

20. Lean Innovation Workflows with LINC

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2019-0.1 11/23/19

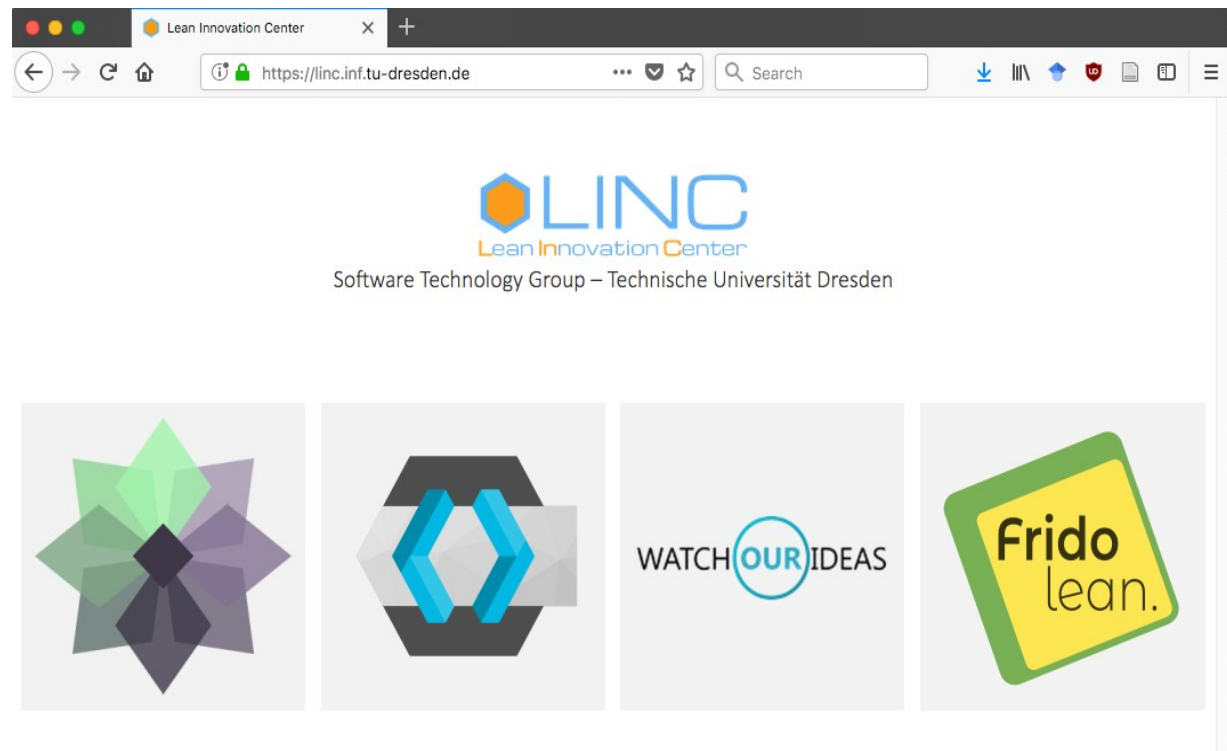
<http://st.inf.tu-dresden.de/teaching/saab>

- 1) What is „Lean Innovation“?
- 2) LINC
- 3) Innovations with Cube-Its

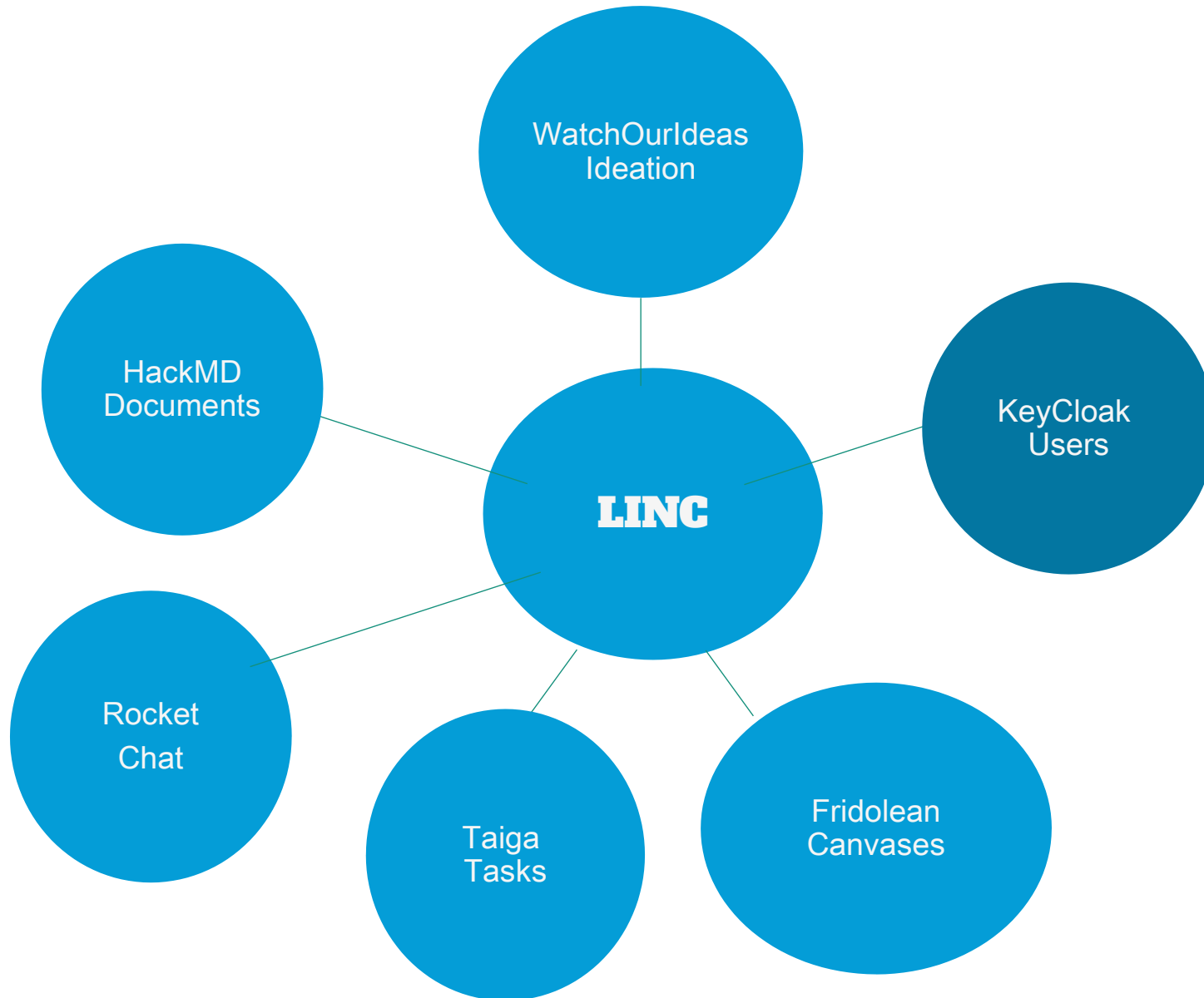
Lean Innovation Management Center

2 Software as a Business

- ▶ Public instance available at <http://linc.inf.tu-dresden.de>
- ▶ Course instance available at <http://linc.saab18.inf.tu-dresden.de>
- ▶ Made in the ECSEL IoSense project www.iosense.eu
- ▶ Innovation Process CLIP for in-house products, but based on Lean Startup
 - Template-based ad-hoc workflows
 - Synchronization of data

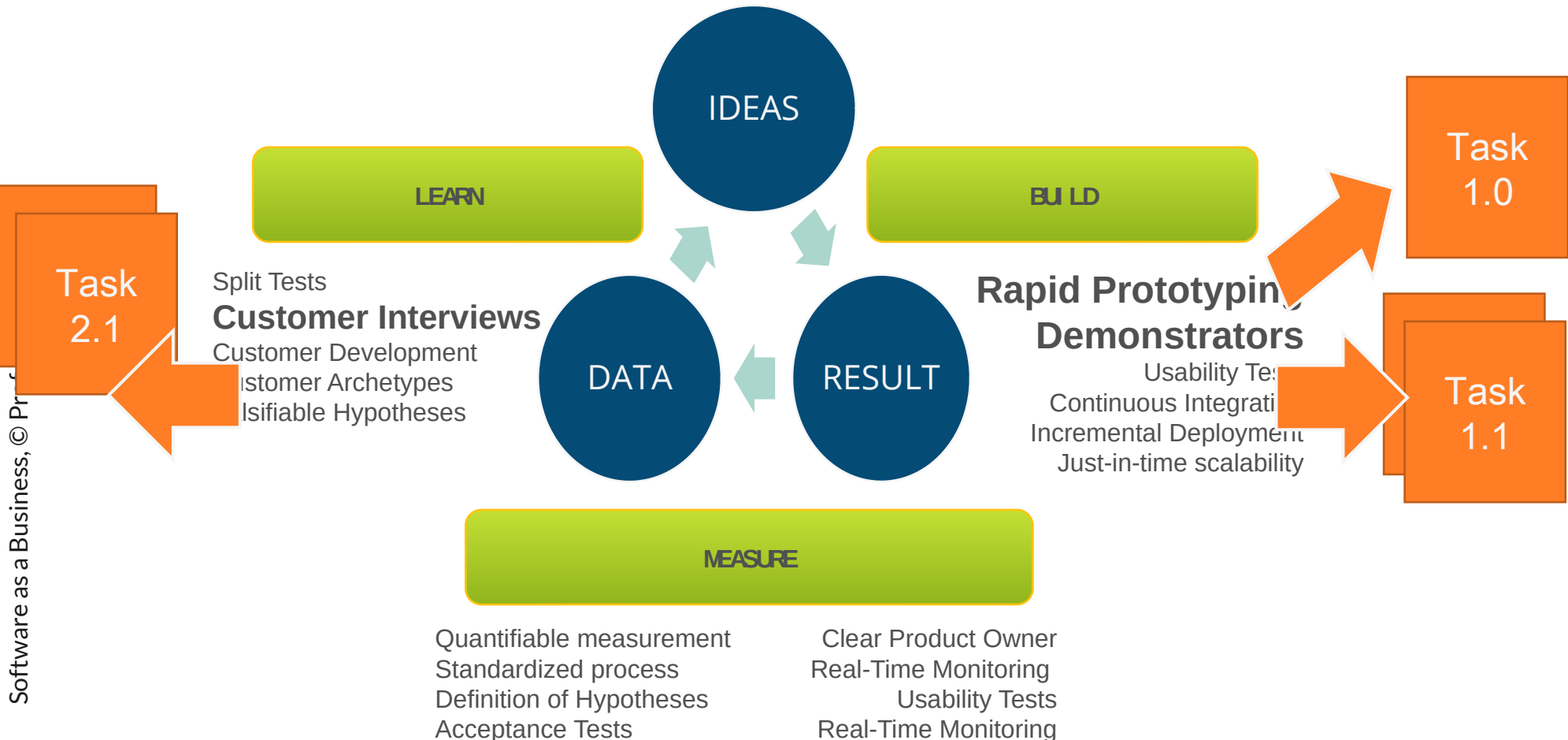


LINC Structure



Hypothesis Testing in „Lean Startup“ Process

Lean Startup Cycle:

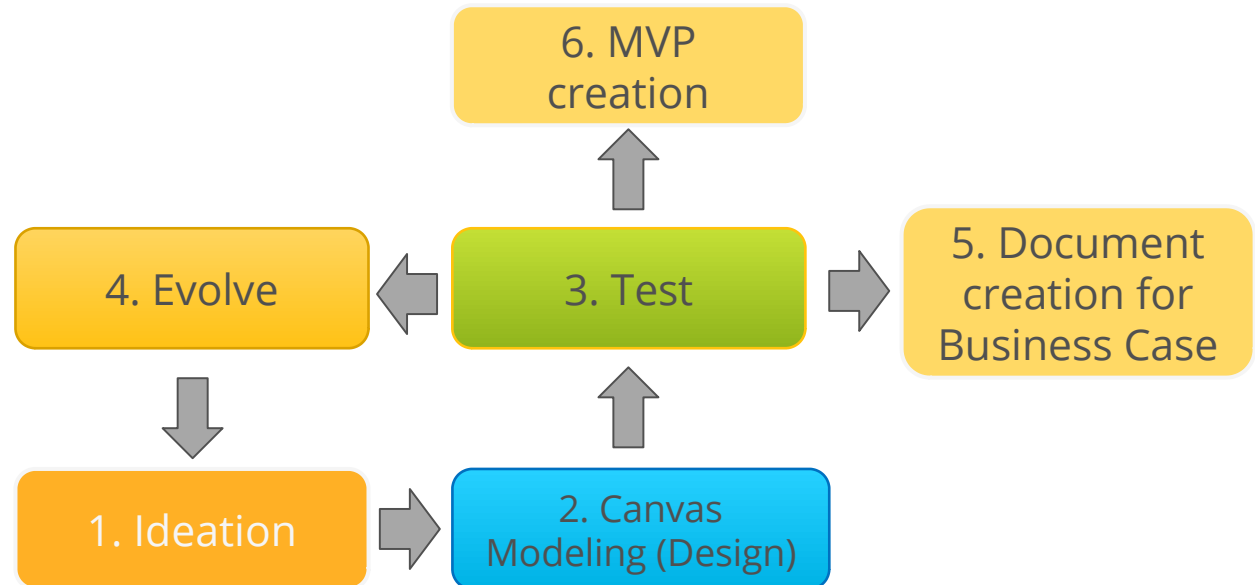


Software as a Business, © Pr...



CLIP is “Lean Startup” for Co-Innovations with Customers

- ▶ CLIP Phases (Customer-centric Lean Innovation Process)
 - 1. Ideation with WatchOurIdeas – Idea management platform
 - 2. Canvas modeling with Fridolean platform
 - 3. Hypothesis testing With stakeholders on RocketChat
 - Lessens Learned List on codiMD
 - 4. Evolve: Iteration / Refine
 - 5. Document creation with codiMD
 - 6. MVP creation



CLIP Innovation Workflows - Starting from Zero

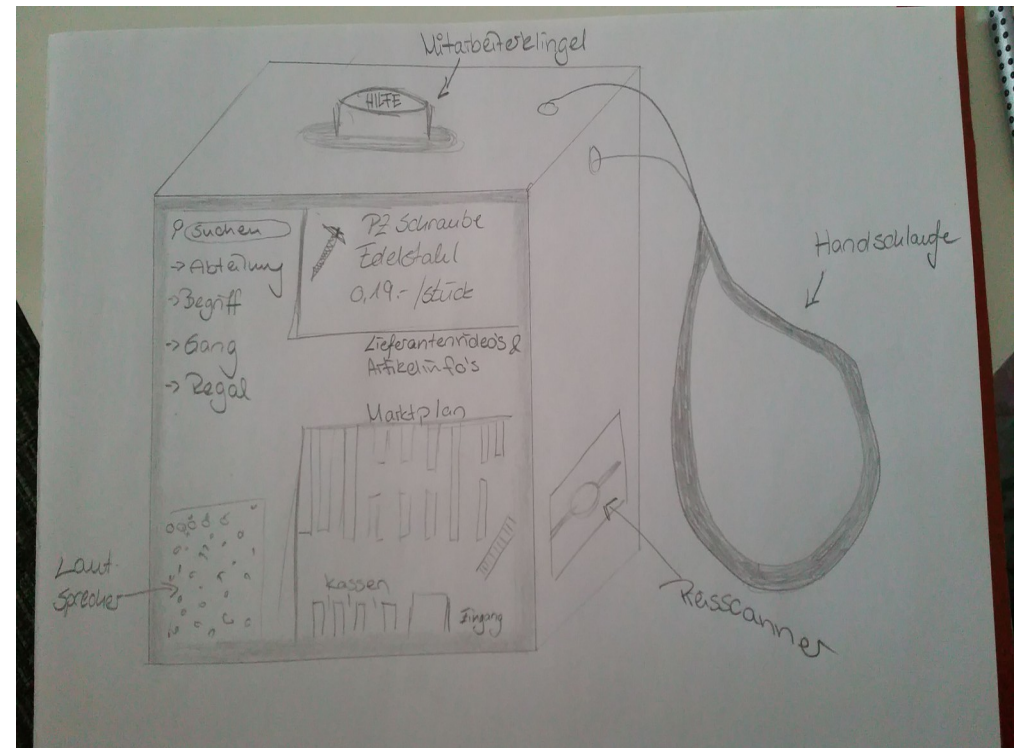
- ▶ Problem (on WOI or Problem Diary) → LeanCanvas → Idea → VPC → SPIN Canvas (with Customer on RocketChat)
- ▶ Idea (on WOI) → VPC → NABC
- ▶ Customer Analysis
 - Customer Day Canvas → Customer Jobs (in VPC) → Problem or Pain
- ▶ Customer Validation
 - Fill a VPC with the customer in a Rocket chat
 - Do a SPIN session with the customer in a chat

CLIP Innovation Workflows – for Cube-It

- ▶ Customer Analysis for **Patient in Hospital**
 - Customer Day Canvas → Customer Jobs (VPC) → Problem or Pain
 - Customer Feel Canvas → Problem
- ▶ Problem (on WOI or Problem Diary) → LeanCanvas → Idea → VPC → SPIN Canvas (with Customer)
 - Of **Patient in Hospital**

Navigation Cube-It [Lisa Schönbach]

- ▶ <https://woi.inf.tu-dresden.de/ideadetail/wegweiser-togo>
- ▶ Use Cube-It as Road Sign in a supermarket
- ▶ Navigation of Customers
- ▶ Information on Products



Cube-It for Robot Control

- ▶ Utilizing a Cube-It to control a robotic arm
 - Gyroscopic sensor translates into movement
 - Integrated into the IoSense Sensor Tool-Kit (STK)



CLIP Innovation Workflows: Starting from a Stable Canvas

- ▶ Scaling
 - Product BMC → Customer Segment variation → BMC of product line
 - Product BMC → Platform Canvas → BMC of Platform
- ▶ Stickifying and Viralizing
 - Lean Canvas → Pain Level Canvas → Grandma Postcard

Ideation with LINC Component WatchOurIdeas – Web Idea Management Platform



The screenshot shows the WatchOurIdeas web platform interface. At the top, there are navigation tabs for 'IDEEN', 'IDEE', and 'BOARDS'. Below this is a search bar and filter options for 'Kategorie auswählen' and 'Typ auswählen'. The main content area displays a grid of idea cards. Each card includes a title, a thumbnail image, a brief description, the author's name, and the date of creation. A blue cloud-shaped callout labeled 'Idea board S' is overlaid on the top right of the grid.

This block shows a detailed view of an idea card titled 'Facet-Dependent Conductivity of PbS'. The card includes the following information:

- Author:** Hsian-Sheng (erstellt am: Mittwoch, 25. Juni 2014 19:56)
- Kategorie:** Werkstoffe & Materialien
- Externe Ressourcen:** (empty field)
- Erstellt auf folgendem Board:** Nanofair 2014

The central part of the card features a diagram labeled 'Bild 1/1: probe scheme'. The diagram shows a 3D perspective of a Si (111) substrate with a 500 nm thick SiO₂ layer. On top of the SiO₂ layer, there are PbS Polyhedra. Two tungsten (W) probes are shown in contact with the PbS Polyhedra, with a distance of 200-300 nm between them.

Below the diagram, there is a detailed text description of the idea, discussing the properties of PbS and the challenges of measuring its electrical conductivity on a specific facet. The text mentions that PbS is a well-known semiconductor with a small band gap and is used in solar cell design. It also discusses the importance of understanding the electron transmission mechanism at the surface of PbS NPs and NC films.

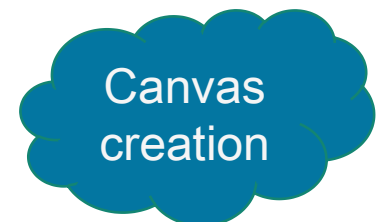
At the bottom right of the card, there is a section titled 'Idee zuletzt angesehen' (Idea last viewed) with a list of users who viewed the idea:

- Am Rin (Mittwoch, 7. Januar)
- Christian Schultz (Dienstag, 9. Septen)
- Christian Schultz (Dienstag, 9. Septen)
- Stephan Walter (Dienstag, 29. Juli 2014)

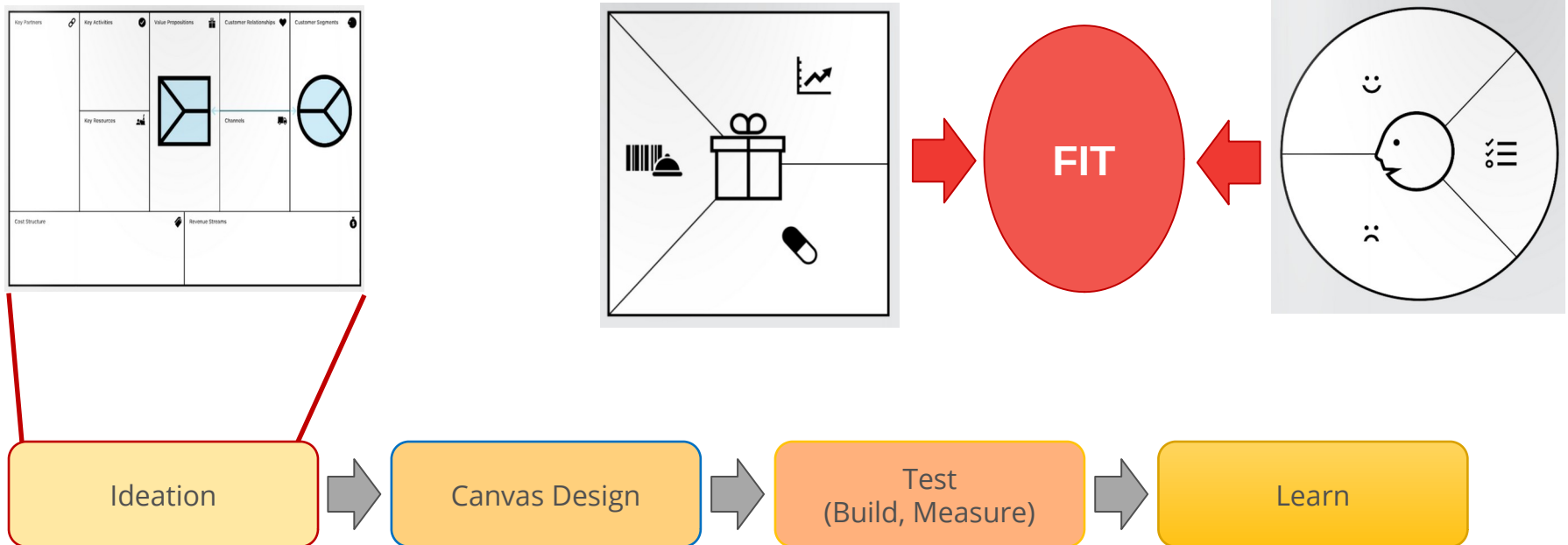


WatchOurIdeas – Web Idea Management Platform

- ▶ Platform for communicating developing, sharing and combining ideas
 - Developed by TU Dresden, can be used within the course
 - Otherwise licensing required from TU Dresden
- ▶ Sharing ideas in idea rooms grouped by idea boards
 - Public, group-private, or private
- ▶ Gathering feedback, suggestions and improvement for ideas
 - Remote customer interviews
- ▶ Create canvases for developing ideas to business
 - Going over to Fridolean, the Canvas management tool



Canvas Modeling with LINC (component "Fridolean")



Web-Based Development of Business Model Canvas with LINC (Component „Fridolean“)

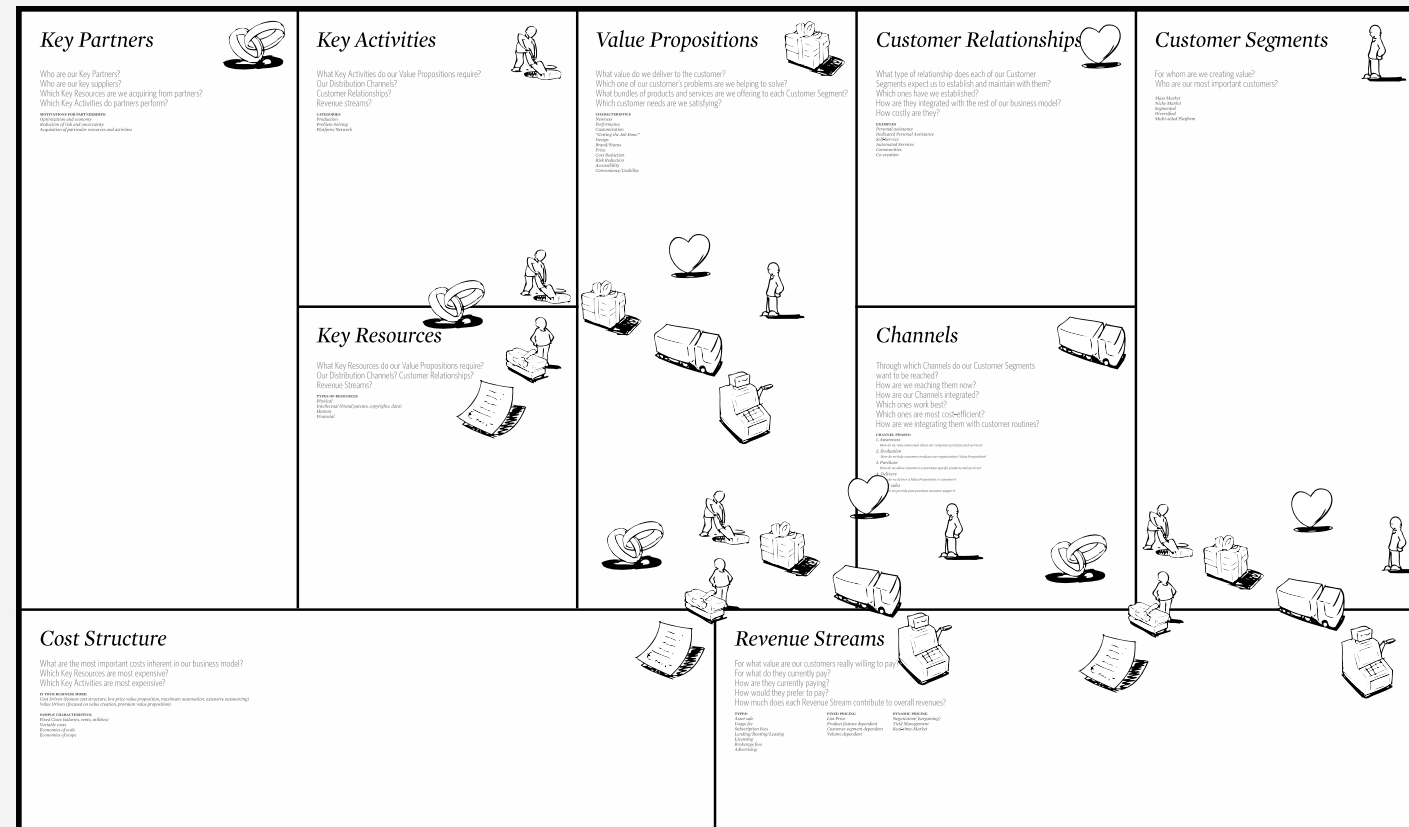
- ▶ From book “Business Model Generation” [Osterwalder/Pigneur]
 - Developing new or capturing existing business models
 - Different aspects of business model generation
- ▶ Fridolean: Online Canvas Editor, developed at TU-Dresden
 - Nested canvases
 - Life editing while chatting with Rocket Chat

The Business Model Canvas

Designed for:

Designed by:

On:
Iteration:



Fridolean.io x

Sicher | <https://fridolean.inf.tu-dresden.de/projects/497aa912-2cd4-451e-aa00-70e1bd2e7a37/editor/bu...>

Apps ST-VL-WS ST-VL-SS Day ST Acq Wshop Projects Search News AnMit Talk Keep It! Review » Andere Lesezeichen

♥ Fridolean.io Projects Explore

Hello, User

Sign out

🏠 Hospital Cube-It

Key Partners

- Hospital
- Health insurance
- Doctors
- Nurses

Key Activities

- program an app for recording wishes on the cube-It

Value Propositions

- Record patient wish by turning around
- Ring alarm when shaking

Customer Relationships

- Abonnement
- News on Cube-It

Customer Segments

- hospitals
- home care companies

Key Resources

- programmer
- VC fund for health systems

Channels

- News on Cube-It
- Newsletter

Cost Structure

- pay-per-service is enabled by precise automated bookkeeping

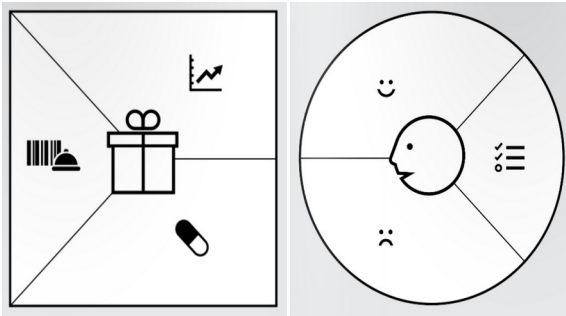
Revenue Streams

- pay-per-service billing
- special flatrates for certain insurances



Example: Web-Based Validation of Business Model Canvas with LINC (Component „Fridolean“)

- Value Proposition Canvas
 - Finding Pains and Gains



Value Proposition (Record patient wish by turning around)

Value Proposition

Products & Services

- cube-it app records wishes by turning the cube it
- add a button for another set of wishes (2nd meaning)
- pay per service

Gain Creators

- immediate transfer of patient state to nurse
- clear recording of patient utterings for log book

Pain Relievers

- patient gets services earlier
- patient leaves hospital earlier

Customer Segment

Gains

- less dangerous situations for visiting toilets
- patient satisfied
- patient non-depressed

Pains

- patient thirsty
- patient depressed
- patient has accident while visiting toilet without help

Customer Job(s)

- patient needs to go to the toilet
- patient needs water
- patient needs talking



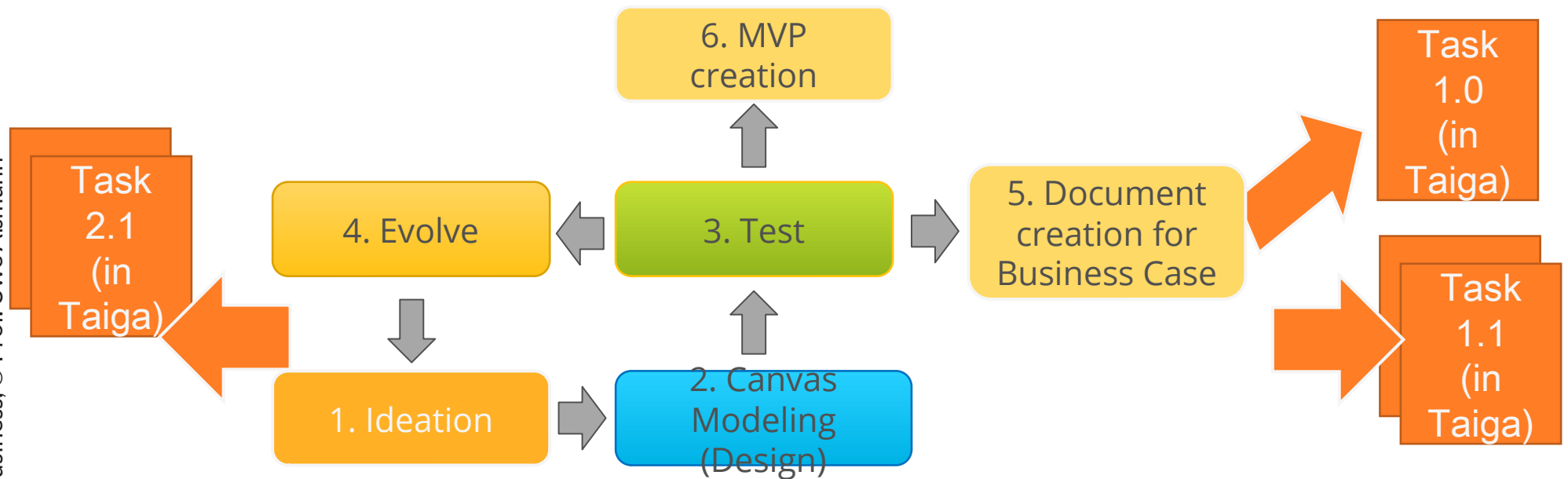
Task Management (Iterations) with LINC Component „Taiga Kanban Board“

18 Software as a Business

- ▶ Taiga Task Management: Similar to
 - Wekan, Jira, Trello, Eteo-Board
- ▶ User identity management with KeyCloak (OSS)

The screenshot displays the Taiga Kanban Board interface. At the top, there is a dark green header with a 'Help' icon on the left and 'Login' and 'Sign up' links on the right. Below the header, the main area is titled 'TAIGA KANBAN' and features a search bar and a volume slider. The board is organized into four columns: 'ICEBOX', 'DEFINING', 'READY', and 'UX'. Each column contains several task cards. Each card has a star icon, a status (e.g., 'Not assigned'), a title, and a number of points or votes. For example, in the 'ICEBOX' column, there is a card for '#2128 Follow users' with 3 points, and another for '#4382 Create/comment US/EPIC/Issue with E-Mail' with 10 points and 7 votes. In the 'DEFINING' column, a card for '#1204 Integrate chat module AKA Mattermost' is assigned to 'Juanfran' and has 10 points and 3 votes. In the 'READY' column, there is a card for '#1674 Import projects from Gitlab' with 6 points and 4 votes, and another for '#1673 Import projects from Github' with 11 points and 2 votes. In the 'UX' column, there is a card for '#4861 Taiga manual' with 1 point and 1 vote, and another for '#4661 Improve project home' with 1 vote. The interface also includes a sidebar on the left with navigation icons for search, home, and other functions.

CLIP Hypothesis Testing for Lean Product Development



Document Creation for Business Cases with LINC Component „CodiMD“

20 Software as a Business

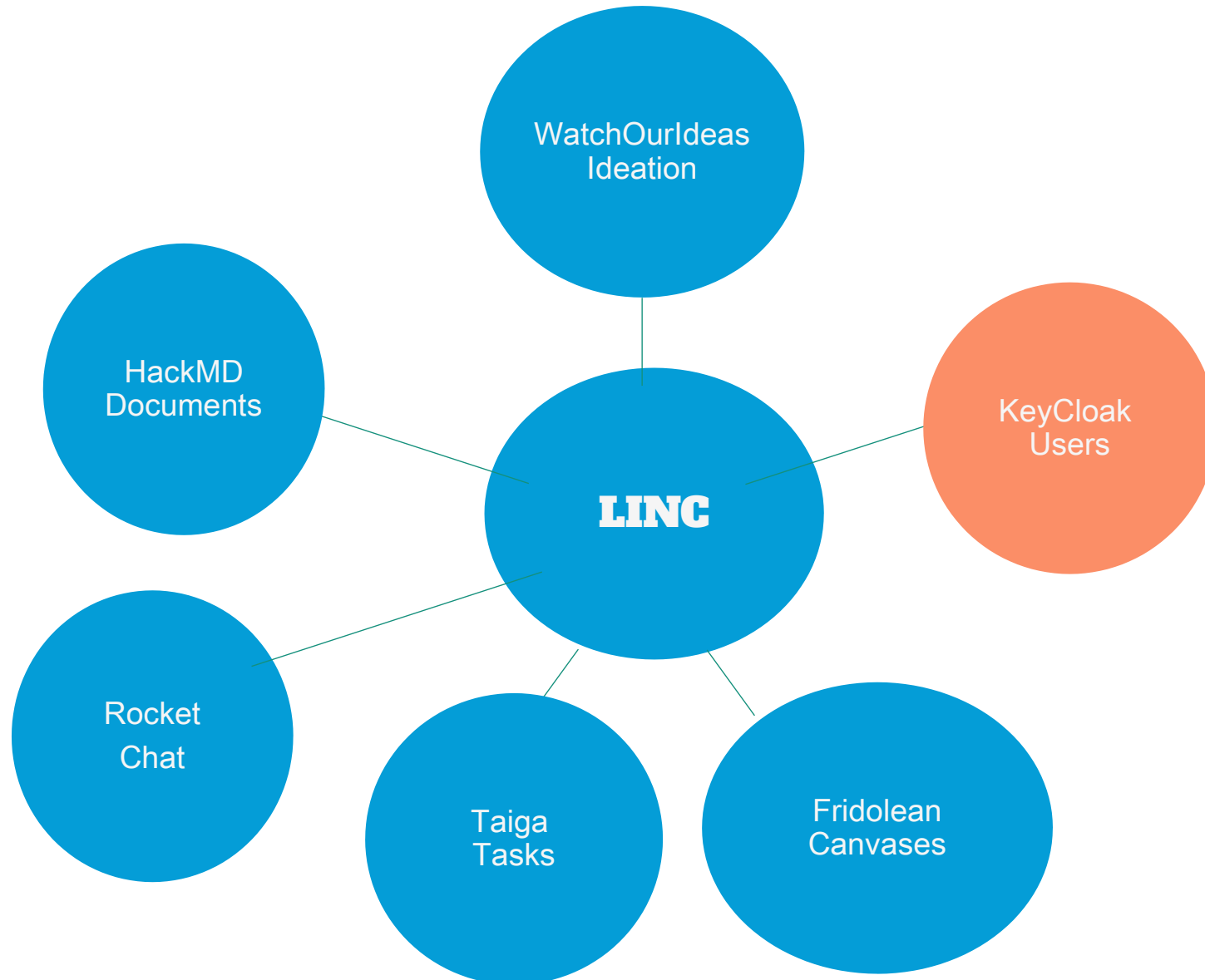
- ▶ Like Google docs, but private to an idea room or idea board
- ▶ Collaborative editing of
 - Idea cases
 - Business Case documents
 - Internal documents
- ▶ User identity management with KeyCloak (OSS)

The screenshot displays the CodiMD web interface. The top navigation bar includes options like '+ Neu', 'Veröffentlichen', and 'Menü'. The main content area is split into two panes: a dark-themed code editor on the left and a rendered preview on the right. The code editor shows the following content:

```
1 Features
2 ===
3 **[English version](/features)**
4 **[中文版](/TKNuhom7S620V6bDyBgLXA)**
5 **[日本語版](/b_l4reLiTdWOSn9SiCmbJQ)**
6
7 **Do not modify this note.** Thank you very much
8 :smile:
9 **If you want to say hello or play with something,
10 please go to [Playground](/SA8inq7VTm08jIWC5QsMcw)**
11
12 Introduction
13 ===
14 <i class="fa fa-file-text"></i> **HackMD** is a
15 realtime, multi-platform collaborative markdown note
16 editor.
17 This means that you can write notes with other people
18 on your **desktop**, **tablet** or even on the
19 **phone**.
20 You can sign-in via multiple auth providers like
21 **Facebook**, **Twitter**, **GitHub** and many more
22 on the [homepage]().
23
24 Please report new issues in [GitHub]
25 (https://github.com/hackmdio/hackmd-io-issues/issues/new).
26 If you need instant help, please send us a [Facebook message]
27 (https://www.messenger.com/t/hackmdio).
28 **Thank you very much!**
29
30 Workspace
31 ===
32 ## Modes
33 **Desktop & Tablet**
34
35 <i class="fa fa-edit fa-fw"></i> Edit: See only the
36 editor.
37 <i class="fa fa-eye fa-fw"></i> View: See only the
```

The rendered preview on the right shows the document's appearance, including the title 'Features', language selection links (English version, 中文版, 日本語版), a warning to not modify the note, and the 'Introduction' section with a description of HackMD and links to GitHub and Facebook. The 'Workspace' section is partially visible at the bottom.

Single-Sign-On with User Federation Server Keycloak



Cube-It Applications

1st IoSense Innovation Challenge






- „Road Sign To Go“ – Lisa Schönbach

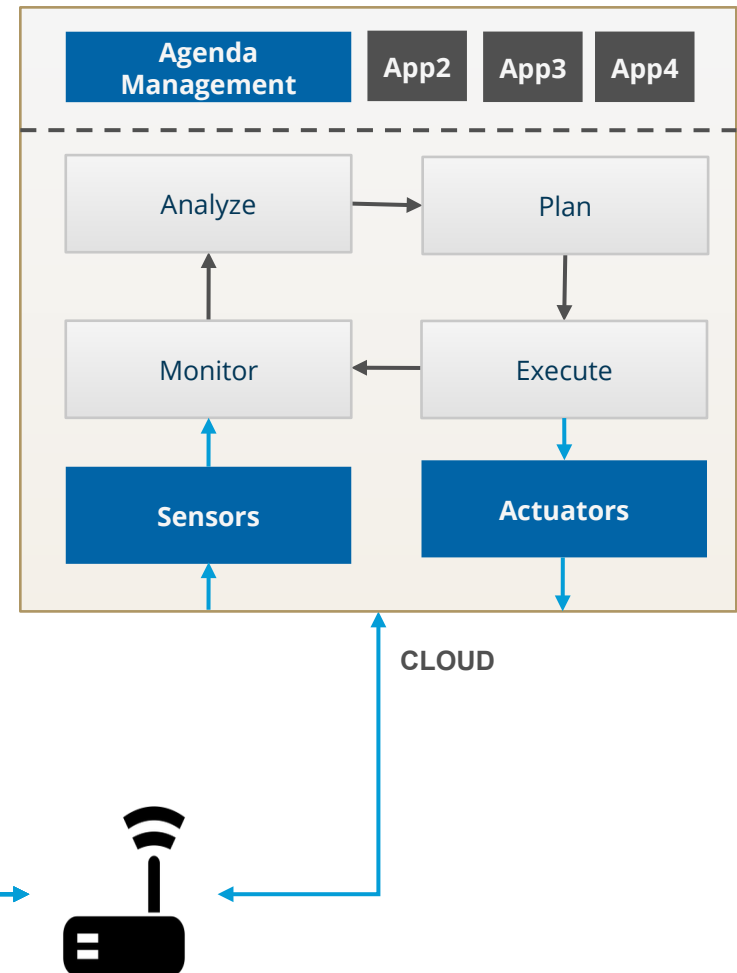


1st Innovation Competition on LINC with Cube-Its (“cube intelligent thing”) – A Modular IoT Platform with Cloud Backend

- ▶ <https://woi.inf.tu-dresden.de/ideadetail/cube-its---issue-tracking>



-  **E-Ink Display**
264x176px Display
-  **WIFI Module**
2.4GHz Wifi
-  **Orientation Sensor**
BOSCH BNO055 MEMS
-  **LED**
NeoPixel LED
-  **NFC Sensor**
NFC Reader



Results: Top List of Ideas

- ▶ Road Sign Cube-It ToGo
- ▶ Restaurant Cube-It
- ▶ Mood Cube-It

- ▶ Cube-It for Robot Control

Restaurant Cube-It [Ronny Seiger]

- ▶ <https://woi.inf.tu-dresden.de/ideadetail/cube-its-in-a-restaurant>
- ▶ „Cube-Its can be used as personal devices for guests in restaurants/bars:
 - as a personal tab;
 - to signal the waiter when ready to order or to pay;
 - to see updates regarding meal preparation;
 - to see the current amount due;
 - and also to inform waiters about new guests or guests switching tables.“

Mood Cube-It [Mandy Korzetz]

- ▶ <https://woi.inf.tu-dresden.de/ideadetail/moodcube-its>
- ▶ „MoodCube-Its store personal preferences for home configurations;
- ▶ lighting, music and heating are adjusted depending on the current mood –
- ▶ set by the MoodCube-It's orientation.“



The End

- ▶ Explain how you edit a value proposition canvas in LINC.
- ▶ Explain how you create a .odt document from a .md document written in codiMD
- ▶ Explain how you use RocketChat for a customer problem interview.