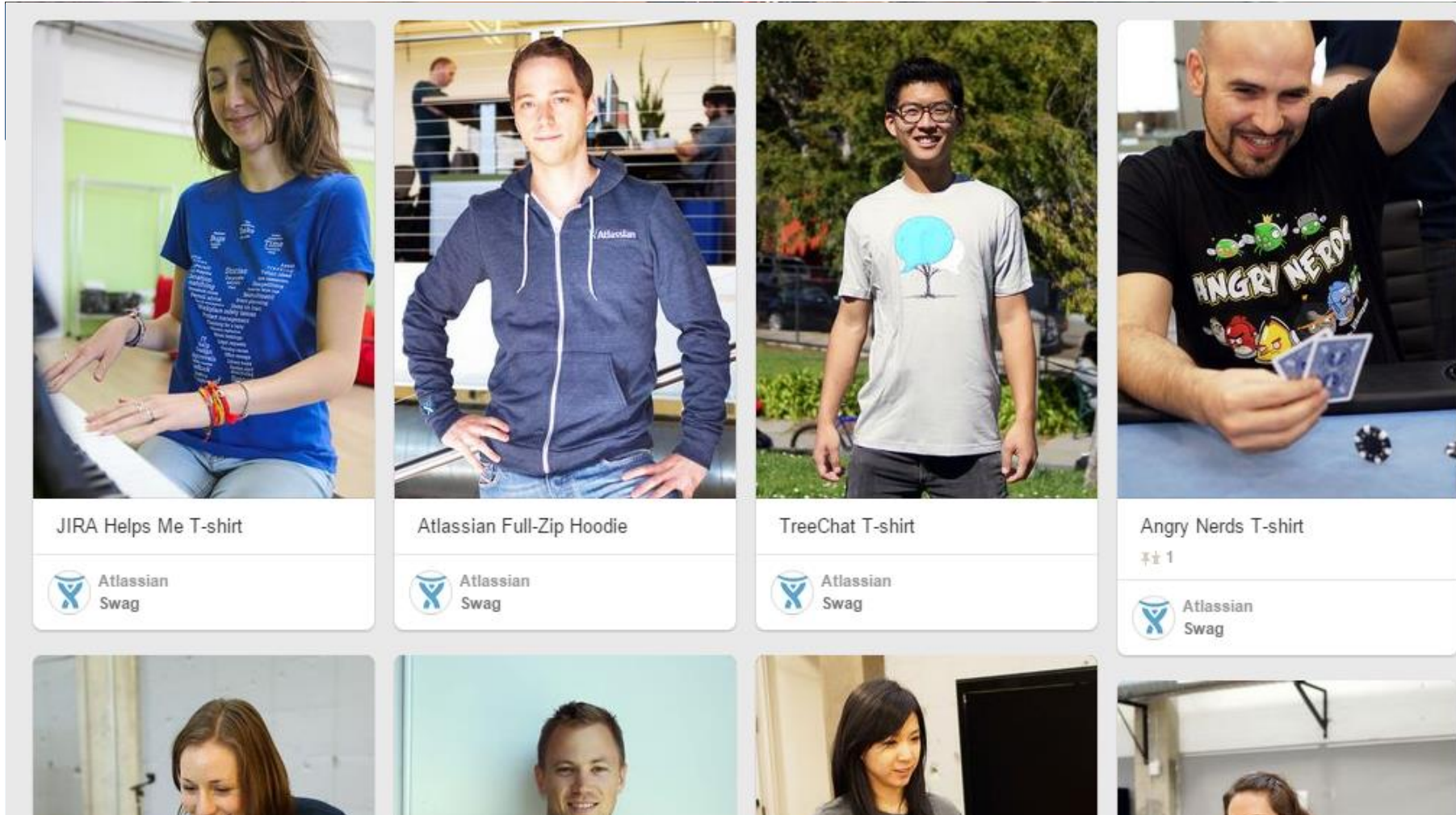


Be the change you
seek

Source: <http://blogs.atlassian.com/2015/06/great-place-millennials/>

Case Study: Atlassian Inc.

Community management: Events, Campaigns, Social Media



- „Open Company“
- Atlassian Summit
- AtlasCamp
- Usergroups
- Partner Events (CCD)
- Blogs
- Social Media
- T-Shirts
- Etc.



Marketplace: what it takes to (really) sell.

Platform marketplaces

What it takes to really sell

Transparent offering of value add products & services

Integration of marketplace into the products

Self-service transactions with minimal effort

Adequate pricing with low entry barrier

Accountability and trust

Secure and automated payment



Case Study: Atlassian Inc.

Atlassian marketplace

ORDER QUOTE Shop Pay Quote Renew Upgrade Cart

Karma for Confluence

Server (you host) Cloud (we host)

CHOOSE – Choose a license to attach to

- Confluence (Server) 500 users: Commercial License** \$1,200
SEN-2049542 / Communardo Software GmbH / Expires 03 Jul 2016
- Confluence (Server) 100 users: Commercial License** \$400
SEN-370077 / Communardo Software GmbH / Expires 19 Mar 2014
- Confluence (Server) 10 users: Starter License** \$10
SEN-2039665 / Communardo Software GmbH / Expires 10 Sep 2011

MAINTENANCE PERIOD ⓘ

12 months Included ▾

SEARCH – Look up a license by SEN ▾

MANUAL – Already know your user tier? ▾

Add to Cart

SUBTOTAL (USD)

\$1,200

Any applicable discounts will be reflected in the cart review

- Addon search
- Product listings
- User reviews
- Self-service
- Pricing with low entry barrier
- Online-shop incl. Payment etc.

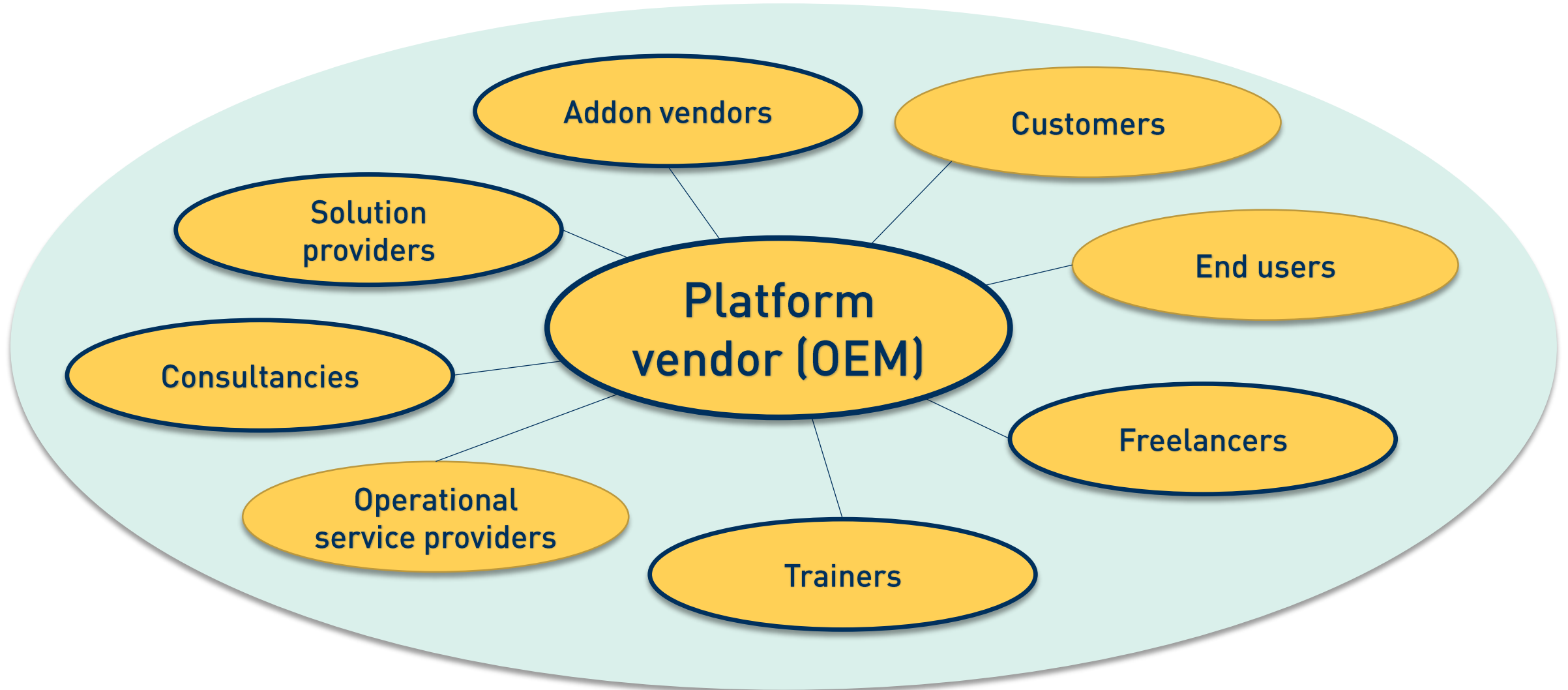
JIRA Agile Labs defense agencies, game makers, and IT companies from small to large around the globe. Make testing & requirements management fun again! Integrate your IT organization end-to-end seamlessly while providing reporting and auditing from within JIRA or Confluence for your entire organization automatical



Business models: opportunities to grow and prosper.

Business models in Software ecosystems

Overview



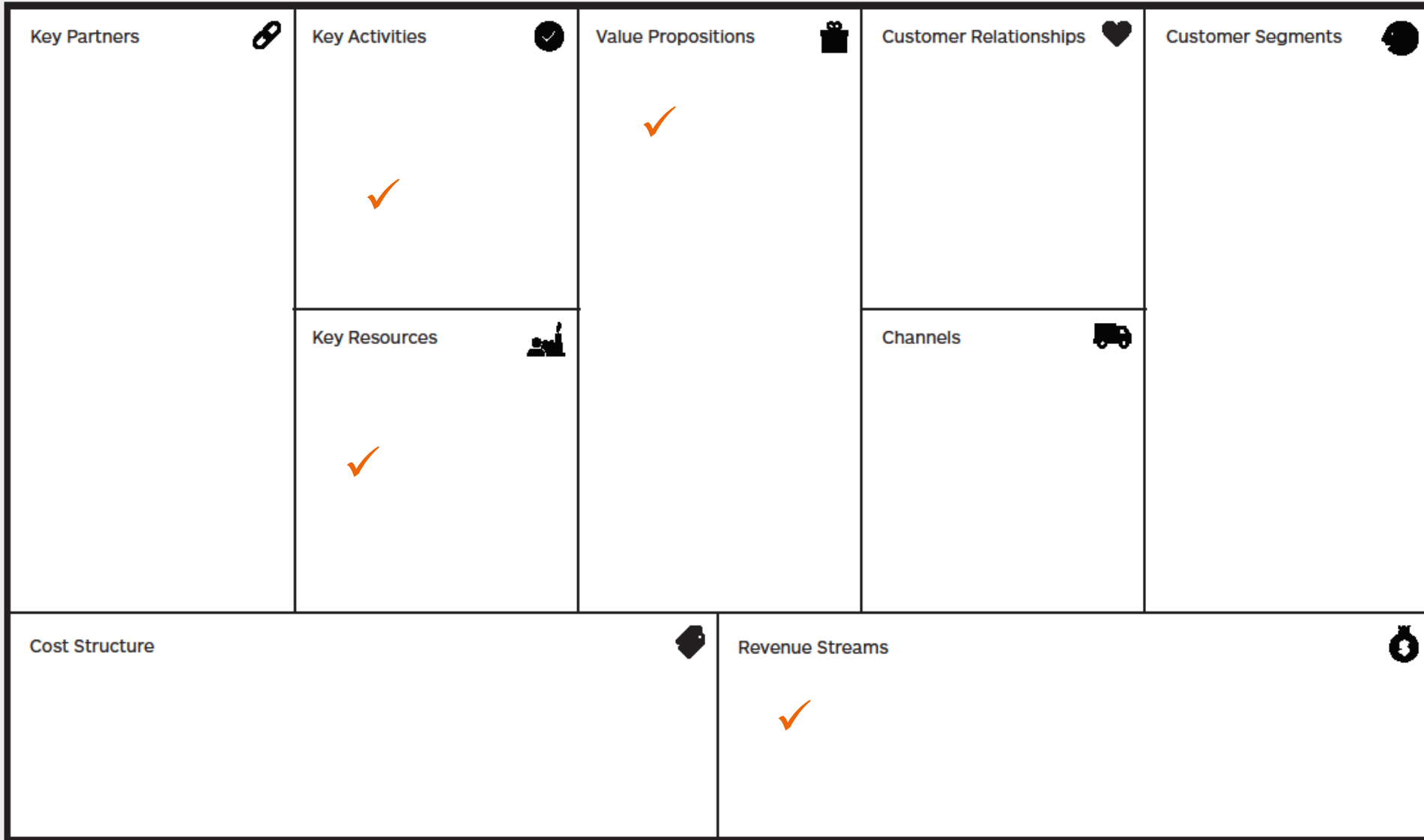
The Business Model Canvas


Designed for:

Designed by:

Date:

Version:



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DESIGNED BY: Strategyzer AG
The makers of Business Model Generation and Strategyzer

 **Strategyzer**
strategyzer.com

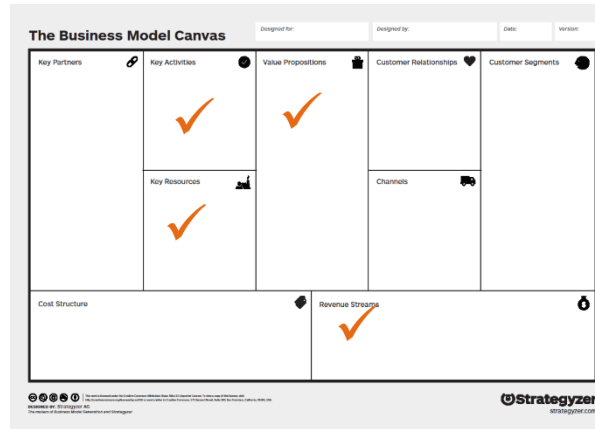
Source:
http://www.businessmodelgeneration.com/downloads/business_model_canvas_poster.pdf

Business models: Platform vendor

Case: Atlassian Inc.

Key activities

- Software development (platform, products, cloud services, marketplace)
- Online marketing
- Community management



Value proposition

- Delivering software to unleash the potential in every team

Key resources

- Superior software engineers
- Community feedback
- Marketing experts
- Funding (from revenue or VC)



Revenue stream

- License sales
 - New2new
 - New2existing
 - Renewals
 - Marketplace royalties

Business models: Platform vendor

Case: Atlassian Inc.



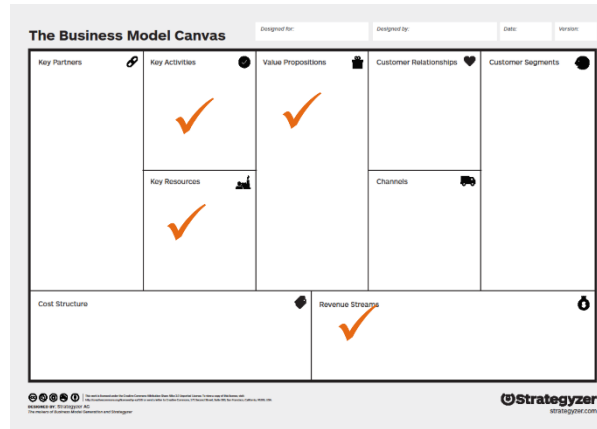
- 2500+ team
- 125.000+ clients
- \$ 880 M+ revenue
- \$ 5.9 Bn+ IPO
- Nasdaq TEAM

Business models: Solution provider

Case: Communardo

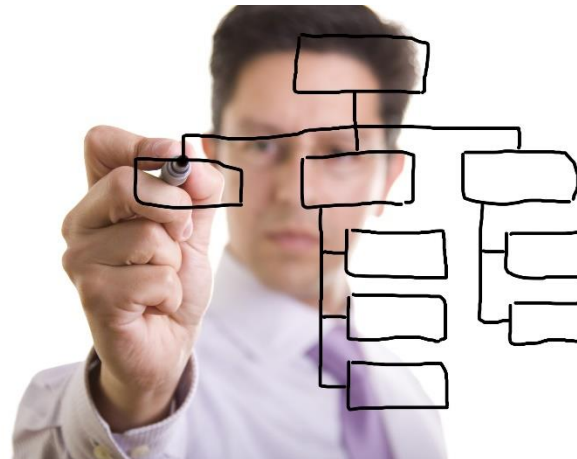
Key activities

- Solution development
- Sales + Marketing (online, direct)
- Customer projects



Key resources

- Consultants (subject matter experts)
- Software engineers
- Knowledge derived from client projects
- Sales professionals



Value proposition

- Delivering superior collaboration solutions based on leading technology platforms
- Making clients more agile and efficient

Revenue stream

- Solutions licenses
- Consulting revenue (T&M, hourly rate x billable hours)
- License sales royalties

Business models: Solution provider

Case: Communardo

Social Intranet

Collaboration Workplace

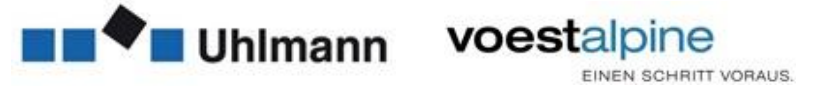
Enterprise Networking

Business Portals

Knowledge Management

Agile Workflows

Unified Communication

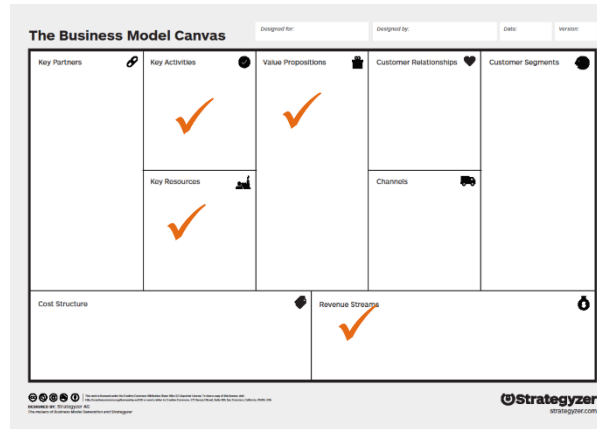


Business models: Add-on vendor

Case: Communardo

Key activities

- Software development of add-on solutions
- Marketing to end users and partners

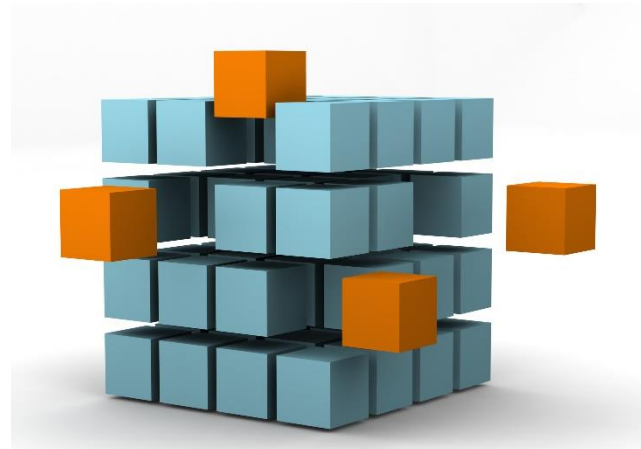


Value proposition

- Profoundly enhancing platform functionality for specialized (or general) use cases

Key resources

- Software developers
- Subject matter experts
- End user and partner feedback
- Marketing specialists




Revenue stream


- License sales
- renewals

Business models: Add-on vendor


Case: Communardo. Selling 10+ addons to 1000+ clients in 60+ countries

**Accessibility for Confluence** ★★★★
for Confluence Server 3
Supported Data Center Paid via Vendor


The Accessibility Add-on for Confluence creates a barrier-free work environment. Texts can be read out loud, the visual display offers greater flexibility, and you can use Confluence entirely by keyboard.

**CUTE for Confluence** ★★★★
for Confluence Server 88
Atlassian Verified Supported Paid via Atlassian


The CUTE Way of Theming for Confluence and JIRA! Design and expand your UI, Do-it-yourself and stay safe after updating!

**CUTE for JIRA** ★★★★
for JIRA Server 185
Atlassian Verified Supported Paid via Atlassian


The CUTE Way of Theming for Confluence and JIRA! Design and expand your UI, Do-it-yourself and stay safe after updating!

**Categories for Bitbucket** ★★★★
for Bitbucket Server 166
Atlassian Verified Supported Data Center Paid via Atlassian


With Categories you can easily categorize your Bitbucket projects and repositories to obtain an overview in your lists grouped by category

**Connector for SharePoint Search** ★★★★
for Confluence Server 25
Atlassian Verified Supported Paid via Atlassian


Let SharePoint find all your valuable content from Confluence! - Connect Confluence to SharePoint Search - One consistent entry point - Find relevant Confluence elements - Include permissions for Active Directory users - Better. Together. Connected.

**C²-Connect - Business Card Plugin** ★★★★
for Confluence Server 2
Atlassian Verified Supported Paid via Atlassian


The plugin integrates the IBM Connections Business Card and profile pictures of IBM Connections users into Atlassian Confluence.

**IT System and Application Catalogue** ★★★★
for Confluence Server 180
Atlassian Verified Supported Paid via Atlassian


This Space Blueprint allows you to enter and manage your servers and application in a fast and well structured way with forms and reports.

**Issue Rating for JIRA** ★★★★
for JIRA Server 10
Atlassian Verified Supported Paid via Atlassian


The add-on allows you to vote for tickets and ideas in JIRA. Tickets can be filtered and searched by number, average or own votes. That way ideas don't get lost and an easy evaluation is possible.

**Karma for Confluence** ★★★★
for Confluence Server 195
Atlassian Verified Supported Paid via Atlassian


The most popular Add-on to encourage users to collaborate, to generate content with delight and to boost the adoption through Gamification! Compete with colleagues for karma, badges and medals.

**Metadata for Confluence** ★★★★
for Confluence Server 19
Atlassian Verified Supported Paid via Atlassian


Structure your wiki content with metadata for Confluence - Add consistent metadata to pages - Configure personalized overviews

**RemindMe** ★★★★
for JIRA Server 306
Atlassian Verified Supported Paid via Atlassian


With RemindMe for JIRA you will never miss the deadline for your important issues again. RemindMe helps you easily to create individual or global reminders for your issues.

**SubSpace Plugin** ★★★★
for Confluence Server 2,139
Unsupported Free


The Add-On provides functionality to organize spaces hierarchically in spaces and sub-spaces. The plugin includes macros to display the space hierarchy in the dashboard or navigation menus.

**User Profiles for Confluence** ★★★★
for Confluence Server 518
Atlassian Verified Supported Paid via Atlassian

Personalize, Optimize, Search, Synchronize and Integrate: Endless possibilities with user profiles

**User Profiles for JIRA** ★★★★
for JIRA Server 86
Atlassian Verified Supported Paid via Atlassian

The User Profiles for JIRA allows you to enrich the user profiles with additional information and makes it more personal. Profiles can be kept up-to-date by synchronizing with LDAP/AD.

**SharePoint Connector for Confluence** ★★★★
by Communardo Software GmbH Atlassian Verified 418
Supported Data Center Paid via Atlassian

SharePoint Connector for Confluence lets you display SharePoint content within a Confluence page. Additionally MS Office documents can be launched and edited directly from Confluence.

Business models: Add-on vendor

Case: Communardo. Selling 15+ addons to 1800+ clients in 60+ countries

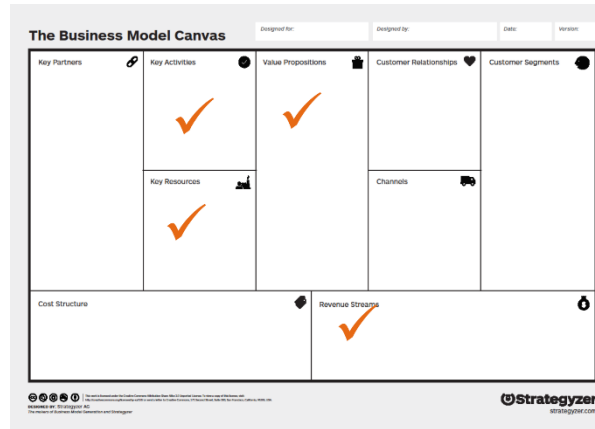


Business models: Consultant

Case: Communardo

Key activities

- Advising clients regarding the use of the platform, incl. Product selection, project management, use cases, introduction & change etc.



Value proposition

- Ensuring the optimal use of software solutions to achieve the clients business objectives

Key resources

- Business and IT consultants
- Subject matter experts
- Project managers



Revenue stream

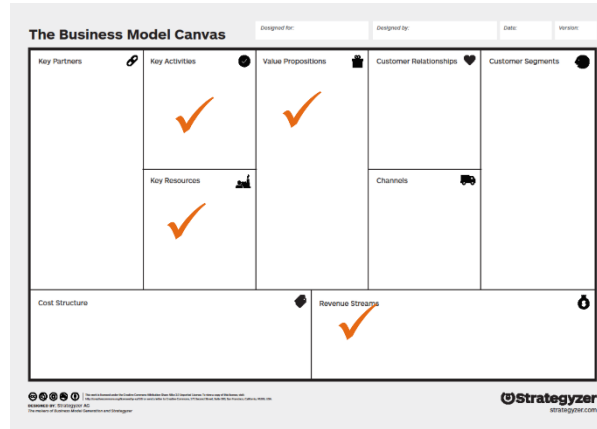
- Time & material:
billable hours x hourly rate

Business models: Training provider

Case: Communardo Academy

Key activities

- On-site training (classroom)
- Online-training
- eLearning
- Coaching
- Train-the-trainer



Value proposition

- Enabling end users (and organisations) to efficiently use software solutions for their purposes

Key resources

- Skilled trainers / coaches
- Training resources



Revenue stream

- Flat fees
- Time & Material billable days x daily rate

Business models: Training provider

Case: Communardo Academy

- We are trainers with consulting background.
- We are training real-world use cases.
- We are training work approaches – not just features.
- We love to share our knowledge.
- We are open for your requirements.

Our training formats:

Inhouse
Open course
LiveTraining
Webinars
E-Learnings

Knowledge Bases mit Metadata for Confluence

10
SEP

10. Sep. 2015
10:00 - 10:45
online

Webinar
anmelden

Wir möchten Ihnen in diesem Webinar aufzeigen, wie Sie Knowledge Bases in Confluence einfach aktuell halten und individuell nutzbar machen können.

Wiki mit Confluence – an einem Tag

24
SEP

24. Sep. 2015
09:00 - 16:30
Stuttgart

Seminar
anmelden

Die Confluence-Schulung richtet sich an alle Mitarbeiter, die aktiv im Wiki tätig werden möchten.

Arbeit mit Confluence Teil1

13
OKT

13. Okt. 2015
09:30 - 11:30
online

Live-Training
anmelden

Die Schulung geht auf die geänderte, offene Arbeitsweise eines Wikis ein und zeigt die Vorteile von Wiki-Arbeit für die Verbesserung der Zusammenarbeit.

... for:

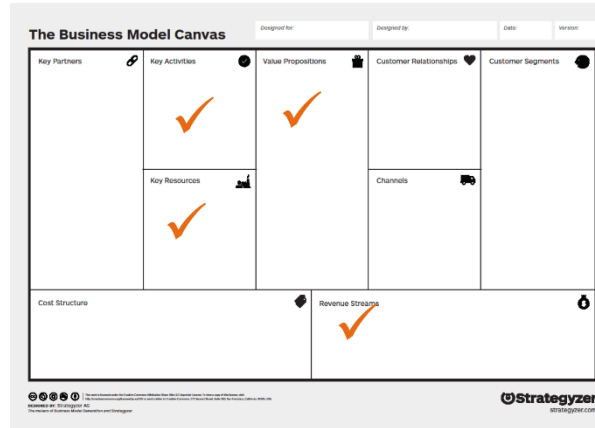
End users
Lead users / coaches
Project leaders
System owners
developers

Business models: Freelancer

Case: N.N.

Key activities

- Supporting client companies with relevant services, e.g. administration, development, maintenance, testing

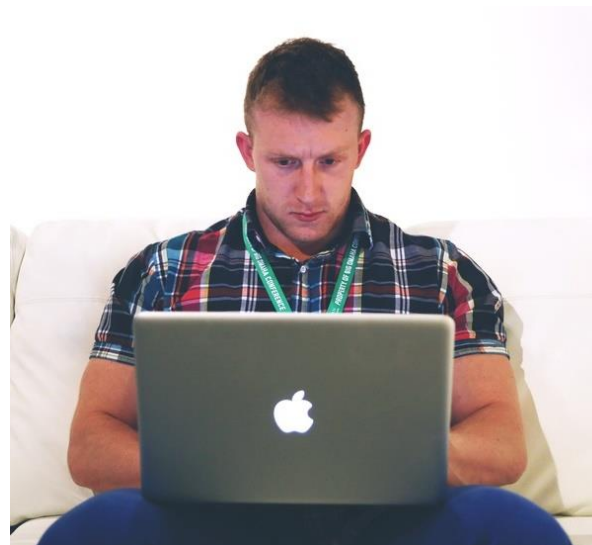


Value proposition

- Superior competence at reasonable price

Key resources

- Own personal capacity
- Access to knowledge bases
- Personal networks

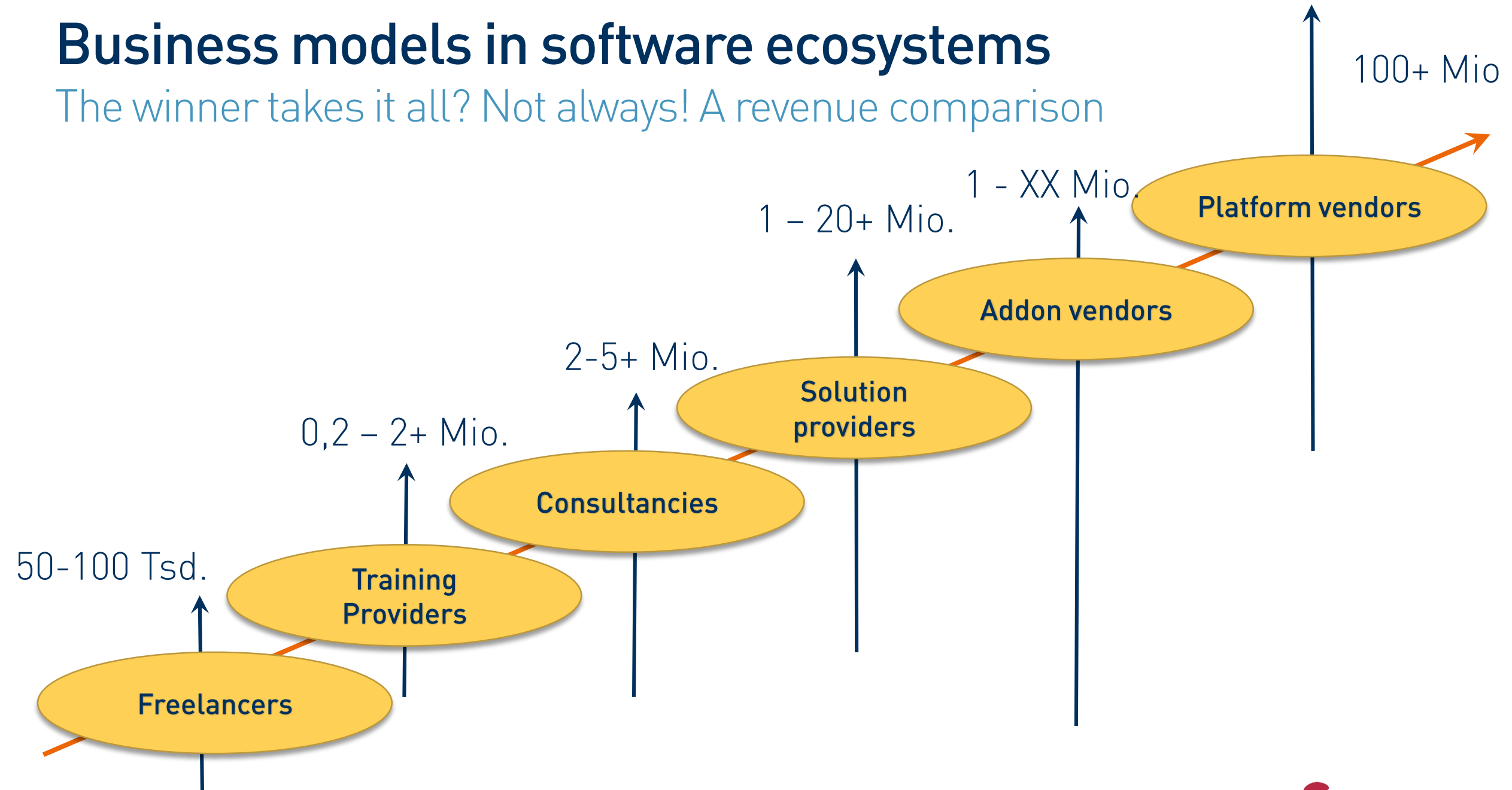


Revenue stream

- Time & material billable hours x hourly rate
- Limited

Business models in software ecosystems

The winner takes it all? Not always! A revenue comparison





Bonus: The **ATLASSIAN** stack for software teams

Products for Software Teams

Used by the Who-is-who throughout the world

FINANCE



MEDIA



AUTOMOTIVE



CONSUMER



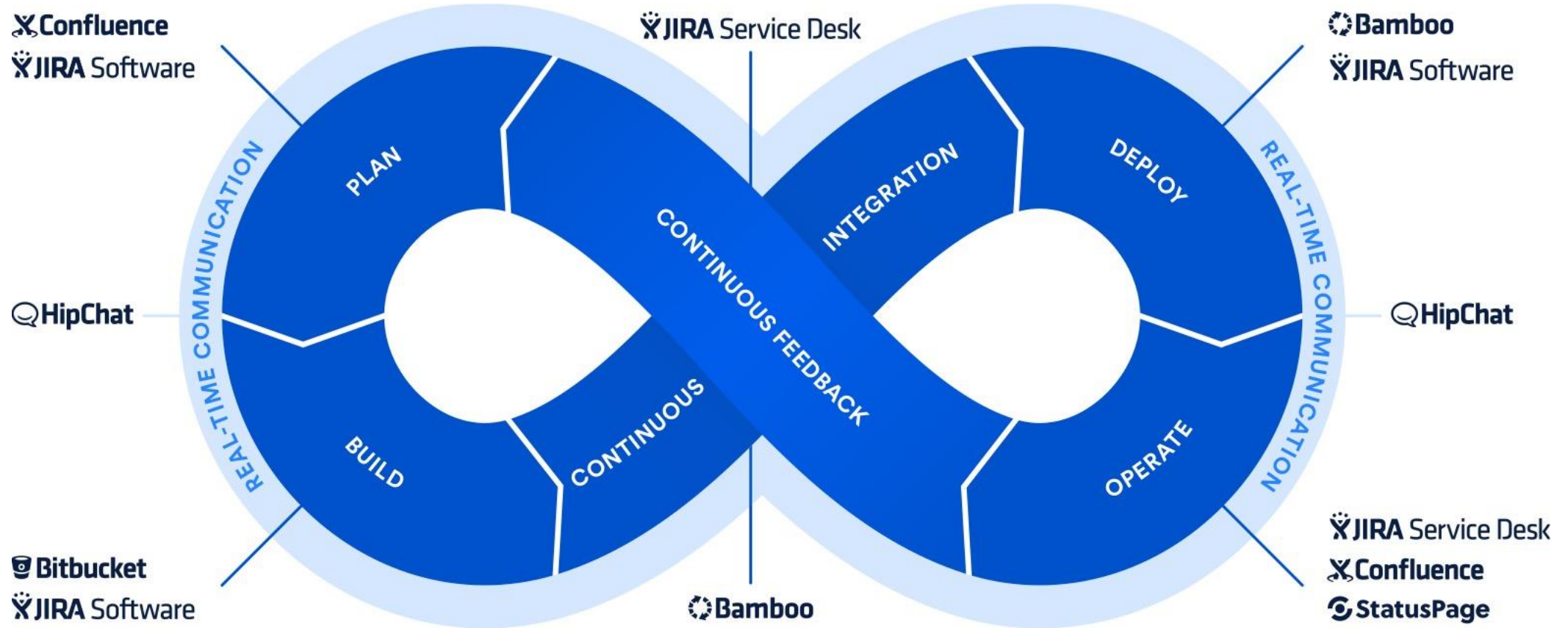
TECHNOLOGY

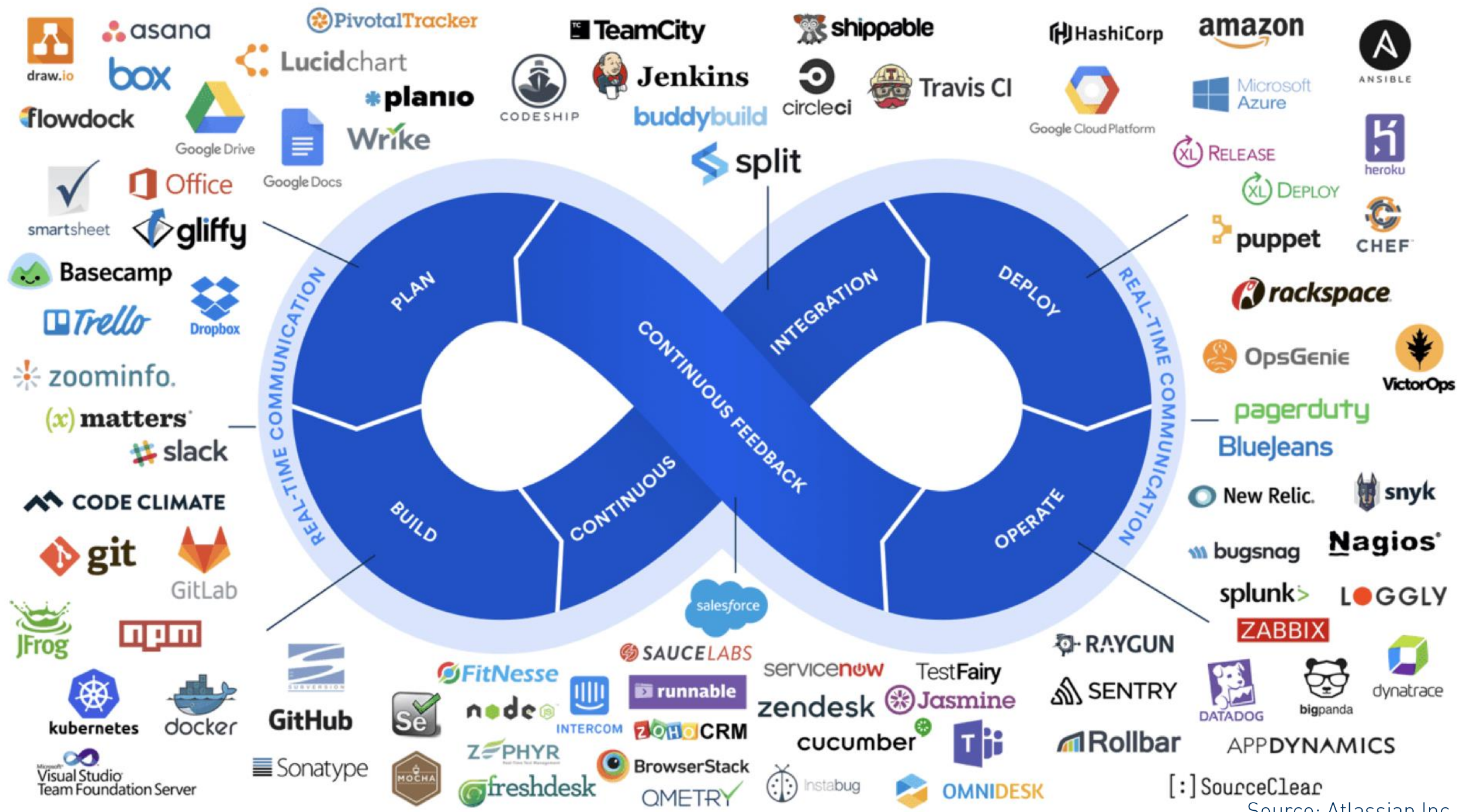


HEALTHCARE

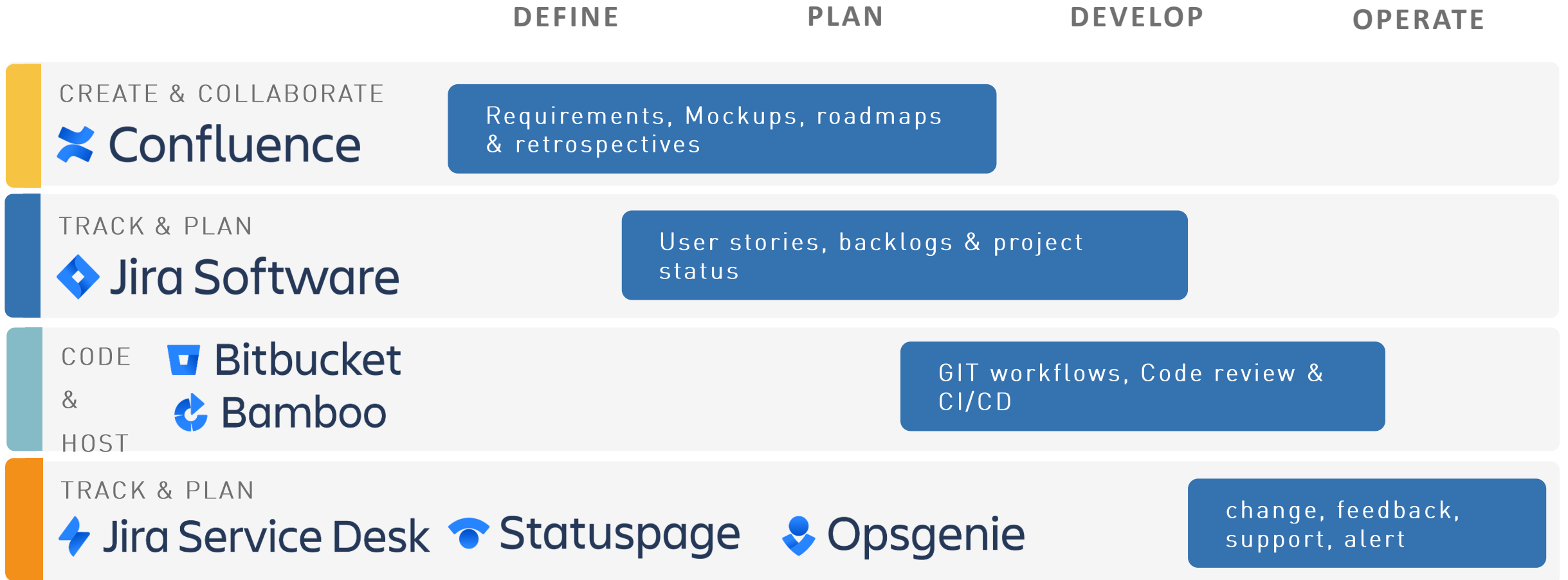


The Atlassian Stack for Software Teams





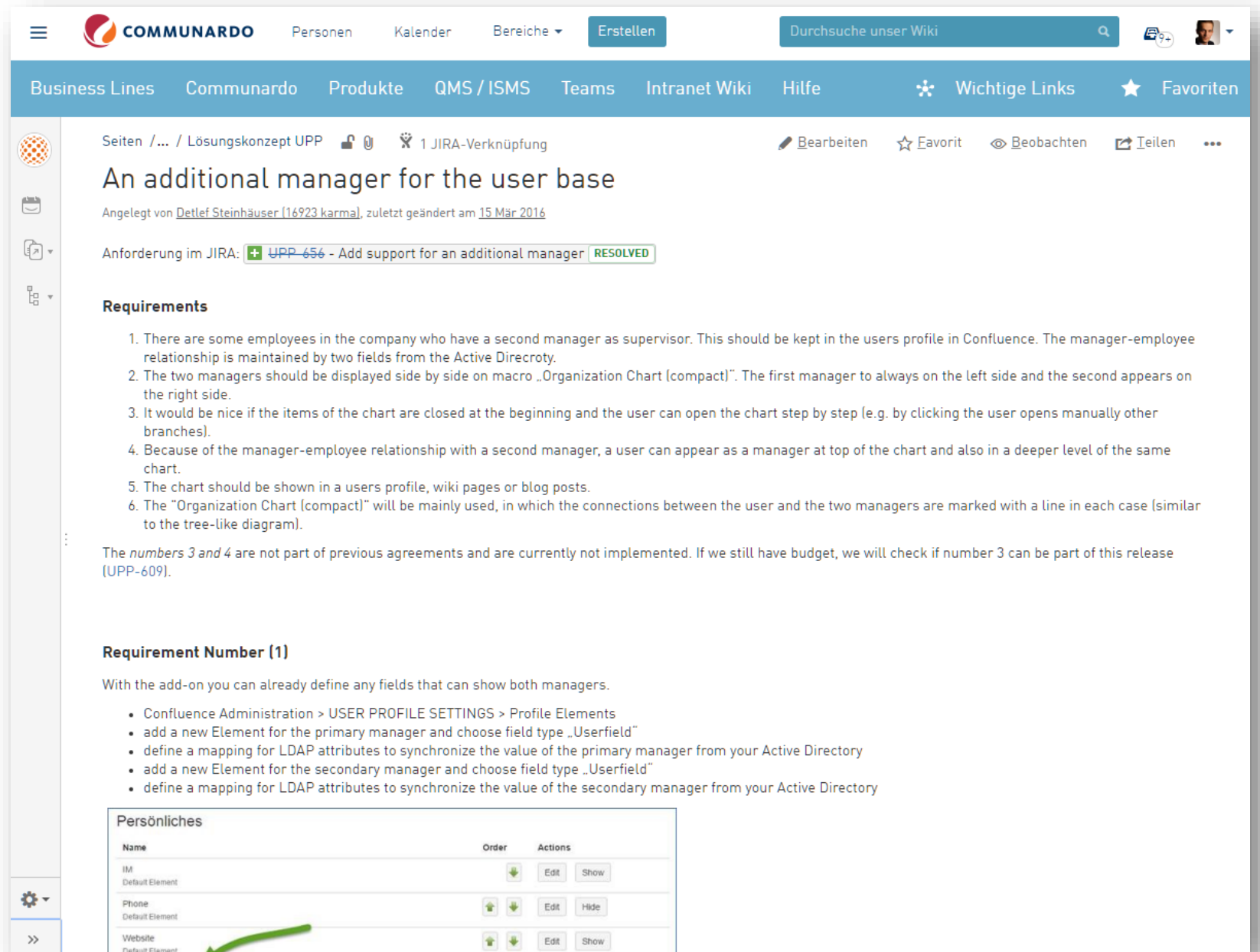
Atlassian Stack for Software Teams



Define: Requirements Management

Confluence

World-class
enterprise wiki
platform used for
specifications,
documentation and
internal collaboration.



The screenshot shows a Confluence page within the Communardo Intranet Wiki. The page title is "An additional manager for the user base". It is categorized under "Business Lines" and "Communardo". The page content includes a JIRA requirement: "Anforderung im JIRA: + UPP-656 - Add support for an additional manager RESOLVED".

Requirements

1. There are some employees in the company who have a second manager as supervisor. This should be kept in the users profile in Confluence. The manager-employee relationship is maintained by two fields from the Active Directory.
2. The two managers should be displayed side by side on macro „Organization Chart (compact)“. The first manager to always on the left side and the second appears on the right side.
3. It would be nice if the items of the chart are closed at the beginning and the user can open the chart step by step (e.g. by clicking the user opens manually other branches).
4. Because of the manager-employee relationship with a second manager, a user can appear as a manager at top of the chart and also in a deeper level of the same chart.
5. The chart should be shown in a users profile, wiki pages or blog posts.
6. The "Organization Chart (compact)" will be mainly used, in which the connections between the user and the two managers are marked with a line in each case (similar to the tree-like diagram).

The numbers 3 and 4 are not part of previous agreements and are currently not implemented. If we still have budget, we will check if number 3 can be part of this release (UPP-609).

Requirement Number (1)

With the add-on you can already define any fields that can show both managers.

- Confluence Administration > USER PROFILE SETTINGS > Profile Elements
- add a new Element for the primary manager and choose field type „Userfield“
- define a mapping for LDAP attributes to synchronize the value of the primary manager from your Active Directory
- add a new Element for the secondary manager and choose field type „Userfield“
- define a mapping for LDAP attributes to synchronize the value of the secondary manager from your Active Directory

Persönliches		
Name	Order	Actions
IM Default Element		Edit Show
Phone Default Element		Edit Hide
Website Default Element		Edit Show

Plan: Agile Planning



JIRA Dashboards Projects Issues Boards Create Search

Teams in Space Scrum: Teams in Space

Backlog

QUICK FILTERS: Product UI Server Only My Issues Recently Updated

Backlog

Active sprints

Releases

Reports

Issues

Components

PROJECT SHORTCUTS

Mercury Team HipChat Room

Development Guide

Spotify Team Play List

TIS Roadmap

TIS Team Org Structure

Add link

Give feedback

Project administration

Backlog

Board

Start Sprint

Linked pages

EPICS

All issues

SeeSpaceEZ Plus

Large Team Support

Space Travel Partners

Summer Saturn Sale

Afterburner Plus

Local Mars Office

Hyper-speed shuttles

New launch platforms

Delicious Space Nutrition

Spacetainment

Microgravity Delight

Onboard workout options (OWO)

Planet Taxi Device

▼ **Sprint 7** 12 issues

TIS-37 When requesting user details the service should return prior trip info 2.1 SeeSpaceEZ Plus 2

TIS-12 Create 90 day plans for all departments in the Mars Office 2.1 Local Mars Office 9

TIS-15 Establish a catering vendor to provide meal service 2.1 Local Mars Office 4

TIS-16 Establish relationship with local office supplies company 2.1 Local Mars Office 4

TIS-26 Engage the Red Titan Hotel as a preferred provider 2.1 Space Travel Partners 3

TIS-33 Select key travel partners for the Saturn Summer Sizzle 2.2 Summer Saturn Sale 1

TIS-10 Bad JSON data coming back from hotel API 2.0 SeeSpaceEZ Plus 1

TIS-14 Integrate Mars Tax Code into payroll system on Earth 2.1 Local Mars Office 8

TIS-31 Create Teams in Space website copy for the Saturn Summer Sizzle 2.2 Summer Saturn Sale 2

TIS-11 Register with the Mars Ministry of Labor 2.1 Local Mars Office 3

TIS-13 Register with the Mars Ministry of Revenue 2.1 Local Mars Office 3

TIS-18 Enable Speedy SpaceCraft as the preferred individual transit provider 2.1 Space Travel Partners 5

+ Create issue

12 issues Estimate 44

Backlog 45 issues

Create Sprint

TIS-25 Engage Jupiter Express for outer solar system travel 3.0 Space Travel Partners 5

Plan: Agile Planning



JIRA Dashboards Projects Issues Boards Create Search

Teams in Space Scrum: Teams in Space

Backlog Active sprints Releases Reports Issues Components

PROJECT SHORTCUTS
Mercury Team HipChat Room
Development Guide
Spotify Team Playlist
TIS Roadmap
TIS Team Org Structure
Add link
Give feedback
Project administration

All sprints

Switch sprint

QUICK FILTERS: Product UI Server Only My Issues Recently Updated

15 To Do 3 In Progress Max 3 3 Code Review 6 Done

▼ TIS Developer Love 3 issues

- TIS-10 Bad JSON data coming back from hotel API (SeeSpaceEZ Plus)
- TIS-9 After 100,000 requests the SeeSpaceEZ server dies (SeeSpaceEZ Plus)
- TIS-8 Requesting available flights is now taking > 5 seconds (SeeSpaceEZ Plus)

▼ Everything Else 24 issues

- TIS-68 Homepage footer uses an inline style - should use a class (Large Team Support)
- TIS-20 Engage Saturn Shuttle Lines for group tours (Space Travel Partn... 3)
- TIS-18 Enable Speedy SpaceCraft as the preferred individual (Space Travel Partn... 5)
- TIS-15 Establish a catering vendor to provide meal service (Local Mars Office 4)
- TIS-42 Extend booking experience in UI to include multiple hotels (Large Team Support 9)
- TIS-49 Draft network plan for Mars Office (Local Mars Office 5)
- TIS-17 Engage Saturn's Rings Resort as a preferred provider (Space Travel Partn... 3)
- TIS-67 Developer Toolbox does not display by default (Large Team Support)
- TIS-52 Select Video Chat Networking provider for Mars Office (Local Mars Office 4)
- TIS-56 Add pointer to main css file to instruct users to create child themes (Large Team Support)
- TIS-45 Email non registered users to sign up with Teams In Space (Large Team Support 2)
- TIS-69 Add a String anonymizer to TextUtils (Large Team Support)
- TIS-23 Engage JetShuttle SpaceWays for short distance space travel (Space Travel Partn... 3)
- TIS-30 Create Saturn Summer Sizzle Logo (Summer Saturn Sale 2)

Teams in Space / TIS-67

Developer Toolbox does not display by default

Sub-Tasks

Create Sub-Task

Issue Key	Summary	Status	Actions
TIS-127	Check Java version	OPEN	✎ ✕

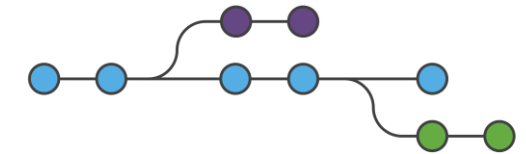
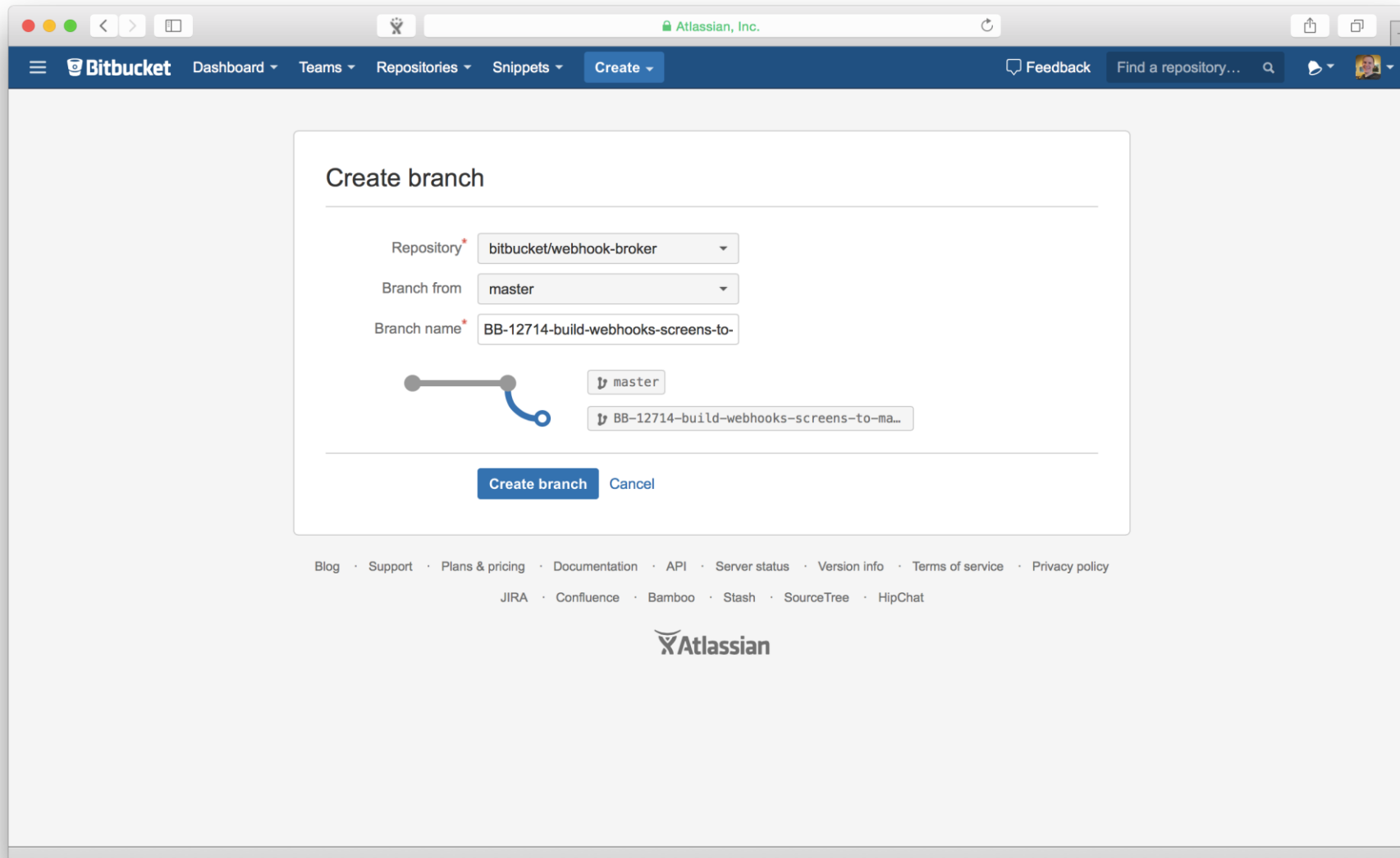
Development

- 1 branch Updated 17/May/14 7:32 AM
- 7 commits Latest 17/May/14 7:30 AM
- 1 pull request OPEN Updated 17/May/14 7:32 AM
- 3 builds Latest 16/May/14 2:31 PM

Deployed to Staging and Production

Create branch

Develop: Code Repository



Bitbucket is more than just Git code management. Bitbucket gives teams one place to plan projects, collaborate on code, test, and deploy.

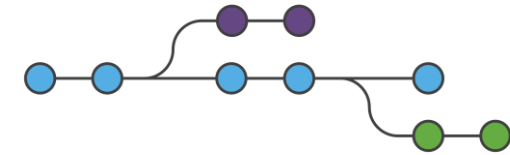
Example: branching

Develop: Code Repository



The screenshot shows the Bitbucket web interface for a repository named 'mfrauenholtz/BB-12714-build-out-mocks'. The page displays a commit history table with columns for Author, Commit, Message, and Date. The most recent commit is by Michael Fraue... with commit ID 5673ac8, merging a branch from another repository. Other commits include UI Form tests, script modifications, and CSS-related updates.

Author	Commit	Message	Date
Michael Fraue...	5673ac8	Merge branch 'mfrauenholtz/build-css' of bitbucket.org:bitbucket/webhook-broker into mfrauenholtz/build-css	2 hours ago
Michael Fraue...	1045c2a	AUI Form tests!!	2 hours ago
Mark Adams	b38b6fb	Modified the run_js_tests script to make sure a new image is always pulled down	3 hours ago
Michael Fraue...	b66cfc3	Better test setup	4 hours ago
Michael Fraue...	749d06c	File organization	5 hours ago
Michael Fraue...	a6fb2e8	Better components for React + AUI Forms	6 hours ago
Michael Fraue...	f7b5b8f	Messy WIP commit, but it works?	3 days ago
Michael Fraue...	062b070	Compress CSS output during build	4 days ago
Michael Fraue...	db3d618	Ignore static assets	4 days ago
Michael Fraue...	d617456	Do CSS	4 days ago
Michael Fraue...	53b0c03	Move 'connect/js' to 'connect/assets/' to include CSS	4 days ago
Michael Fraue...	3c164b9	Add dev packages to build CSS along with JS	5 days ago



Bitbucket is more than just Git code management. Bitbucket gives teams one place to plan projects, collaborate on code, test, and deploy.

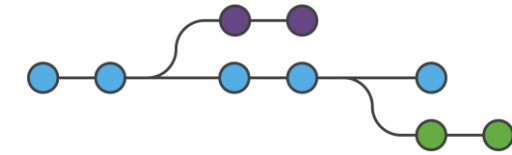
Example: committing

Develop: Test and Review



The screenshot shows the Bitbucket web interface for creating a pull request. The top navigation bar includes 'Dashboard', 'Teams', 'Repositories', 'Snippets', and 'Create'. The main content area is titled 'Pull requests' and 'Create a pull request'. It shows a form with fields for 'Source repository' (bitbucket/webhook-broker) and 'Destination repository' (mfrauenholtz/webhook-broker). Below this is a 'Title' field, a 'Description' field with a rich text editor, and a 'Reviewers' list containing Marcus Bertrand and Mark Adams. A 'Create pull request' button is visible. At the bottom, there is a 'Commits' tab and a table of recent commits.

Author	Commit	Message	Date
Michael Fraue...	5673ac8	Merge branch 'mfrauenholtz/build-css' of bitbucket.org:bitbucket/webhook-broker into mfrauenholtz/build-css	2 hours ago
Michael Fraue...	1045c2a	AUI Form tests!!	2 hours ago
Mark Adams	b38b6fb	Modified the run_js_tests script to make sure a new image is always pulled down	3 hours ago
Michael Fraue...	b66cfc3	Better test setup	4 hours ago



Bitbucket is more than just Git code management. Bitbucket gives teams one place to plan projects, collaborate on code, test, and deploy.

Example: pull request

Develop: Test and Review



webhook_broker/package.json

```
16 16     "babel-core": "^5.0.6",
17 17     "babel-eslint": "^2.0.2",
18 18     "babel-loader": "^5.0.0",
19 +    "css-loader": "^0.10.1",
```

Michael Frauenholtz AUTHOR

Mark Adams Might need some help here? The build failed, and it might be from this. The full log has this output:

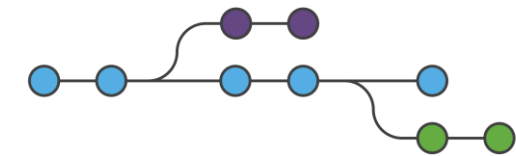
```
build 16-Apr-2015 15:08:59 [0m[91m npm info postinstall autoprefixer-core@5.1.9
build 16-Apr-2015 15:08:59 [0m[91m npm info postinstall caniuse-api@1.3.1
build 16-Apr-2015 15:08:59 [0m
build 16-Apr-2015 15:08:59 > caniuse-api@1.3.1 postinstall /app/node_modules/cssnext-loader/node_modules/cssnext/node_modules/caniuse-api
build 16-Apr-2015 15:08:59 > node -e "require('shelljs/global');if(test('-d', 'dist'))exec('node dist/generate-features.js')"
```

I think we need to make sure there isn't a problem with running `node -e "require('shelljs/global');if(test('-d', 'dist'))exec('node dist/generate-features.js')"` with how we have `node` aliased

Mark Adams
I'm on it

```
20 +    "cssnext-loader": "^1.0.1",
19 21     "eslint": "^0.18.0",
20 22     "eslint-loader": "^0.9.0",
21 23     "eslint-plugin-react": "^2.0.2",
24 +    "extract-text-webpack-plugin": "^0.5.0",
22 25     "karma": "^0.12.31",
23 26     "karma-chrome-launcher": "^0.1.7",
24 27     "karma-junit-reporter": "^0.2.2",

27 30     "karma-webpack": "^1.5.0",
28 31     "qunitjs": "^1.17.1",
29 32     "react-hot-loader": "^1.2.5",
33 +    "style-loader": "^0.10.2",
30 34     "webpack": "^1.7.3",
31 35     "webpack-dev-server": "^1.8.0"
32 36   },
```



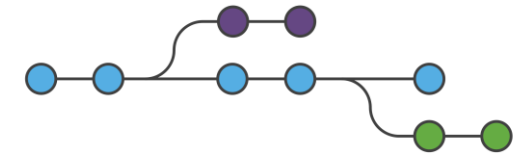
Bitbucket is more than just Git code management. Bitbucket gives teams one place to plan projects, collaborate on code, test, and deploy.

Example: code review

Develop: Test and Review



The screenshot shows a Bitbucket Pull Request (PR) page for a repository named 'mfrauenholtz/build-css' with a PR titled '[BB-12710] Include CSS with fronted assets'. The PR is in an 'OPEN' state. The interface includes a navigation bar with 'Merge', 'Edit', and 'Decline' buttons, and an 'Approve' button with a count of '2'. The PR description states: 'Most of this PR is moving files from connect/js/ to connect/assets/, with the intention that CSS will live with the JS there. The commits in this PR are broken up so that it might be easier to see the changes in each of them.' A list of 'Files changed (55)' is shown at the bottom, including files like .gitignore, scripts/run_js_tests.sh, and various files in the webhook_broker directory. The 'Overview' tab is selected, and the 'Author' is Michael Frauenholtz. A comment from Dan Tao is visible, stating: 'So I didn't realize until just now that you can actually approve specific commits (not tied to a PR) in BB. While looking through your commits I randomly approved one of them.'



Bitbucket is more than just Git code management. Bitbucket gives teams one place to plan projects, collaborate on code, test, and deploy.

Example: code review

Plan: Agile Planning



JIRA Dashboards Projects Issues Boards Create Search ? ⚙️ 👤

Version 1.9 **UNRELEASED** Release

Start: 25/Mar/15 Release: 21/Jun/15 Release Notes

Version 1.9

8 Issues in version 8 Issues done 0 Issues in progress 0 Issues to do

1-8 of 8 View in Issue Navigator

P	T	Key	Summary	Assignee	Status	Development
🚫	🟢	TIS-72	Add video chat interface	Alana Grant	CLOSED	
⬆️	🔴	TIS-73	Fix audio in video chat	Alana Grant	CLOSED	UNDER REVIEW
⬆️	🟢	TIS-70	Booking button randomly disappears	Alana Grant	CLOSED	
⬆️	🟢	TIS-71	CSS updates for new guidelines	Alana Grant	CLOSED	
⬆️	✅	TIS-75	Fix flaky test	Alana Grant	CLOSED	
⬇️	✅	TIS-74	Create blog for v1.9 release	Alana Grant	CLOSED	
⬇️	🟢	TIS-77	Add screenshot for video chat	Alana Grant	CLOSED	1 commit
⬇️	🟢	TIS-76	Add header for homepage	Alana Grant	CLOSED	

1-8 of 8

Develop: Integrate and Release



Task types

All
Builder
Tests
Deployment
Source Control
Variables

Ant
Execute a build using Apache Ant

Artifact download
Copy Bamboo shared artifact to agent working directory

AWS CodeDeploy
Deploy an application to AWS EC2 instances using AWS CodeDeploy

Bower
Bower package manager for Node.js

Command
Execute a globally defined command

Deploy Tomcat Application
Deploys a war file to a Tomcat server

Showing Last 25 builds

Plan statistics

25 builds

88% success

21m average duration

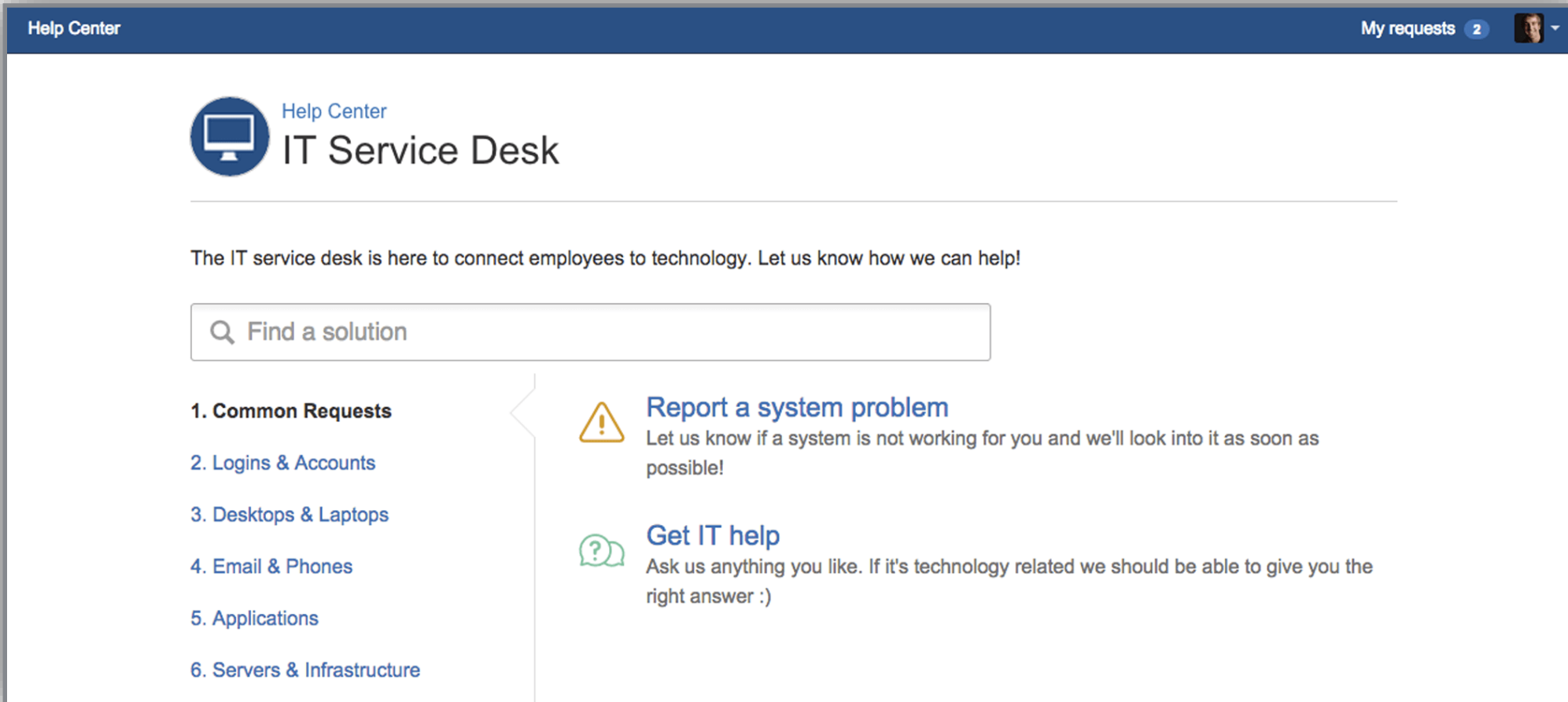
Branches

- khahn-bb-14296-aa-migration-pt-1 #5
- zdavis-BB-14035 #4
- khahn-bb-14296-aa-migration-edge #2
- gmathevs-lock-the-table #1
- bedwards-BB-13430-api-merge-pr #1
- ...-FUSE-3190 #1
- jsheemaker-BB-14463-sync-now-redirect-change #2
- ...-polyfills-to-vendor #2

Build ID	Changes	Time	Status
#338	Changes by Michael Frauenholtz and Erik van Zijst <erik.van.zijst@gmail.com>	13 hours ago	903 passed
#337	Changes by 5 people	14 hours ago	900 passed
#336	Changes by Marcus Bertrand and プロデイ ラオ <brodie@atlassian.com>	15 hours ago	900 passed
#335	Changes by Zach Davis	16 hours ago	900 passed
#334	Changes by Marcus Bertrand	17 hours ago	900 passed
#333	Changes by Will Binns-Smith	1 day ago	900 passed
#332	Changes by Marcus Bertrand	1 day ago	900 passed
#331	Changes by Will Binns-Smith <wbinssmith@gmail.com>	1 day ago	900 passed
#330	Changes by Zach Davis	1 day ago	900 passed
#329	Changes by Kaleb Elwert <belak@coded.io> and Kaleb Elwert	1 day ago	902 passed

Latest build Last successful build

Error log



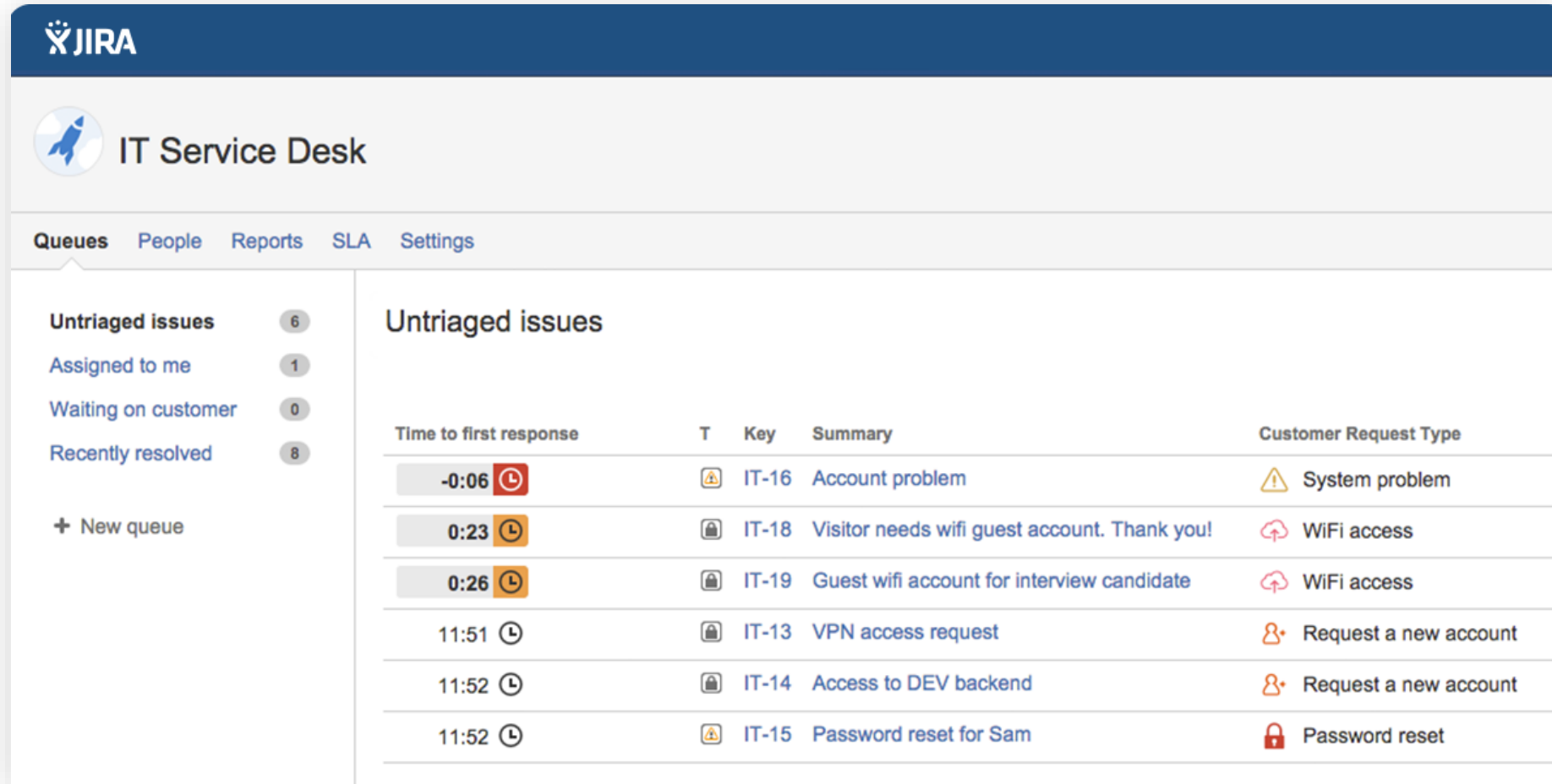
The screenshot shows the Jira Service Desk Help Center interface. At the top, there is a dark blue header with "Help Center" on the left and "My requests 2" with a user profile icon on the right. Below the header, the main content area features a "Help Center IT Service Desk" logo and title. A message states: "The IT service desk is here to connect employees to technology. Let us know how we can help!". Below this is a search bar with the placeholder text "Find a solution". On the left side, there is a vertical list of categories: "1. Common Requests", "2. Logins & Accounts", "3. Desktops & Laptops", "4. Email & Phones", "5. Applications", and "6. Servers & Infrastructure". On the right side, there are two prominent sections: "Report a system problem" with a warning icon and the text "Let us know if a system is not working for you and we'll look into it as soon as possible!", and "Get IT help" with a question mark icon and the text "Ask us anything you like. If it's technology related we should be able to give you the right answer :)".





















Simple Self-Service

Operate: Feedback & Support

Jira Service Desk



The screenshot shows the Jira Service Desk interface. At the top, there's a dark blue header with the JIRA logo. Below it, a light grey bar contains the text "IT Service Desk" next to a rocket icon. A navigation bar below that includes "Queues", "People", "Reports", "SLA", and "Settings". On the left, a sidebar lists queue categories: "Untriaged issues" (6), "Assigned to me" (1), "Waiting on customer" (0), and "Recently resolved" (8), along with a "+ New queue" button. The main area displays a table of "Untriaged issues".

Time to first response	T	Key	Summary	Customer Request Type
-0:06 		IT-16	Account problem	 System problem
0:23 		IT-18	Visitor needs wifi guest account. Thank you!	 WiFi access
0:26 		IT-19	Guest wifi account for interview candidate	 WiFi access
11:51 		IT-13	VPN access request	 Request a new account
11:52 		IT-14	Access to DEV backend	 Request a new account
11:52 		IT-15	Password reset for Sam	 Password reset

**Streamlined
Ticket Management**

Operate: Alerts and notifications



Centralize alerts and notify the right people at the right time

The screenshot displays the Opsgenie alert management interface. At the top, there is a search bar with a placeholder '{q}', and buttons for 'Search', 'Save', and '?'. A dropdown menu shows 'All Time' and a hamburger menu icon. Below this, four alert cards are shown, each with a checkbox on the left. The first alert (#38) is a P2 severity alert titled 'Error rates in the SQL Server have increased by %34', with tags 'SQL' and 'high_pri', assigned to the 'DBA Team'. It has a red 'Open' button and 'Ack', 'Close', and a dropdown menu. The second alert (#37) is a P2 severity alert titled 'Error rates in the SQL Server have increased by %32', with tags 'DBA' and 'SQL', assigned to the 'DBA Team'. It has a red 'Open' button and 'Ack', 'Close', and a dropdown menu. The third alert (#36) is a P2 severity alert titled 'Failed login rates increased %30 for IdP [Okta]', with tag 'Platform Team', assigned to the 'Platform Team'. It has a red 'Open' button and 'Ack', 'Close', and a dropdown menu. The fourth alert (#35) is a P3 severity alert titled 'Increased error rates in the SQL Server', with tag 'SQL', assigned to the 'Platform Team'. It has a 'Responder' button, a 'Closed' button, and a 'Delete' button.

Operate: Incident communication

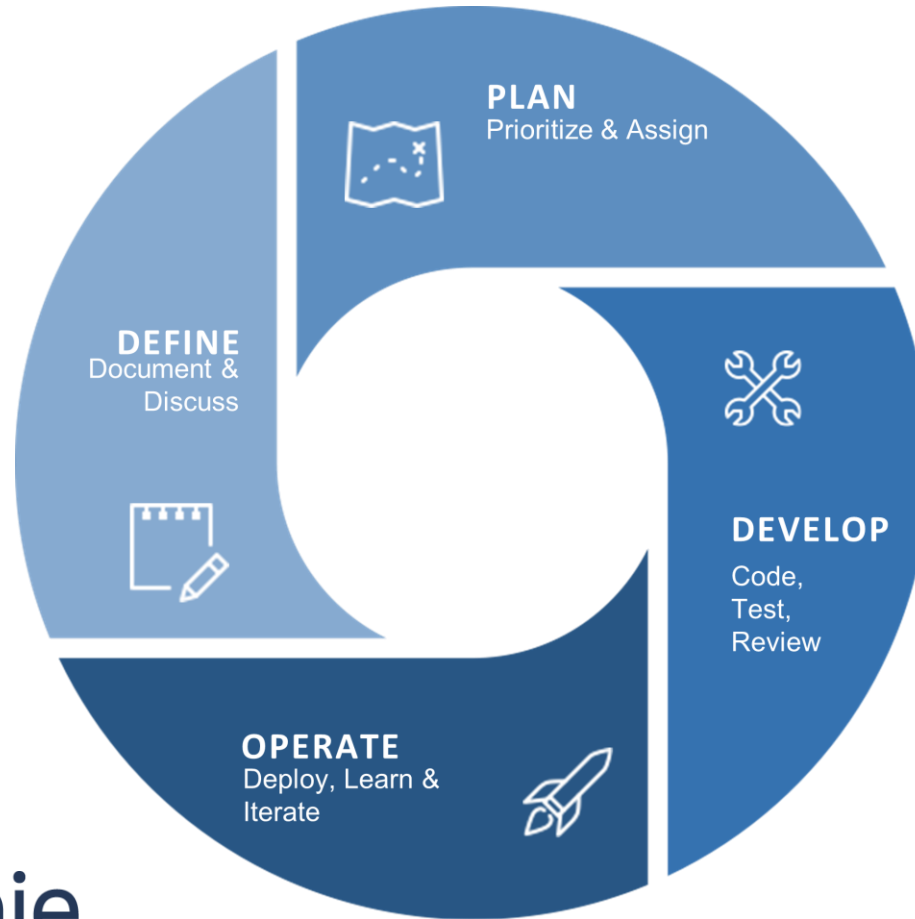


The best way to keep customers and employees informed during downtime

A screenshot of a Statuspage for "ACME API CO." The page has a grey header with three window control buttons (red, orange, green). Below the header, the company name "ACME API CO." is displayed in large, bold, black letters. To the right of the company name is a blue button with white text that says "SUBSCRIBE TO UPDATES". Below this is a yellow banner with the text "Site Instability" on the left and "Subscribe" on the right. The main content area is white and contains four incident updates, each with a bold heading, a description, and a timestamp:

- Monitoring** - The API servers are beginning to stabilize. We're continuing to monitor the situation.
03:32 EDT
- Identified** - The cause of the API timeouts has been identified and a fix is currently being deployed
03:19 EDT
- Update** - The API servers are seeing a higher-than-normal rate of timeouts.
03:12 EDT
- Investigating** - We're investigating some site instability after a recent code push.
03:01 EDT

Atlassian Stack for Software Teams



 Confluence

 Statuspage

 Opsgenie

 Jira Service Desk

 Jira Software

 Bitbucket

 Bamboo



Closing remarks: Software ecosystems provide great business opportunities

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> 160 employees



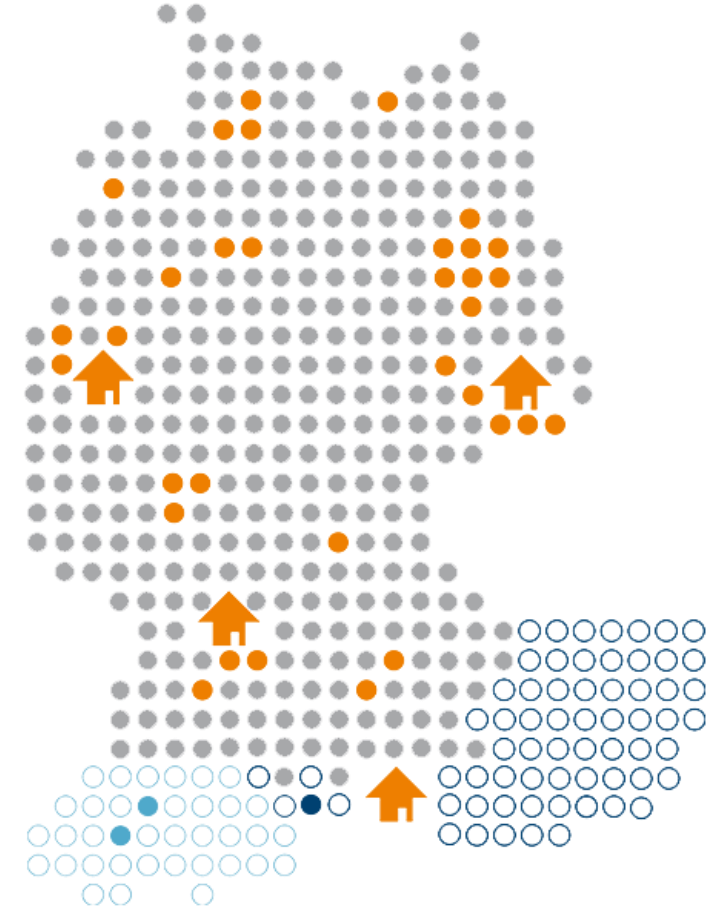
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