



How RIOT-ready is industry?

Agenda

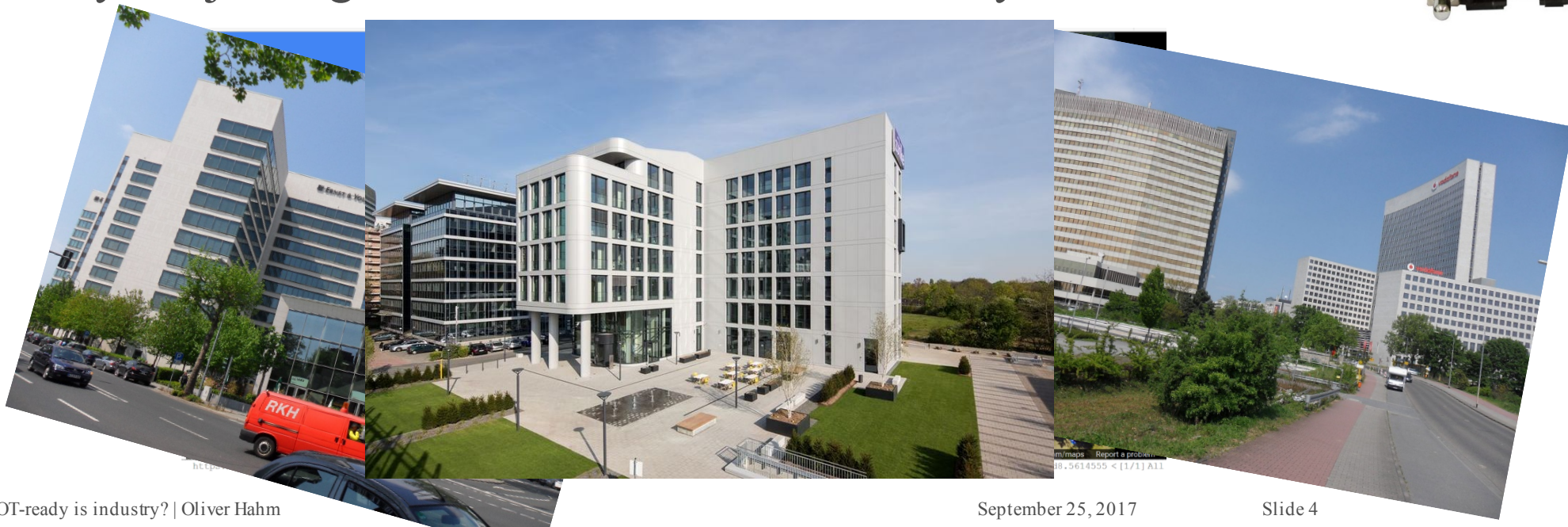
1. Hopes and Expectations
2. Industrial Reality
3. IIoT, quo vadis?

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Where do I come from?

- It all started (here) with wireless sensor networks in 2005
- 2009 to 2017: working in academia
- Enjoying open source development
- This year: joining the dark side -> back to industry



What happened meanwhile?



I E T F[®]

RFC4944

6LoWPAN



I E T F[®]

Work on WoT
(CoAP) started



THREAD



ARM[®]mbed[™]



2007



2010



RIOT



2014



2016

What does Zühlke do in IoT?



➤ Business consulting

- We explain how technologies change the world, and how they can improve existing products and services.

➤ Change Management

- We advice on process and teach new ways to work, especially around the product development cycle.

➤ Bespoke development

- We are innovative across industries, and develop hard- and software products, including end-to-end IoT solutions.

What did I expect? What did I fear?

- “Industry 4.0”
- Mature tools
- The pain of open source licenses in industry
- Established software/technologies:
 - Thread
 - Zephyr
 - Mbed
- My (not so) hidden agenda: teach industry about RIOT and FOSS in IoT

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Disappointments

- First disappointment: Where are all the IoT jobs? (Rather in Berlin startups than anywhere else in Germany.)
- Where is the Internet in IoT?
- Why are smart objects not smart?
- The current IIoT seems to look more like WSN + cloud.

Dunkels, Adam. "Full TCP/IP for 8-bit architectures." *Proceedings of the 1st international conference on Mobile systems, applications and services*. ACM, 2003.

Talking about RIOT

“IP-connectivity? Why?”

“Isn’t a operating system too much overhead?”

“Does RIOT support platform X?”

“We don’t need an operating system.”

Talking about IoT

SAAS



Data Analytics



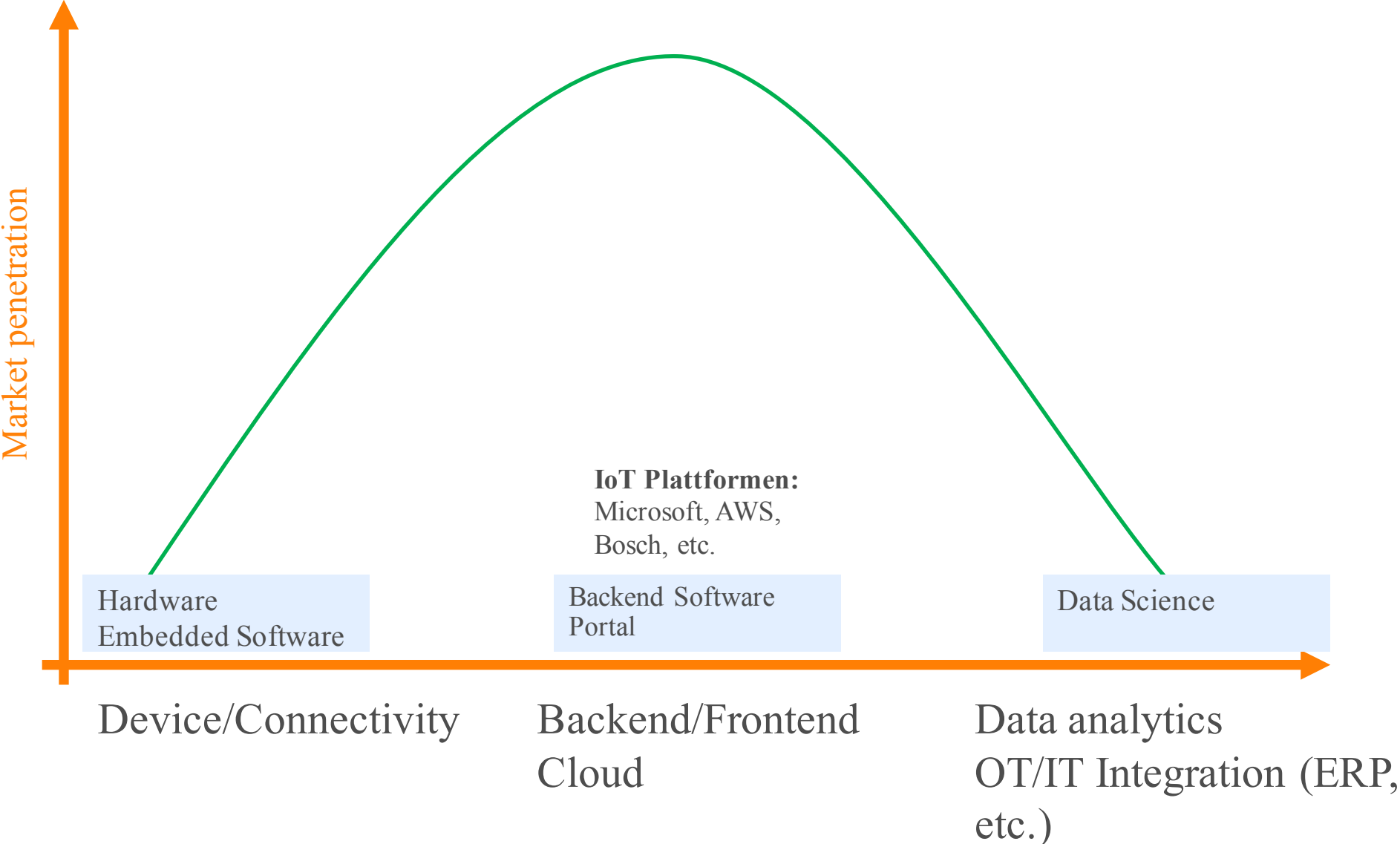
Digitalization



Deep Learning

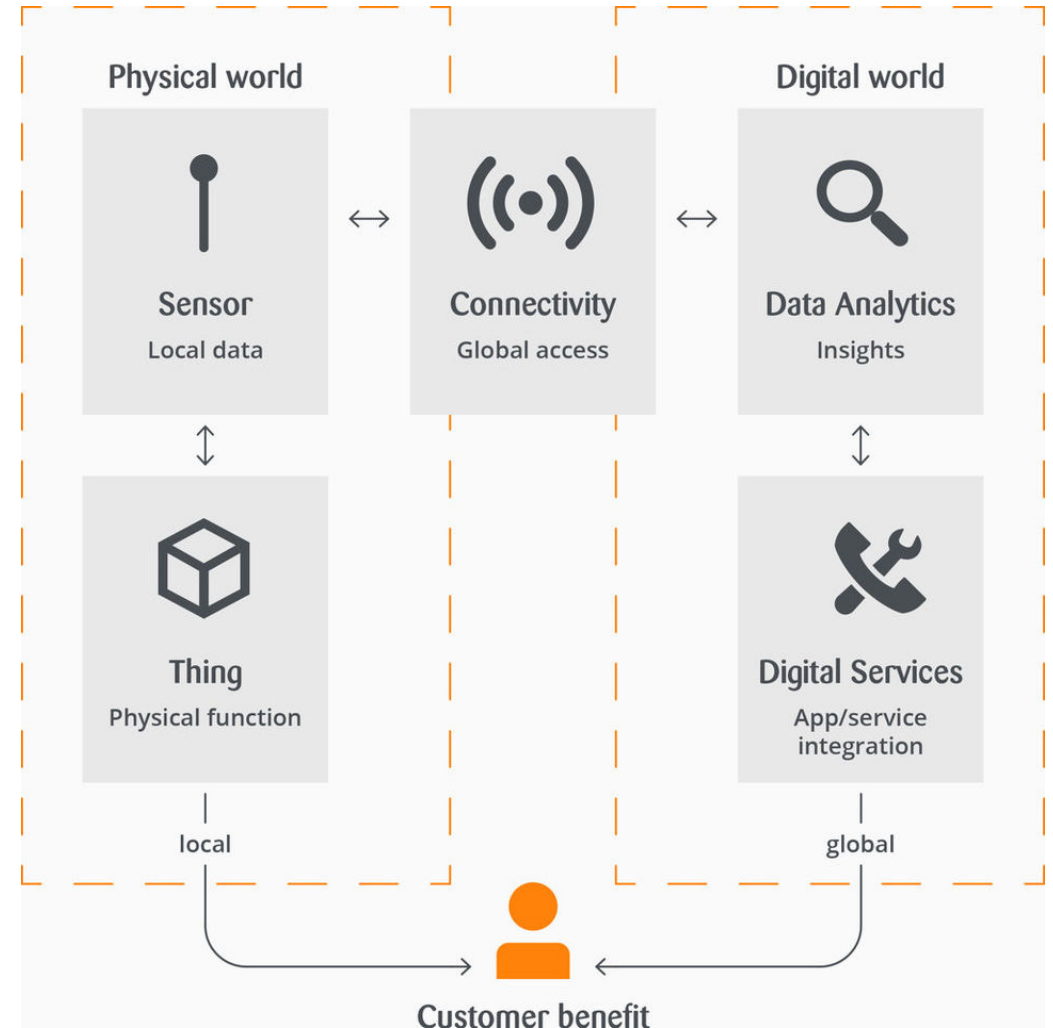


Where are we at?



The IoT Hype

- Companies want to IoT, but don't know why – or what IoT actually means.
- Very different stakeholders – and different disciplines.
- One example: a company integrates IP-connectivity into their water pumps – and asks us what to use it for.



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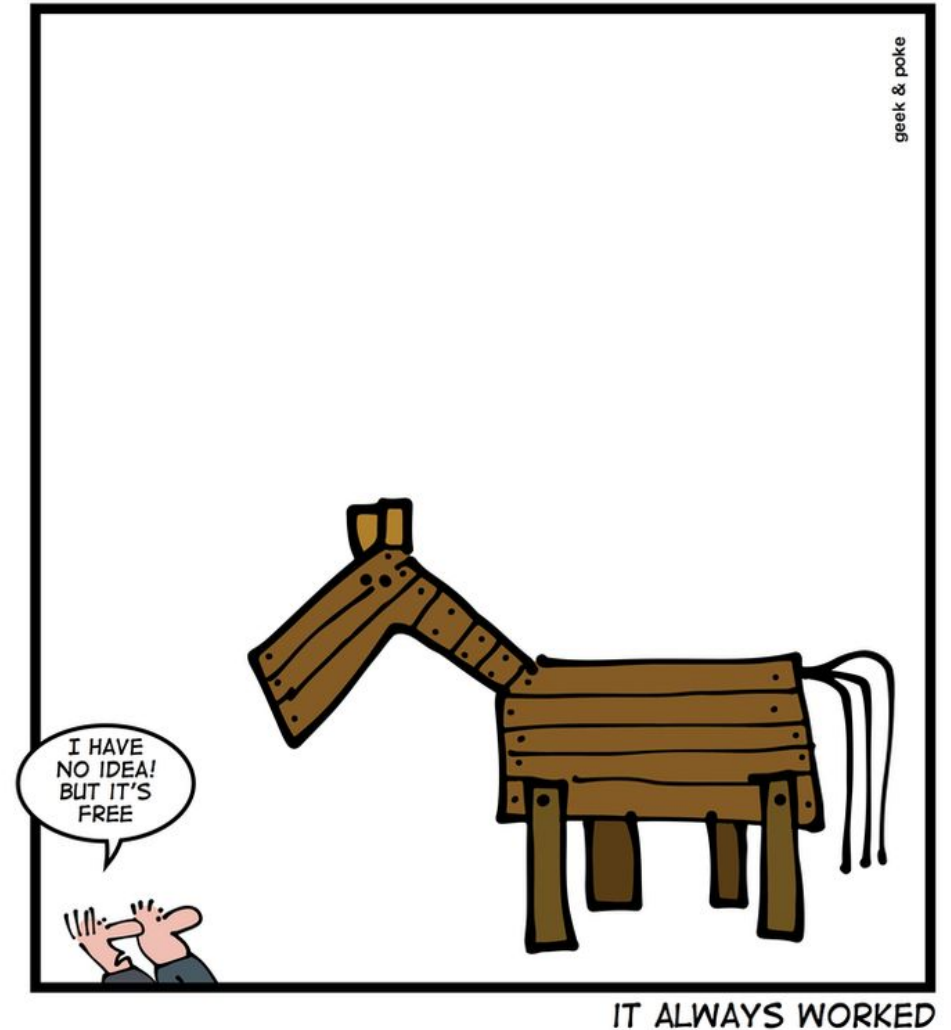
The go-to solution

- Unified software platform
- Unified network stack
- Default configurations
- End-to-end development



What can we do to get industry RIOT-ready?

- Work together
- Write portable code – even beyond the scope of low-end IoT hardware
- Use copyleft licenses
- Use standards





Thank you! Any questions?