VSR | EDU

Current Trends in Web Engineering

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Fakultät für Informatik

Verteilte und selbstorganisierende Rechnersysteme

TECHNISCHE UNIVERSITÄT CHEMNITZ

(Social) **Web** (Engineering)(Science)

> **"The Web is all about connecting people!"**
>
> **Tim Berners-Lee**

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Advanced… what?

- This is an **introduction** to **advanced Web Engineering concepts** with a dedicated focus on Social Web and Web Science aspects

- Prerequisites
  - ▶ Ideally have deeper knowledge of RN, XML, EVS, SVS, SSE, CWA
  - ▶ Interested in learning latest development aspects
  - ▶ Students need to engage in different activities

- We are continously updating all modules – parts of this lecture
  - ▶ Moved from CWA to SMWS to Trends in Web Engineering
  - ▶ Extend other lectures, such as EVS, SVS, XML, SSE
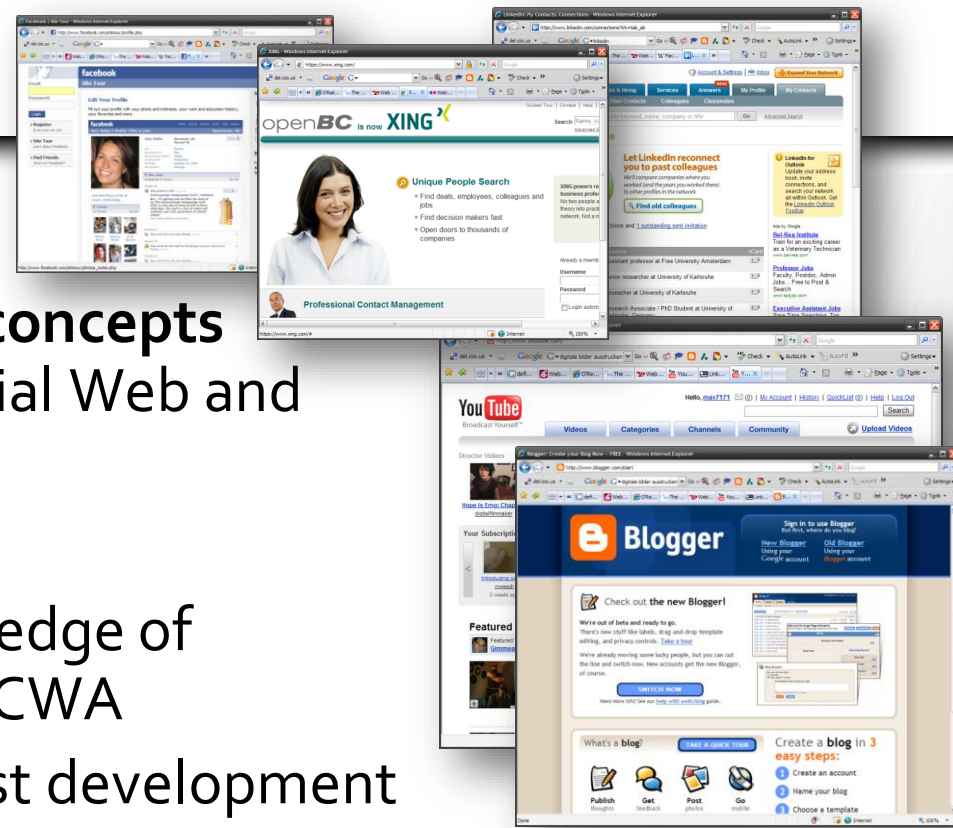
Lecture

- Type of event: Lecture
- Principal Lecturer:　　Prof. Dr.-Ing. M. Gaedke
- Tutor: N.N.
- Place and Time:
  - ► Lecture
    Tuesday, 17:15-18:45 o'clock, room 1/367A (New: A10.367.1)
  - ► Exercise
    Monday, 15:30 - 17:00, room 1/367A (New: A10.367.1)
    alternative form, will be announced separately

- SWS: 2 + 2

- **All Exams will be in WRITTEN FORM**
  - ► **Based on Faculty decision** even though your Prüfungs-
    /Studienordnung might still show oral exam

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What happened to AVS, SMWS, etc?

■ The name changed to reflect the core of the lecture!

■ In other words:

► The exams for AVS will be provided.

► The exams for SMWS will be provided.

► THEY are all called Current Trends in Web Engineering from now on.

■ So, this module can be used instead of AVS or SMWS – but not in addition.

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Further Information

- **Literature**
    - ► There is NO course textbook
    - ► However, there are different books, magazines, papers, Web-Sites that cover parts of the course
    - ► References to Further Readings will be given each lecture
- **In addition**
    - ► Web Site for this lecture will provide the data
    - ► You can download the slides there
    - ► We will have one problem to solve and develop
    - ► We will actively use social networks!

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New Guiding Element

NEW: This semester, we will start increasing the use of Standards and de-facto (industry-relevant) standards from Standards organisations, NGOs, companies, political bodies etc. as guiding elements and source for content – so you will be prepared in the future where to look for updates and how to deal with them!

These include, but are not limited to e.g.:

- International Standardization Organization (ISO) – https://www.iso.org/
- Internet Engineering Task Force (IETF) – http://www.ietf.org
- Institute of Electrical and Electronics Engineers (IEEE) – https://www.ieee.org/
- World Wide Web Consortium (W3C) – http://www.w3.org
- Object Management Group (OMG) – http://www.omg.org
- Project Management Institute (PMI) – http://www.pmi.org
- Scrum Alliance – https://www.scrumalliance.org
- European Union (EU)
  - ▶ http://www.europa.eu
  - ▶ http://www.eugdpr.org
- United Kingdom (UK) – sdf sdf https://www.gov.uk/service-manual
- Companies and services, like
  - ▶ Amazon - Lambda: https://aws.amazon.com/lambda/
  - ▶ Google - Cloud Functions: https://cloud.google.com/functions/
  - ▶ Microsoft - Azure Functions: https://azure.microsoft.com/en-us/services/functions/
  - ▶ IBM - OpenWhisk: https://www.ibm.com/cloud-computing/bluemix/openwhisk

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Further Information

- **Website of the professorship**
  - ☐ http://vsr.informatik.tu-chemnitz.de/
- **Website of the lecture**
  - ☐ http://vsr.informatik.tu-chemnitz.de/edu/2018/

- **Follow me on Twitter:**
  - ☐ http://twitter.com/gaedke
- **Like us on Facebook:**
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Expectations...

- We believe/expect that learning will be easier, **if** you become part of the Social Web, i.e. have an account with:
  - ▶ Facebook.com
  - ▶ Twitter.com
  - ▶ LinkedIn.com
  - ▶ Google+
  - ▶ And more...
- We **STRONGLY expect** that you read all assignments for the next lecture
  - ▶ In case you and many other haven't we can't run the lecture
- **This lecture will be a lot of work! Learn hard, enjoy later!**

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Social Web....

PLEASE feel free to post about anything DURING the lecture in Twitter. If you do, please use:

#myVSR

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Try new things & tell us what we should try

- Please, visit us – we are also on facebook, foursquare, youtube, g+ and more to come!

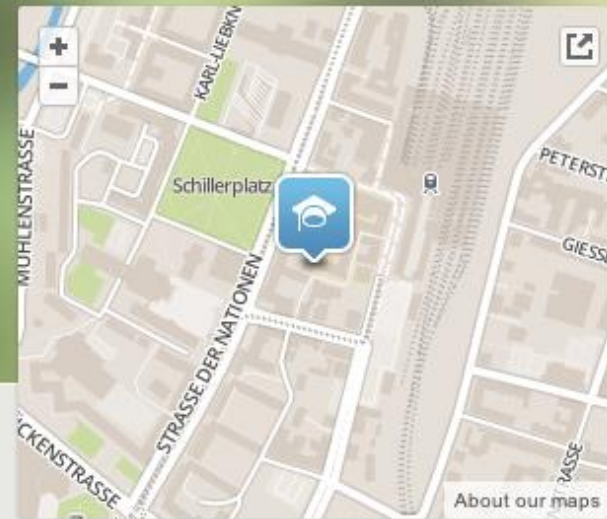# Lecture Outline

Current Trends in Web Engineeting
(Advanced Web Engineering Aspects)

1 **Development Trends**

2 **Social Web Interaction Trends**

3 **Advanced Technology Trends**

Agile Approaches	Principles & Platforms	Current trends 1
Design Thinking	Identity & more	Current trends 2
Lean Development	Frameworks & more	Current trends 3
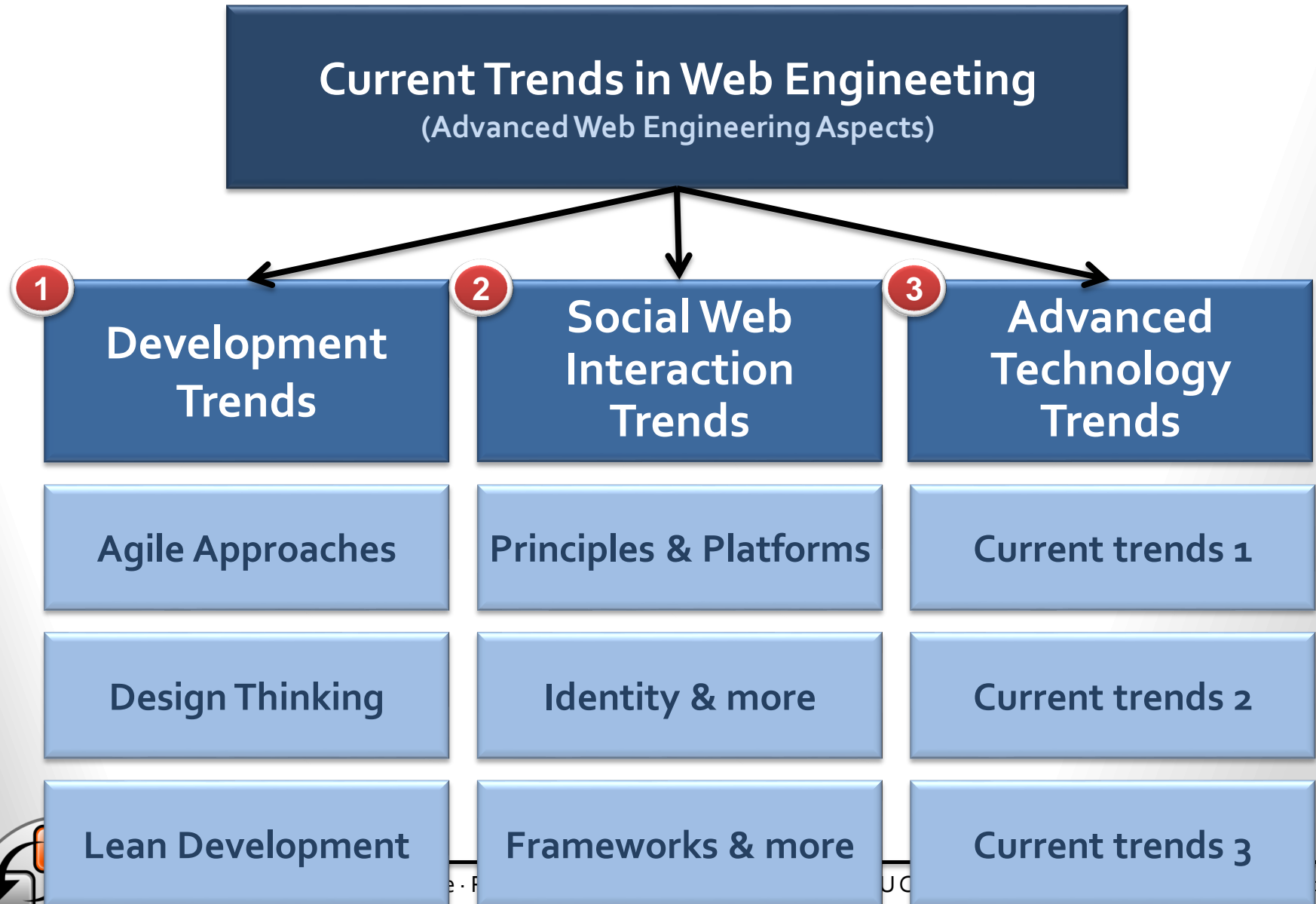
Lecture Style: Workshop

- We want to apply all topics during hands-on sessions
- We will design, build, and more
- We will use one single scenario that you all know from your own experience – and we will implement it during the course of this semester
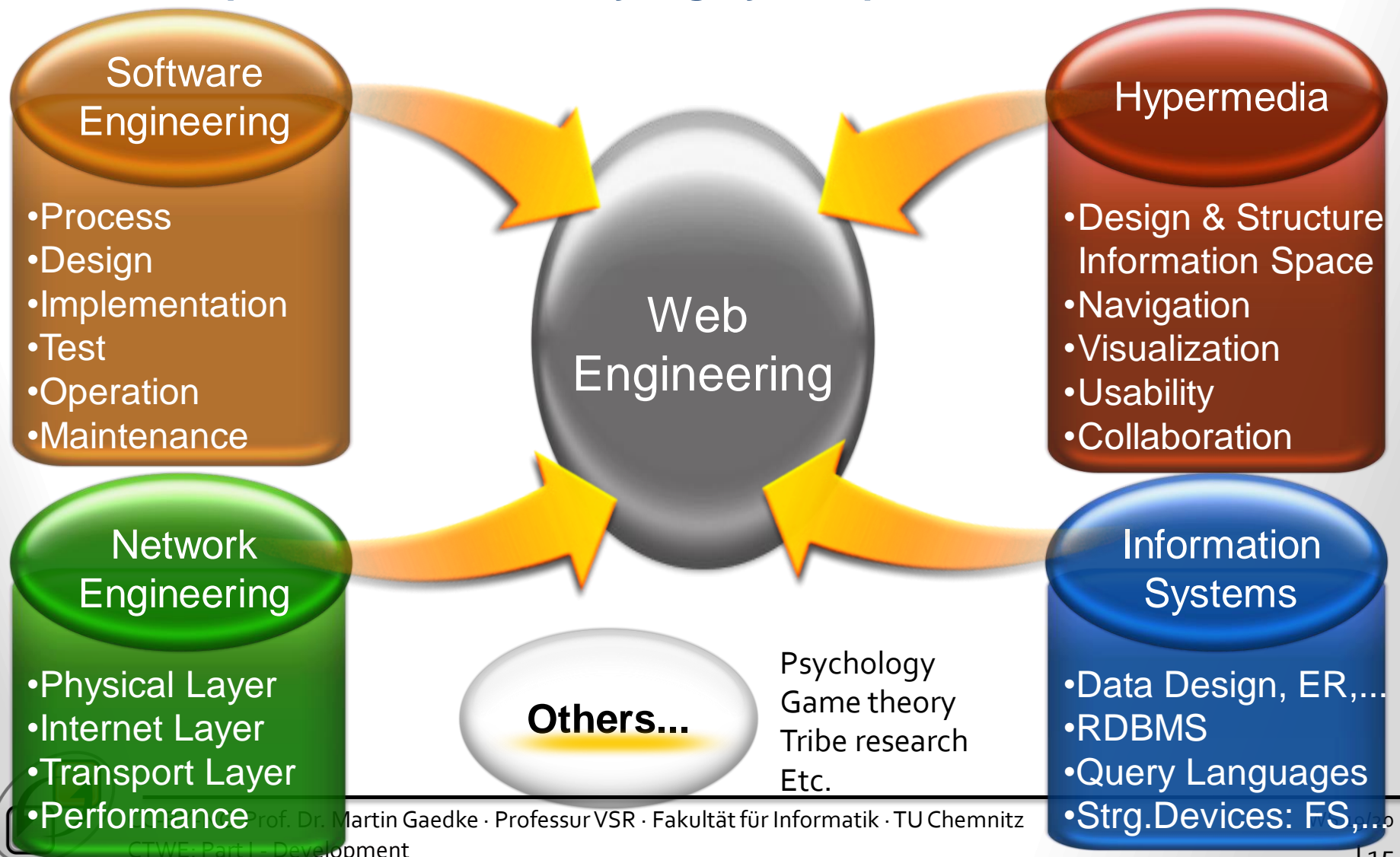
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PART I

■ Development

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CTWE: Part I - Development

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Web Engineering's Key Knowledge Areas

…for the production of usually highly complex solutions

Software Engineering

- Process
- Design
- Implementation
- Test
- Operation
- Maintenance

Network Engineering

- Physical Layer
- Internet Layer
- Transport Layer
- Performance

Web Engineering

Others...

Psychology
Game theory
Tribe research
Etc.

Hypermedia

- Design & Structure Information Space
- Navigation
- Visualization
- Usability
- Collaboration

Information Systems

- Data Design, ER,...
- RDBMS
- Query Languages
- Strg.Devices: FS,...

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CTWE: Part I · Development

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CHAPTER://1

■ Complex Problems

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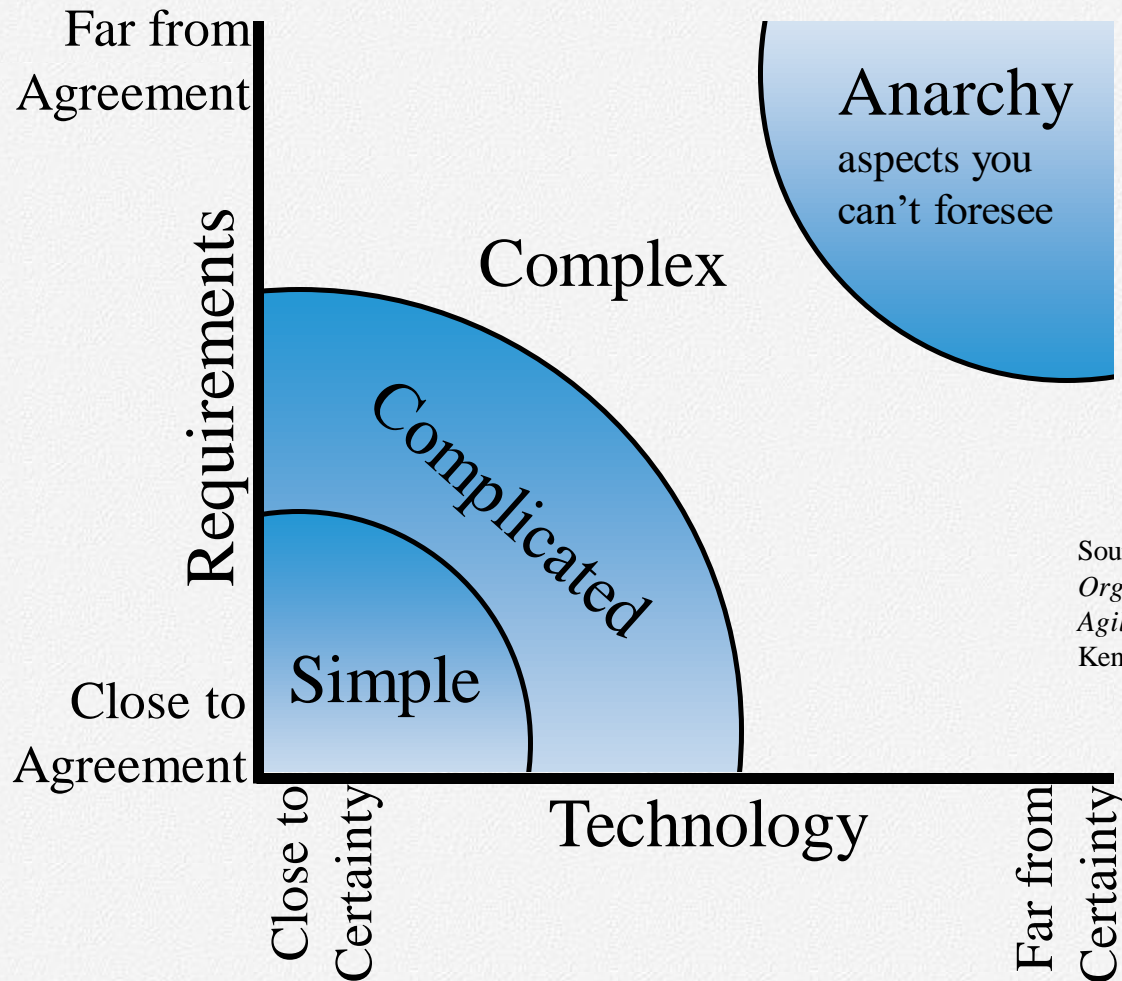
CTWE: Part I - Development ► Chapter 1: Complex Problems

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We focus on Complex Problems

Source: *Strategic Management and Organizational Dynamics* by Ralph Stacey in *Agile Software Development with Scrum* by Ken Schwaber and Mike Beedle.