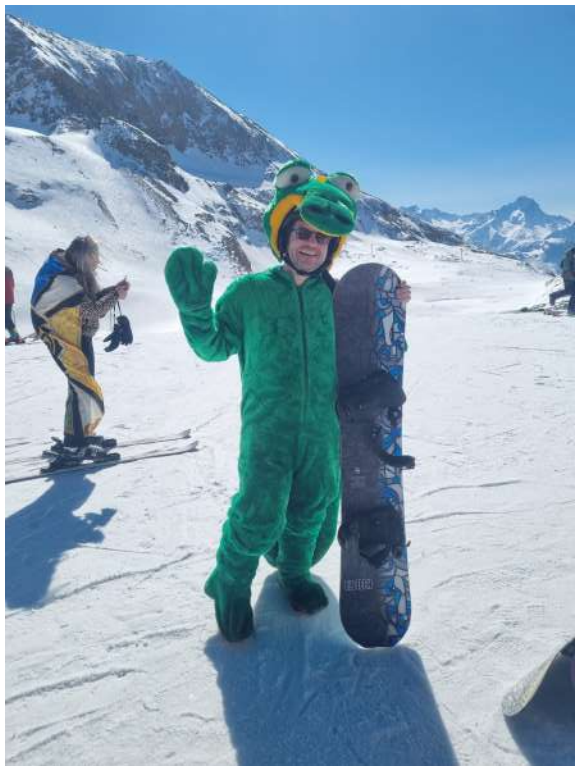
Open-Source: It's more than just code

Who am I?

- Christofer Dutz
- Snr. Staff Software Engineer
- Rivian
- Committer of many Apache projects
- Member of the Apache Foundation
- VP of Apache PLC4X
- Member of the ASF Board of Directors
- Twitter: @ChristoferDutz
- LinkedIn: christofer-dutz



Agenda

- Dimensions of Open-Source
- What did I do wrong?
- How can we do it better?
- Open Discussion

Dimensions of Open-Source

- Technical Dimension
- Community Dimension
- Commercial Dimension

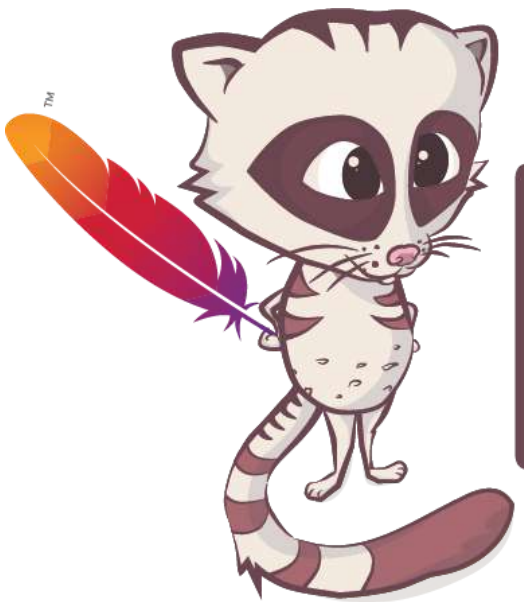
Technical Dimension

- Which is the problem I want to solve?

Technical Dimension: PLC4X (2017)

- Industry 4.0 is everywhere
- Open-Source has solutions for almost all I40 use-cases
- I40 is all about processing industrial (production) data
- Problem: No open-source solution for accessing the data on industrial automation hardware
- Thesis: If there was a solution for this problem, the automation industry would provide me with interesting project for the rest of my (work-) life

Technical Dimension: PLC4X (2017)



APACHE PLC4X

PLC4X is a set of libraries for communicating with industrial programmable logic controllers (PLCs) using a variety of protocols but with a shared API.

— Apache PLC4X Project Statement

Technical Dimension: PLC4X (2017)

Community Dimension

- Am I the only one wanting to solve this problem?
- Can I convince others to work on this with me?

Community Dimension: PLC4X (2017)

Testbaloon ApacheCon NA Miami 2017

Thanks to codecentric

- Let me work 3,5-4 years on PLC4X full-time
- Financed my travels as well as soft- and hardware
- Gave me a platform to spread the word:
  - Blog
  - Conferences
  - Booths at fairs
  - Contacts to the IT-press

Joining Apache

- Explicitly chose Apache:
  - Vendor-neutrality
  - Apache has an excellent reputation
  - Apache-Way is excellent for building communities

Spreading the word

- Postings in social media
- Blog-posts
- Articles for IT magazines
- Talks at conferences & meetups

Social media

Social media

Mind-Games: Toddy

Lower entry boundaries

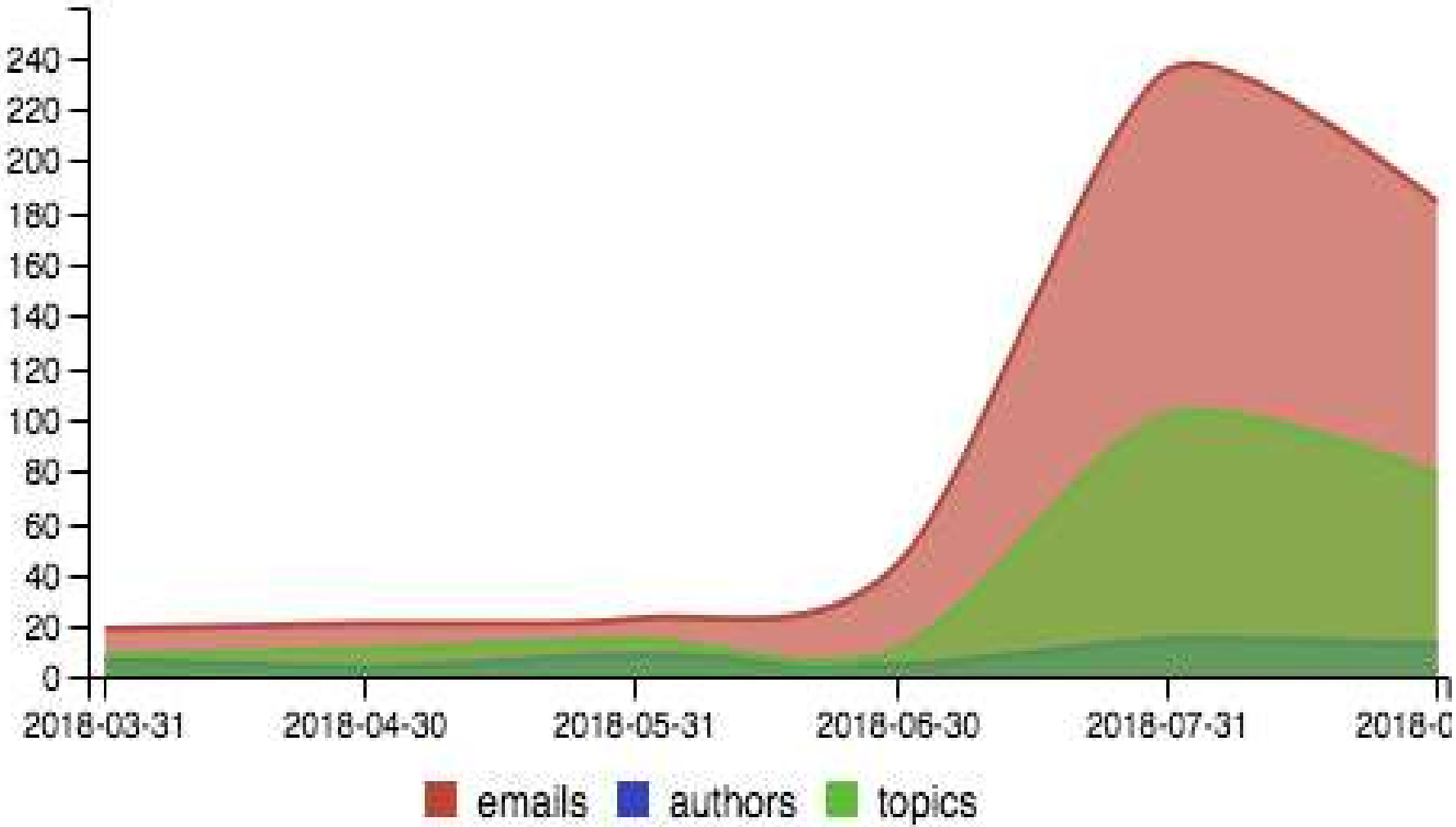
- Tooling: Make is as simple as possible
- Rule: Only put up the ones you really need
- Make people committers as early as possible
- Talking to myself on the mailinglist

Lower entry boundaries

```
[INFO] --- groovy-maven-plugin:2.1.1:execute (prerequisite-check) @ plc4x-parent ---
Detected OS:   windows
Detected Arch: x86_64

Detecting Java version:    11.0.15        OK
Detecting Dotnet version:  6.0.104        OK
Detecting Go version:      1.16.6         OK
Detecting Git version:     2.24.1         OK
Detecting Java version:    11.0.15        OK
Detecting Gcc version:     4.8.3          OK
Detecting Python version:  3.10.1         OK
Detecting Poetry version:  missing (Please install at least version 3.6.0)
Detecting setuptools:                     OK
Detecting Maven version:   3.6.3          OK
[INFO] ------------------------------------------------------------------------
[INFO] Reactor Summary for PLC4X 0.10.0-SNAPSHOT:
[INFO]
[INFO] PLC4X ..................................... FAILURE [  7.063 s]
```

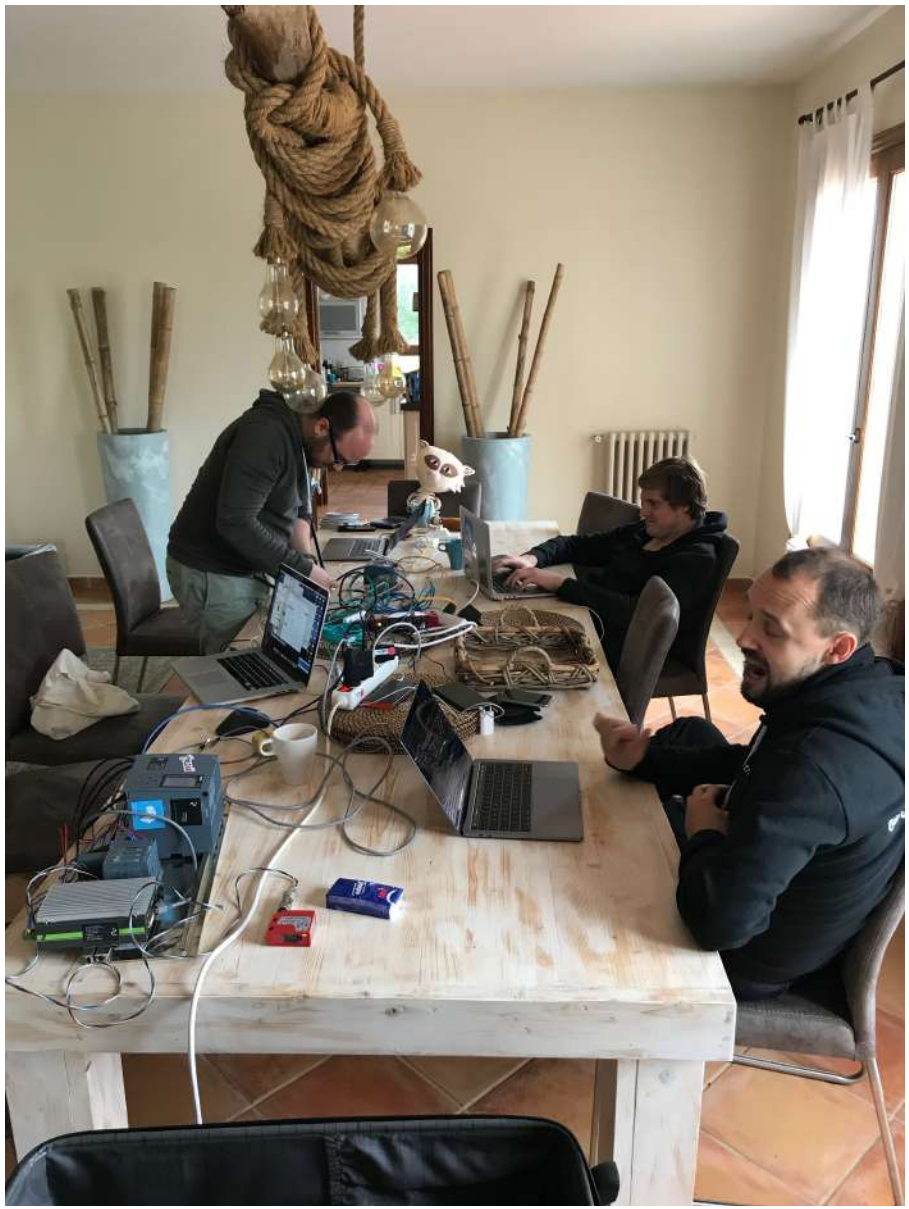
First success



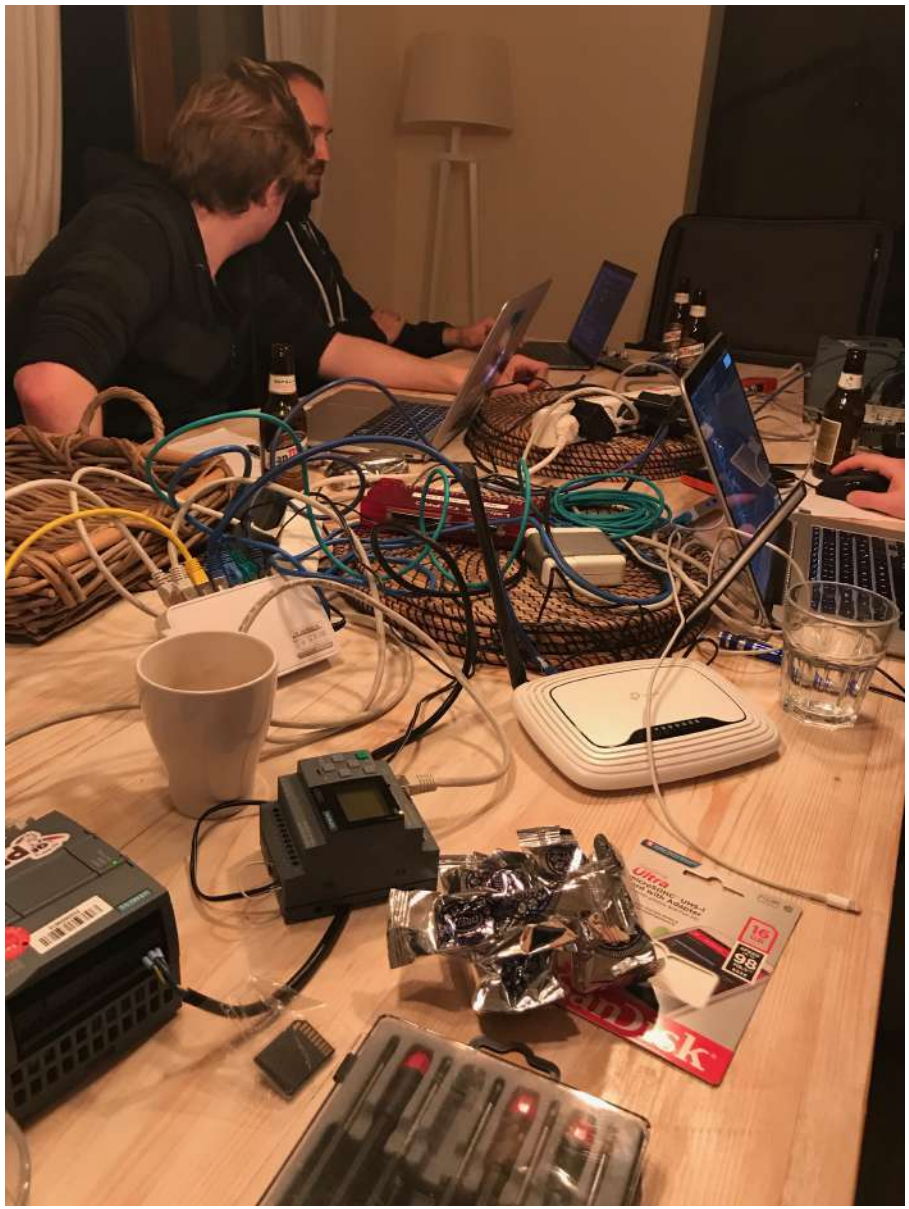
First success

Community-Events: Pragmatic Minds

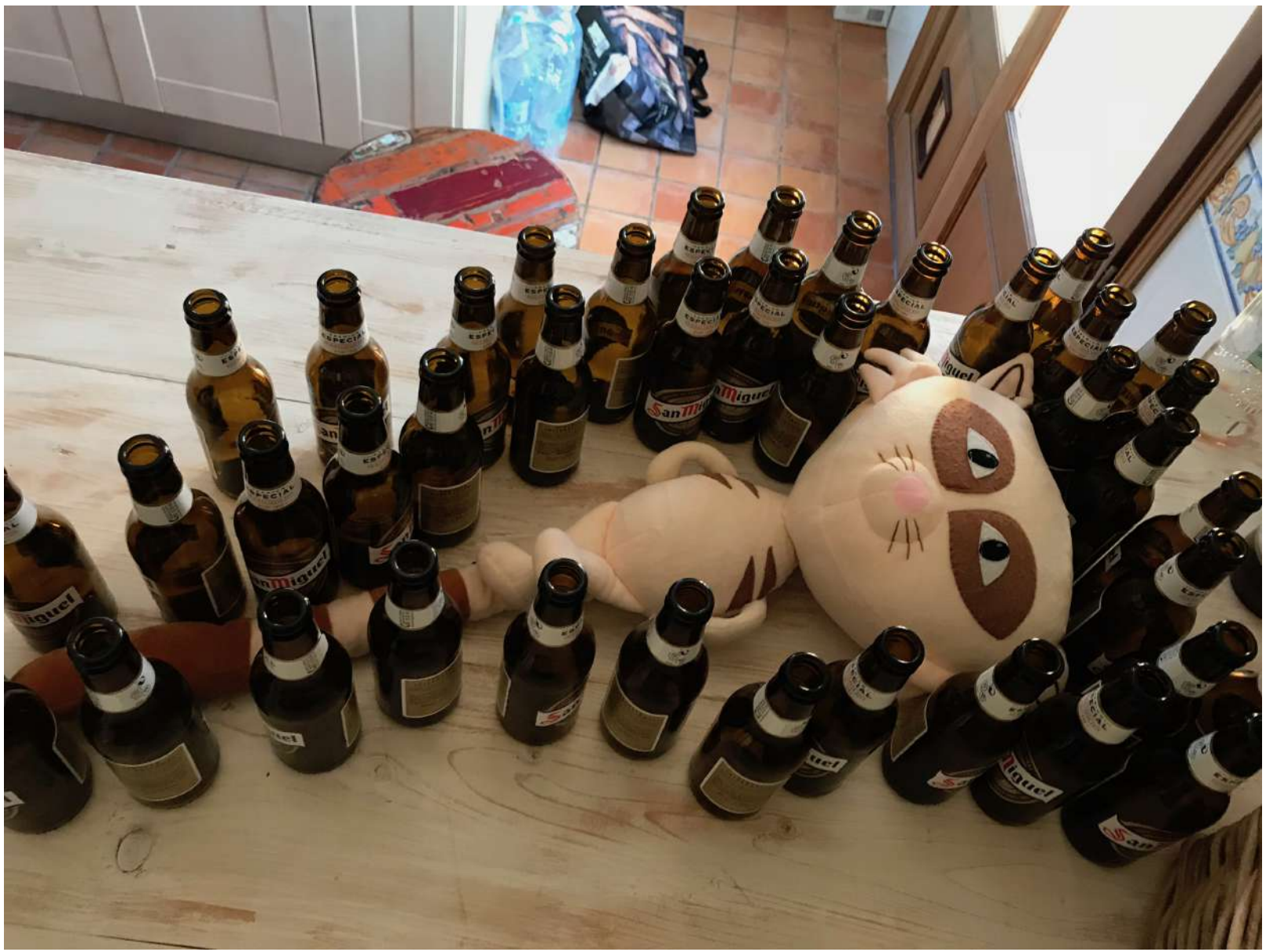
Community-Events: Coding Malle



Community-Events: Coding Malle



Community-Events: Coding Malle



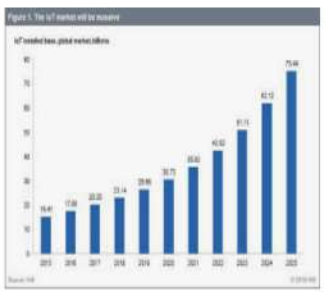
Community-Events: Brüssel

Commercial Dimension

- Does anyone have the problem I’m trying to solve?
- Is anyone interested in using my solution?
- Are these also able to use my solution?
- Are these also willing to support me?

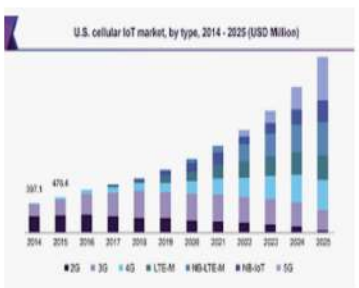
Commercial Dimension

Commercial Dimension: PLC4X



Roundup Of Internet Of Things Forecasts And M...
forbes.com

IoT Device Management Market Size, Trend | Industry...
grandviewresearch.com



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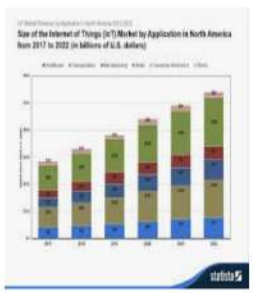

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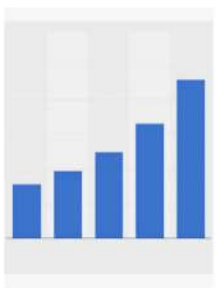

IoT market size worldwide 201...
statista.com

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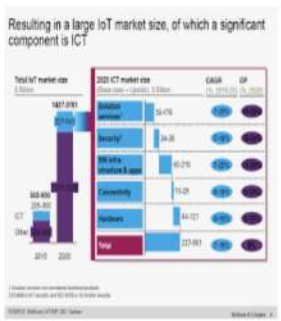
finance.yahoo.com



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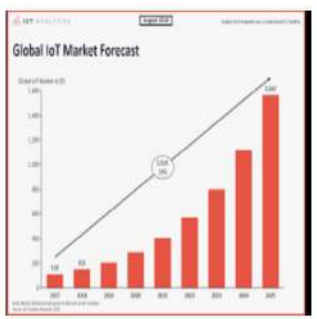

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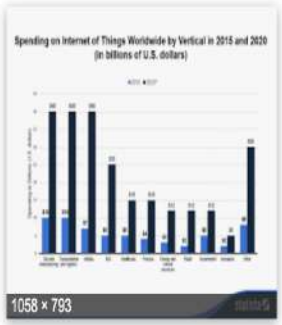
iot-analytics.com



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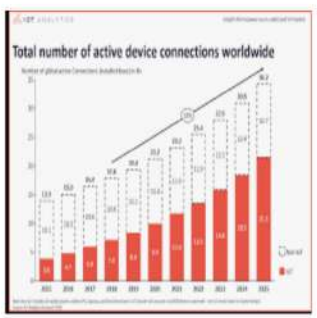

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Narrowband IoT Market | Global Trends, Size,...
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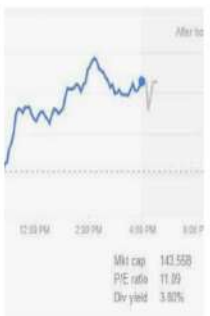

IoT Market Forecasts | Posts...
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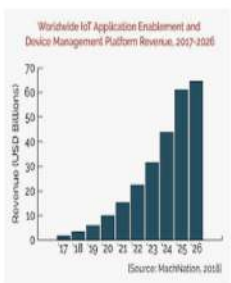
Global Industrial IoT Gateway Market 2019-2023 ...
businesswire.com



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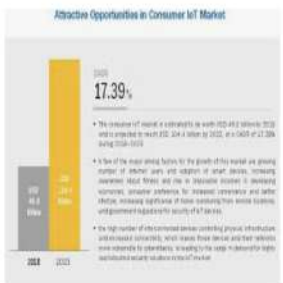
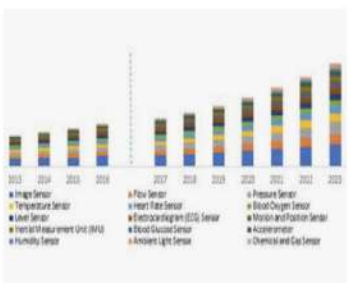
i-scoop.eu



Consumer IoT Market Size, Growth, Tren...
marketsandmarkets.com



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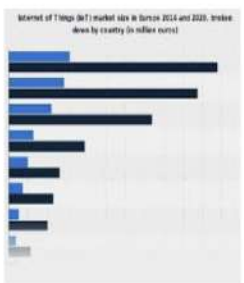

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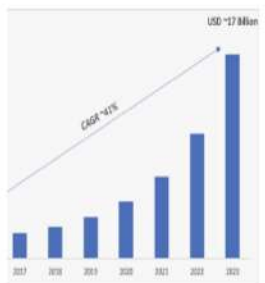
statista.com



IOT Operating Systems Market 2018 ...
wfmj.com

Commercial Dimension: PLC4X

- Problem:
  - IT und OT diverged end of the 90s
  - OT-folks don’t know open-source
  - OT-folks don’t know consulting
  - OT-folks usually only work with big established vendors
  - OT-folks don’t read IT-press
  - OT-folks don’t go to IT-conferences
  - OT-folks don’t realize, that Industry 4.0 more IT than it is OT

Commercial Dimension: PLC4X

- How I still tried to get noticed:
  - Guerillia-Marketing on industrial fairs
  - Presence meetings at potential customers (If they don’t come to me, I’ll come to them)
  - POCs (at rates that didn’t even slightly cover the costs)

Commercial Dimension: PLC4X

- Recently I added more of this:
  - Talks on automation fairs and conferences
  - Podcasts
  - Political involvement
  - Commenting social media posts of established OT folks and vendors

Commercial Dimension: PLC4X

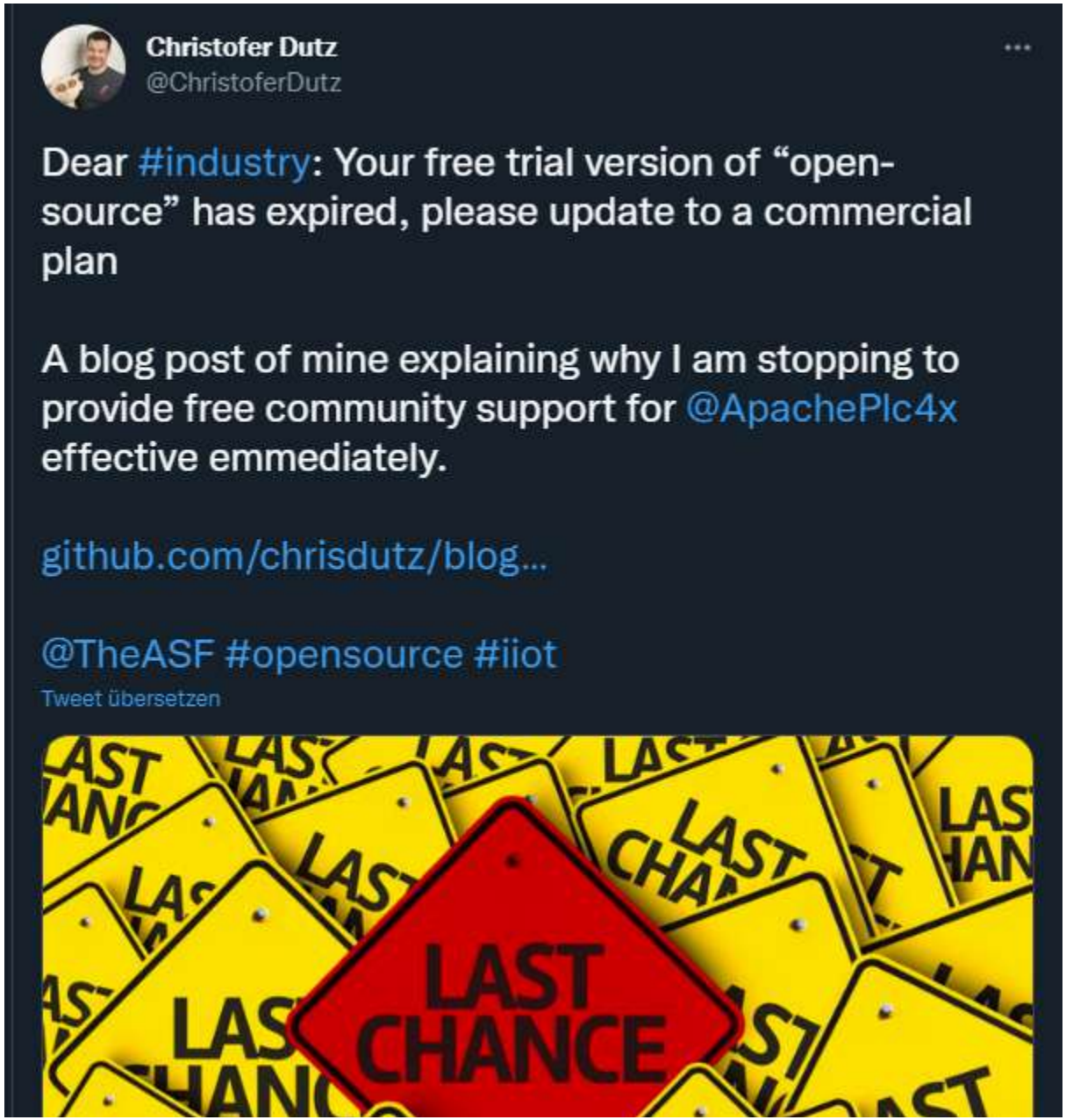
Commercial Dimension: PLC4X

- Acquisition in OT is a thing of months up to years
- No real industrial gigs till 2020
  - Just POCs over a few days
- Had to decide what to give up:
  - Working at codecentric
  - Working on Apache PLC4X

Commercial Dimension: PLC4X

- Decided to give up on codecentric
- Plan was earning money with PLC4X consulting
- Idea was:
  - As a freelance consultant I need way less income to survive
- Problem was:
  - Being on my own: Even less credible than with an unknown company
  - Only one single paid gig in 2020 + 2021

Blog Post


Christofer Dutz
@ChristoferDutz
Dear #industry: Your free trial version of “open-source” has expired, please update to a commercial plan
A blog post of mine explaining why I am stopping to provide free community support for @ApachePlc4x effective emmediately.
github.com/chrisdutz/blog...
@TheASF #opensource #iiot
Tweet übersetzen
LAST CHANCE

Blog Post

https://t3n.de › news › amp · Translate this page

Open-Source-Entwickler droht, Projekt aufzugeben - T3N

2 days ago — Am Dienstag kündigte der Softwareentwickler **Christofer Dutz**, Schöpfer des Projekts Apache PLC4X, an, den Community-Support für die Software einzustellen, ...

https://fuentitech.com › another-open-source-developer...

Another open source developer will stop supporting because ...

1 day ago — **Christofer Dutz**, creator and lead developer of the free Apache PLC4X Industrial Automation Library Suite, has announced its intention to stop offering free ...

https://www.finanznachrichten.de › 5... · Translate this page

Open-Source-Entwickler droht, Projekt aufzugeben

2 days ago — Am Dienstag kündigte der Softwareentwickler **Christofer Dutz**, Schöpfer des Projekts Apache PLC4X, an, den Community-Support für die Software einzustellen, ...

https://www.theregister.com › 2022/01/13

Open source maintainer hits out at corporate freeloaders

2 days ago — On Tuesday, **Christofer Dutz**, creator of Apache PLC4X, said he will stop providing community support for the software if corporate users fail to step up and

Blog Post

Blog Post

Tweet-Statistiken
Christofer Dutz @ChristoferDutz · 11. Jan.
Dear #industry: Your free trial version of “open-source” has expired, please update to a commercial plan
A blog post of mine explaining why I am stopping to provide free community support for @ApachePlc4x effective ...
114
109
6
Impressions
51.442
Interaktionen
1.717
Detailerweiterungen
485

What I tried next

- Stopped providing fee support for PLC4X
- Promised to help people solve their problems as mentor
- Support, consulting, training only via contracts
- Added "crowdfunding" section to my website for financing feature development
- GitHub Sponsors page

How did that help?

- Got 3-4 smaller consulting contracts early 2022
- Not a single cent was paid for any of the crowdfunding campaigns
- 3-4 months after my blog-post, almost no incoming requests
- Only one Apache friend sponsored me for a few months (Till I asked him to cancel that)

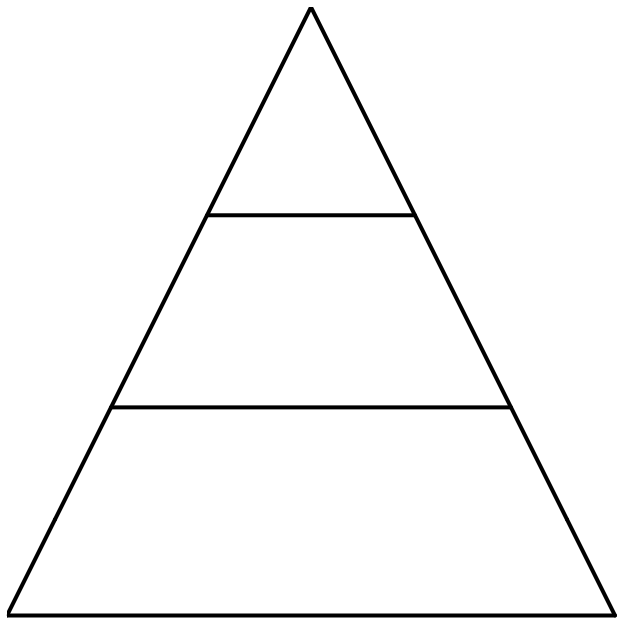
So was it all for nothing?

- Crowdfunding was a complete failure
- Crowdfunding was probably the most successful thing

WTF?!?

- Due to legal and financial requirements form of donation-based crowdfunding doesn’t work
- It listed possible features and added a price-tag to them
- Companies need price-tags to decide things
- Got requests from multiple companies willing to partially finance some campaigns

These Layers in relation



Technical Dimension

Community Dimension

Commercial Dimension

Summing it up: What were the challenges?

- Visibility (Open-Source freelancers are almost invisible)
- Customers are used to buying products and not services
- Customers "can’t" make business with small companies
- Legal documents usually dictated by customers
- Consultant easily becomes reliant on one or two customers
  - These often start exploiting the consultant

What did I do wrong?

What do I think we need?

- Entity/Platform for offering open-source services
- Offering:
  - Consulting
  - Training
  - Support
  - Feature-Development:
    - Crowd-Funding platform

What do I think we need?

- Big enough to be able to get listed as "preferred vendor"
- Big enough to be able to present itself at fairs and conferences
- Big enough to have connections to press
- Big enough to have a financial and legal department able to take on bad customers
  - Option to pay the consultant immediately or earlier
- Providing standard well-balanced, open-source compatible contracts

Summary

- Starting your own Open-Source project is:
  - Unbelievably much work
  - Can provide unbelievably much joy
- Even though my failure to earn a living with it, I wouldn’t call it a failure.
- Would always do it again … just different ;-)

THANK YOU
SEE YOU
AGAIN