IDM@EnBW
Identity- and Organizational-
Data-
Management

Industry/Experience report on Recent Trends in Cyber Economy and the Impact on OT ›

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Preface

About speaker and content

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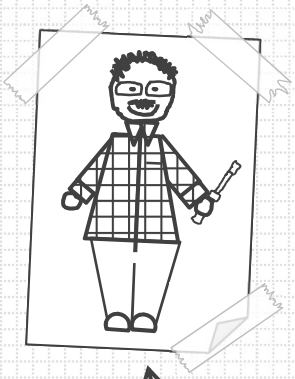
Industry/Experience report on
Recent Trends in Cyber Economy and the Impact on OT



Engineer

Who am I?

Name: Eleni Richter

Education: Wirtschaftsingenieur (University of Karlsruhe TH)

More than 18 years in different positions at EnBW: IT-security-manager, IT-consultant, IT-system designer, project-manager and architect

Contains eight sketches, models and examples on recent trends in IT and OT

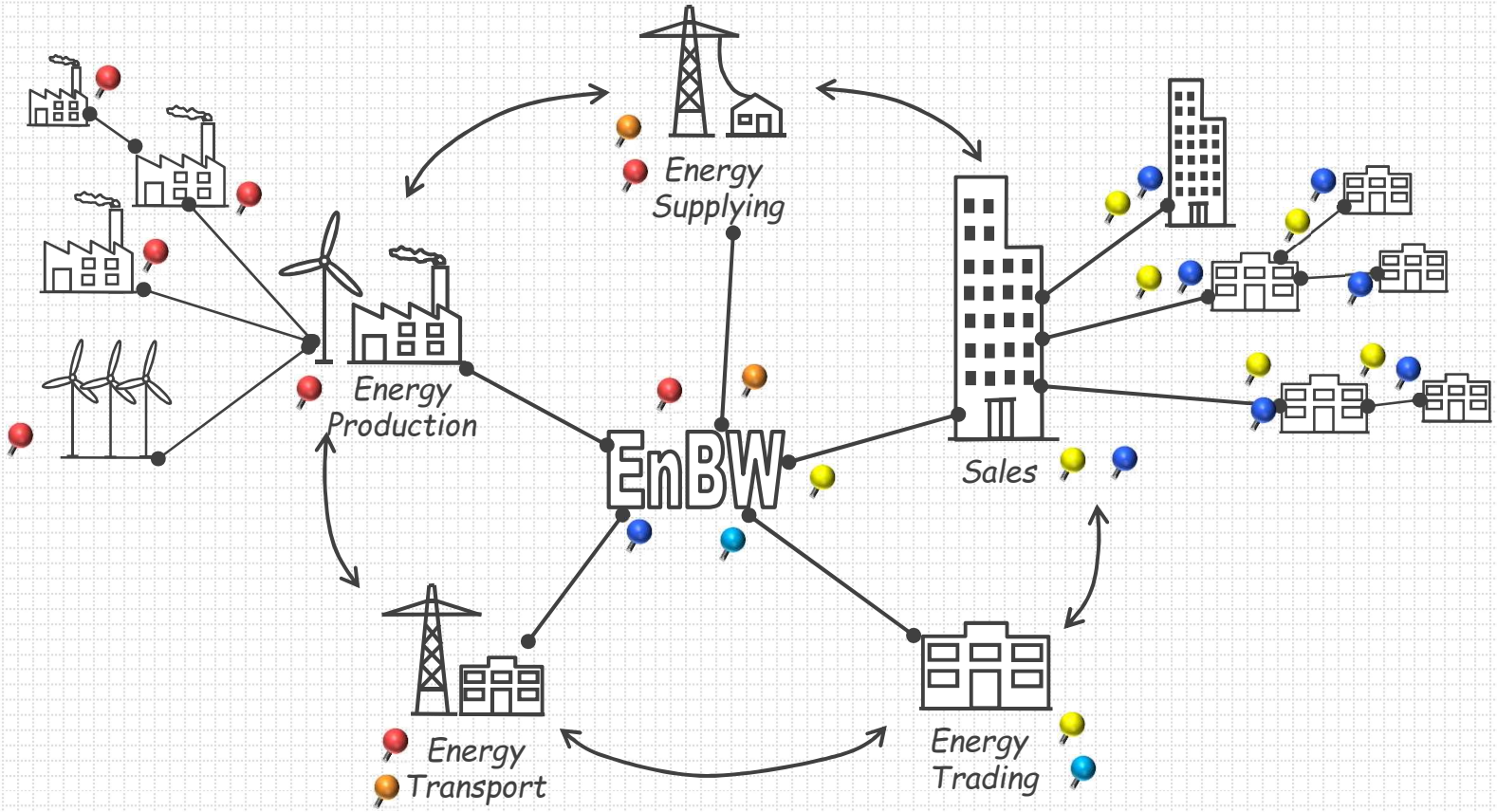
What am I doing right now?

IDM = Identity and Organizational Data Management

* *Collection of various data in the company*
* *Processing, aggregation, transformation, interlinking data*
* *Giving the data to Office IT and Operational IT for usage in on premise and in cloud scenarios*

SKETCH № 1

Typical functioning of an Energy Supplier

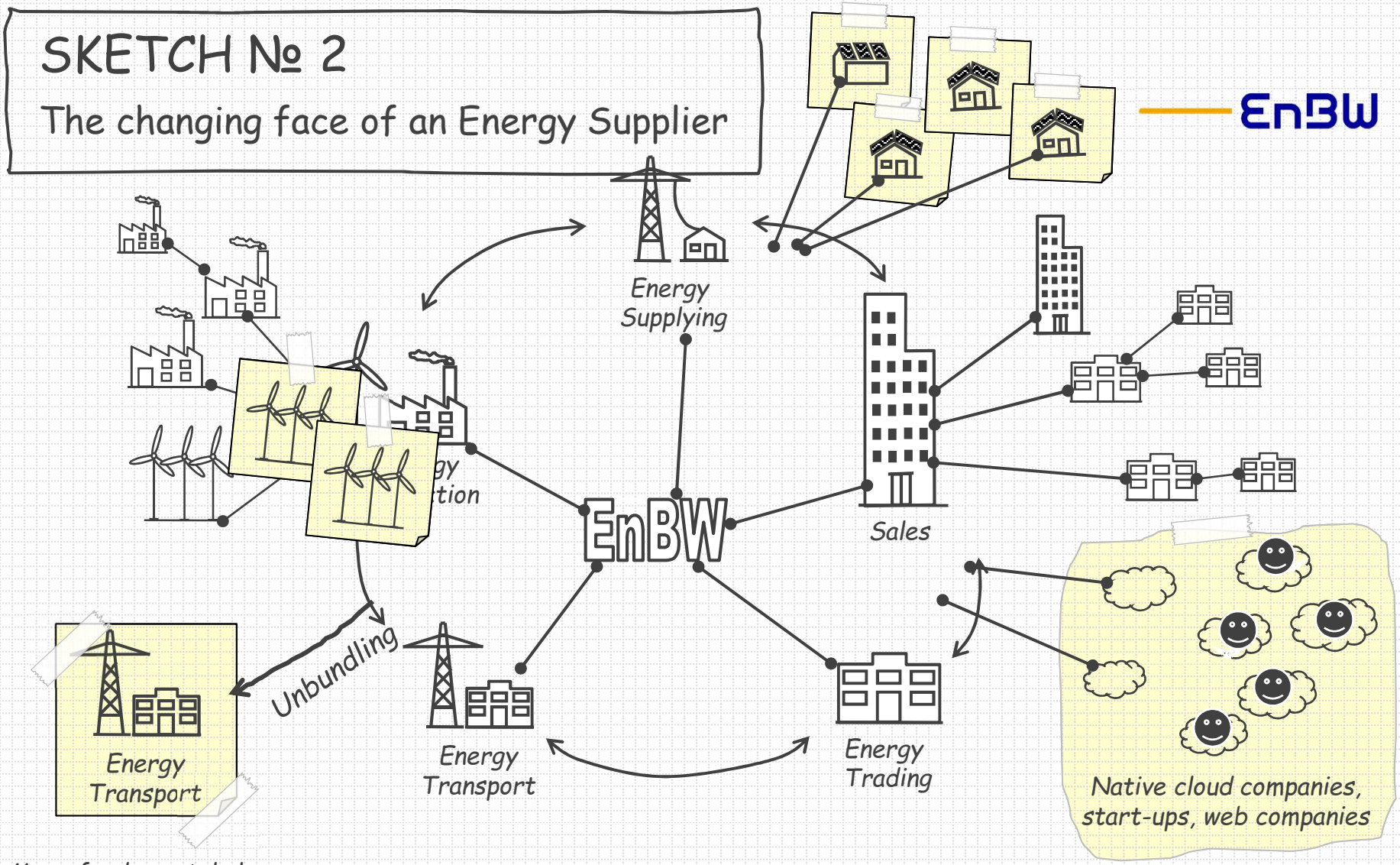


* Number three in German Energy Market.
* Five main business parts: widely different characteristics
  - Critical infrastructure
  - Grid, more decentralized
  - Depending on data and IT
  - Trading regulation
  - Distributed character, close to customer

} ... need to work together

SKETCH № 2

The changing face of an Energy Supplier



Many fundamental changes

- ** Liberalization of the energy market => unbundling*
- ** End of nuclear power usage => renewable energies => decentralization*
- ** Energy production on consumer side => more distributed micro-scenarios*
- ** Low market prices for enery => need for new business opportunities => aggressive competitors*

SKETCH № 3

Some Impacts of Digital Transformation at EnBW

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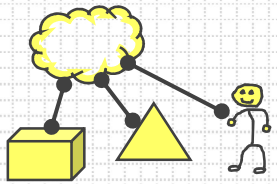
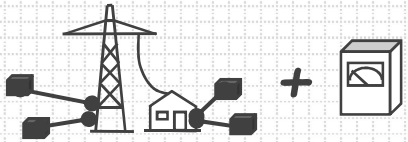
How-to-cloud (short version)



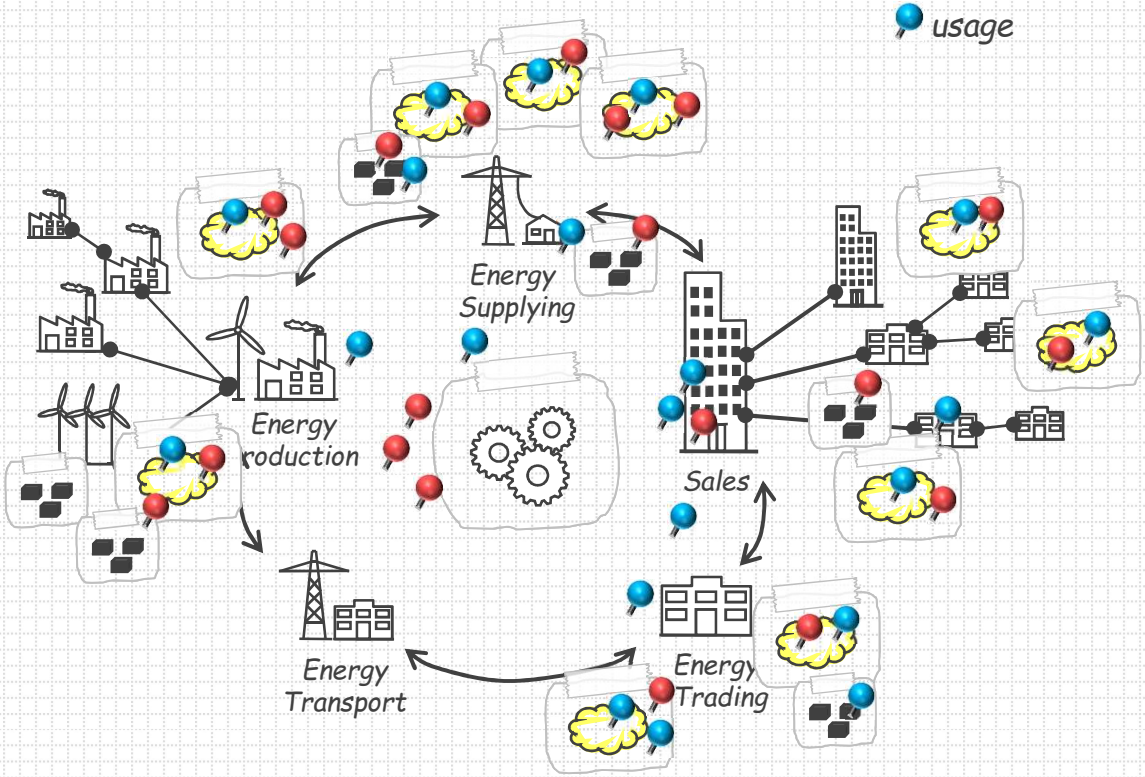
a. Rent or build a cloud-service
b. Configure or implement the solution
c. Manage customers, partners...
=> identities and relations

How-to-IoT (very short version)



a. Get interoperable IT-gadgets
b. Implement the solution, adapt OT
c. Manage identities and relations

Need for data and interaction



New business opportunity involving some cloud-service

New business opportunity involving some IoT, OT services or other smart technologies

OT = operational technology
IoT = internet of things

SKETCH № 4

Compliance for cloud applications

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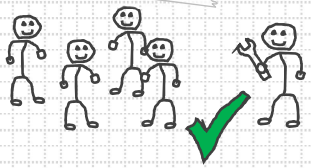
For each cloud service you have to…



Organize usage and administration

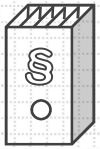
Check contract with cloud provider, online terms, …

Check IT-security

Check OT

New business opportunity involving some cloud- or IoT-service

Check information-security



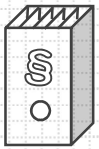
Review data protection

* *New GDPR*
* *Privacy by design, by default*

=> Breach will be expensive

Not much difference to compliance for on premise applications.

Check with works council



Check other compliance

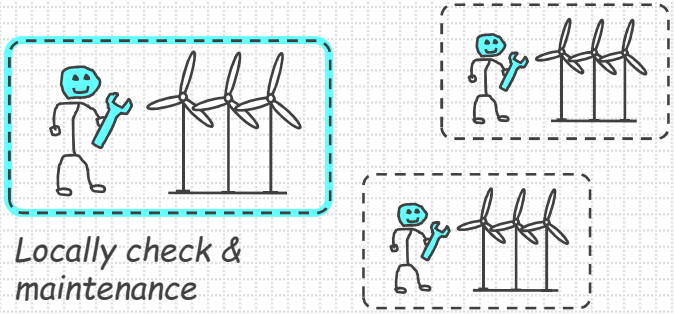
* *Sector specific compliance*
* *…*

Start-ups usually do not run the full compliance programm

SKETCH № 5

Is there any relevance for OT?

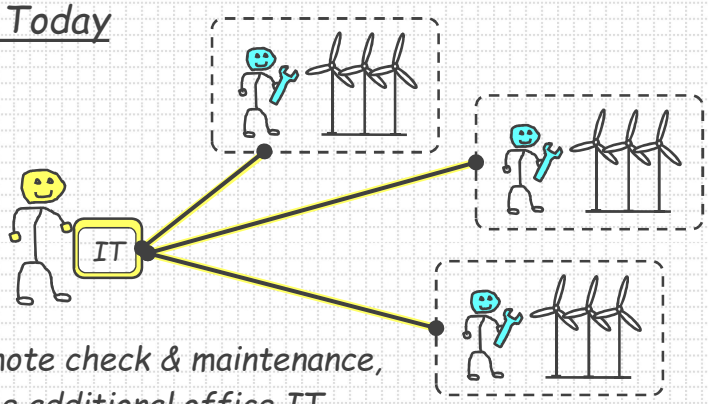
(a) Yesterday



Locally check & maintenance

Operational IT and office IT clearly separated.

(b) Today



Remote check & maintenance, some additional office IT

Office IT technologies get partly mixed into operational IT.

(c) Tomorrow

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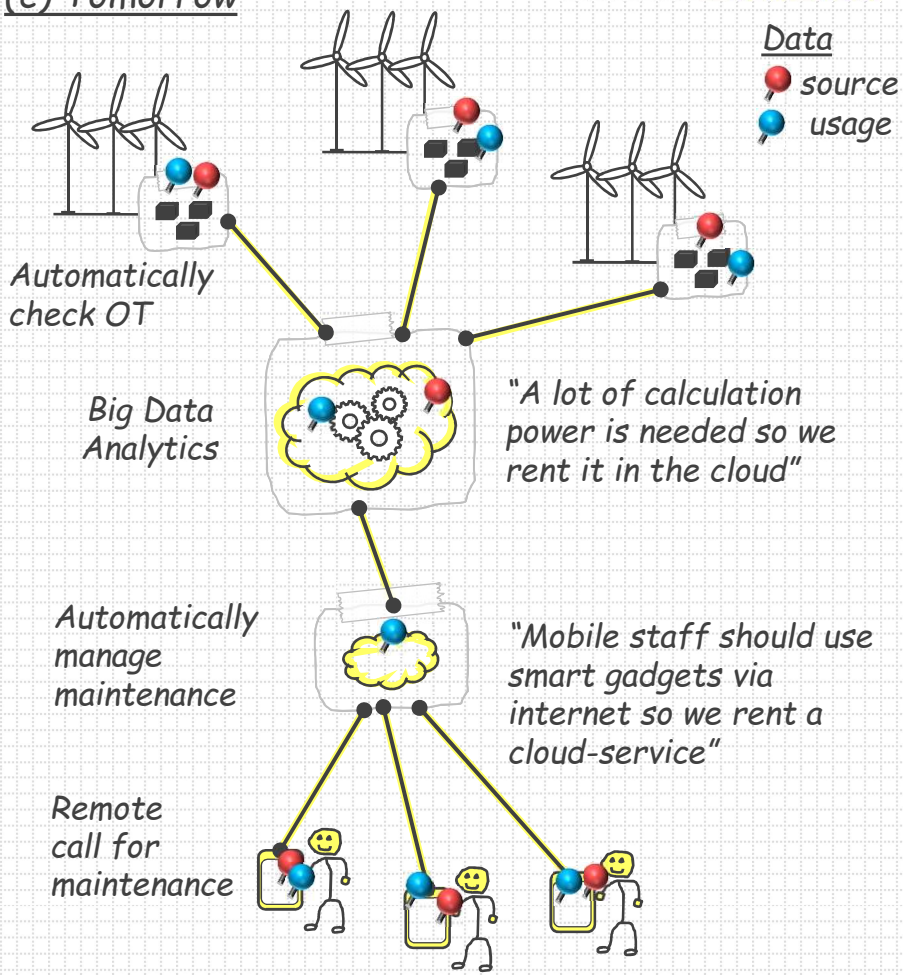

Maintenance and change IT/OT-data

SKETCH № 6

Some thoughts on future prospects and widely divergent aims

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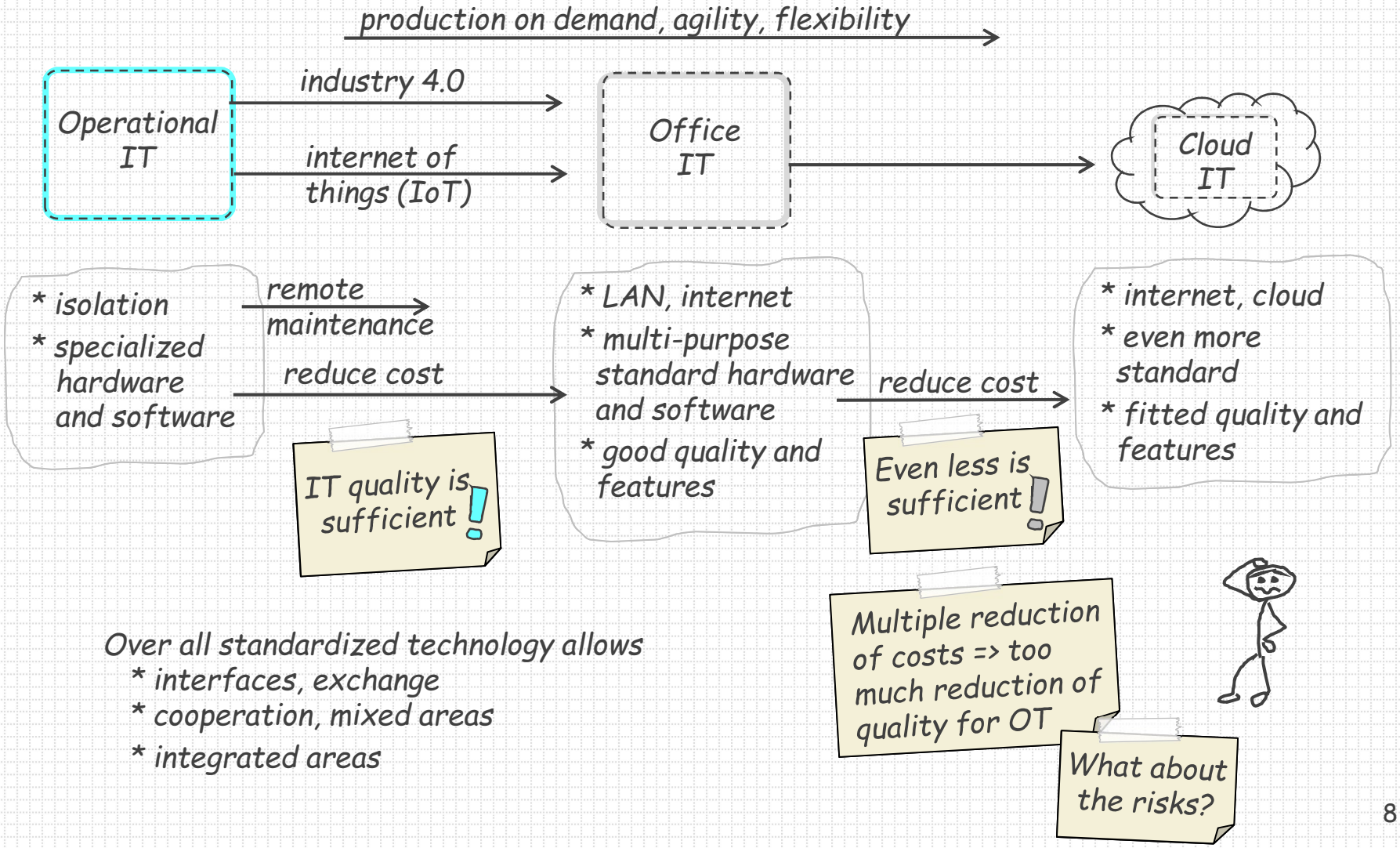
Pulling and pushing factors



Over all standardized technology allows

- *interfaces, exchange*
- *cooperation, mixed areas*
- *integrated areas*

SKETCH № 7 Comparison of on-premise and cloud-systems: a risk based approach

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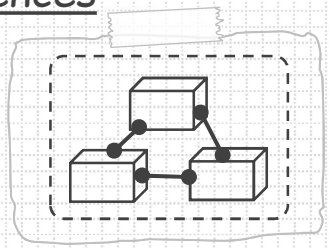
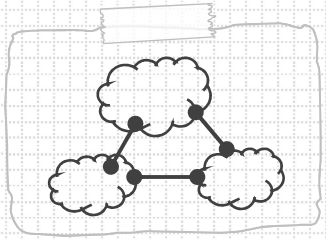
my *Top five differences*





(1) Location	** in-place, private* ** less distribution possible*	** far away, through public space* ** more distributed*
(2) Changes	** fully under your control*	** cloud-provider driven*
(3) Environment	** reliability up to you*	** not completely reliable ex definition (internet)*

Risk = Damage x Probability

(4) More possibilities to do things wrong

$$\text{Probability} = \frac{\text{favourable cases}}{\text{whole number of cases possible}}$$

(5) More publicity if you do things wrong

=> More measurements concerning security, robustness & resilience are necessary

=> Demand for different skills for your operating staff

SKETCH № 8 Finding a suitable risk-model for your cloud-business

Our solution

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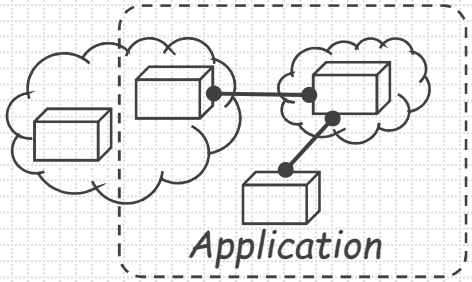
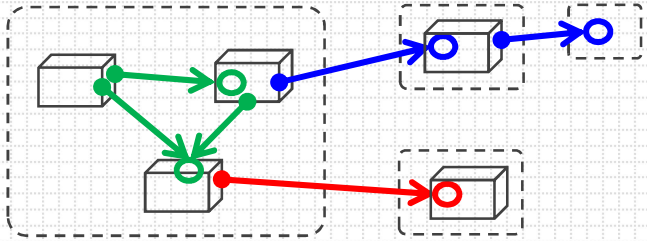
(1) Determine system boundary



Application:
Technical and organizational determined system

(2) Interaction

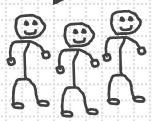


local effect stay local
limited effect cooperation with partner
general effect general rules apply

(3) Responsibilty

Responsible Manager

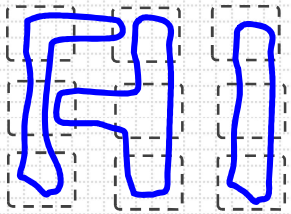
* Knows his system and the boundary
* Knows interaction
* Organizes jobs and tasks



(4) Rules for important general domains

Metering Data

Accounting Data



IDM

Some criteria for importance:
* compliance
* expensive
* critical process

Organize some governance for really important domains which have general effects

Final Word

Summary

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** Cloud-services are important enablers for your business. We consider this to be unstoppable and irreversible. We need to arrange us in a multi-cloud situation.*

** The internet environment is quite unsuitable for OT: unpredictable changes, distributed, including failure, errors and security issues as frauds and attacks.*

** A lot of measurement and engineering is necessary to run a stable and secure business.*

** A risk based model is the right way to identify the important parts. A possible result of a risk analysis could be that you don't want to run something as a cloud service any more.*