VSR | EDU

Current Trends in Web Engineering

Current Trends in Web Engineering

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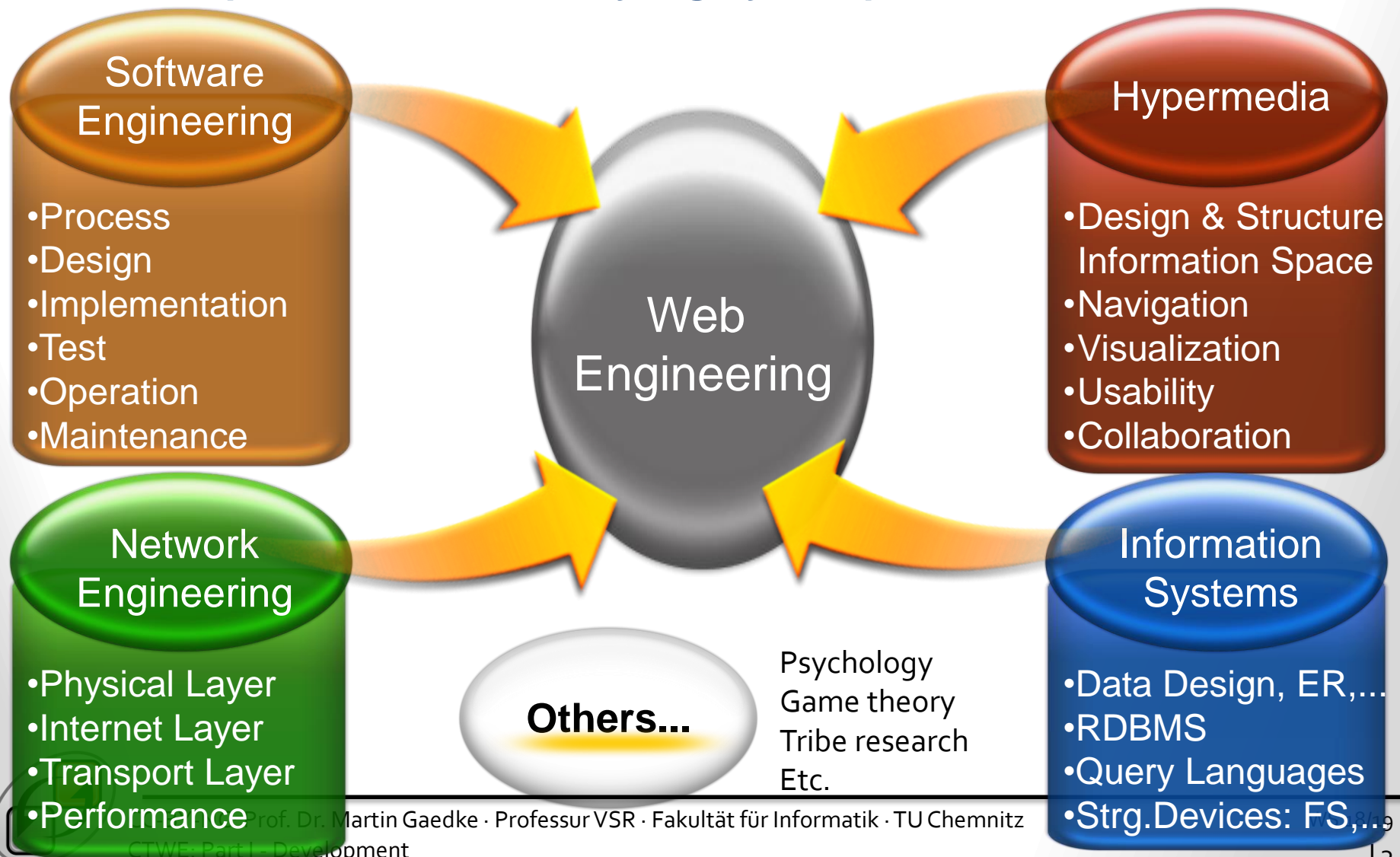Verteilte und selbstorganisierende Rechnersysteme

TECHNISCHE UNIVERSITÄT CHEMNITZ

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

Hypermedia

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

Web Engineering

Network Engineering

- Physical Layer
- Internet Layer
- Transport Layer
- Performance

Others...

Psychology
Game theory
Tribe research
Etc.

Information Systems

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

CHAPTER://1

■ Complex Problems

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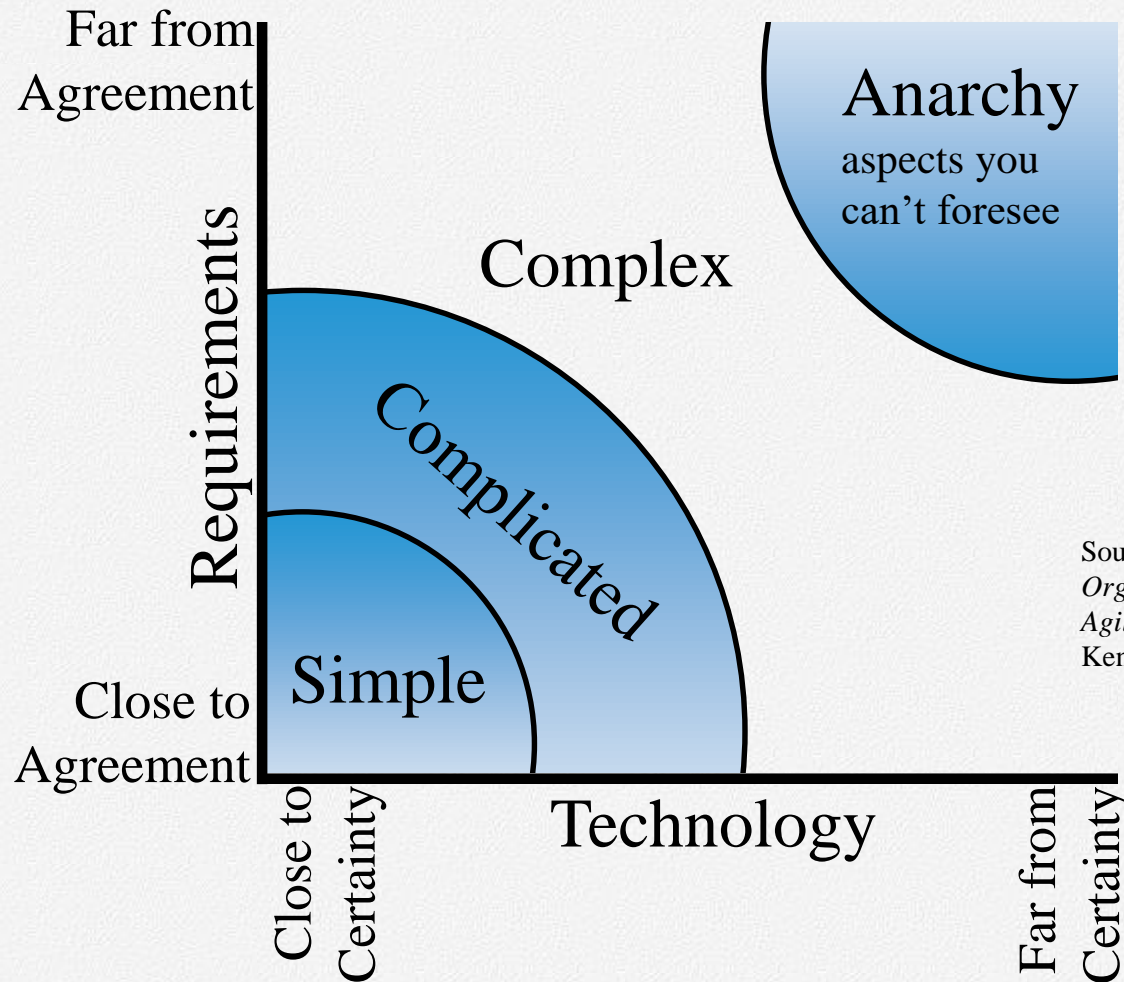CTWE: Part I - Development ▶ Chapter 1: Complex Problems
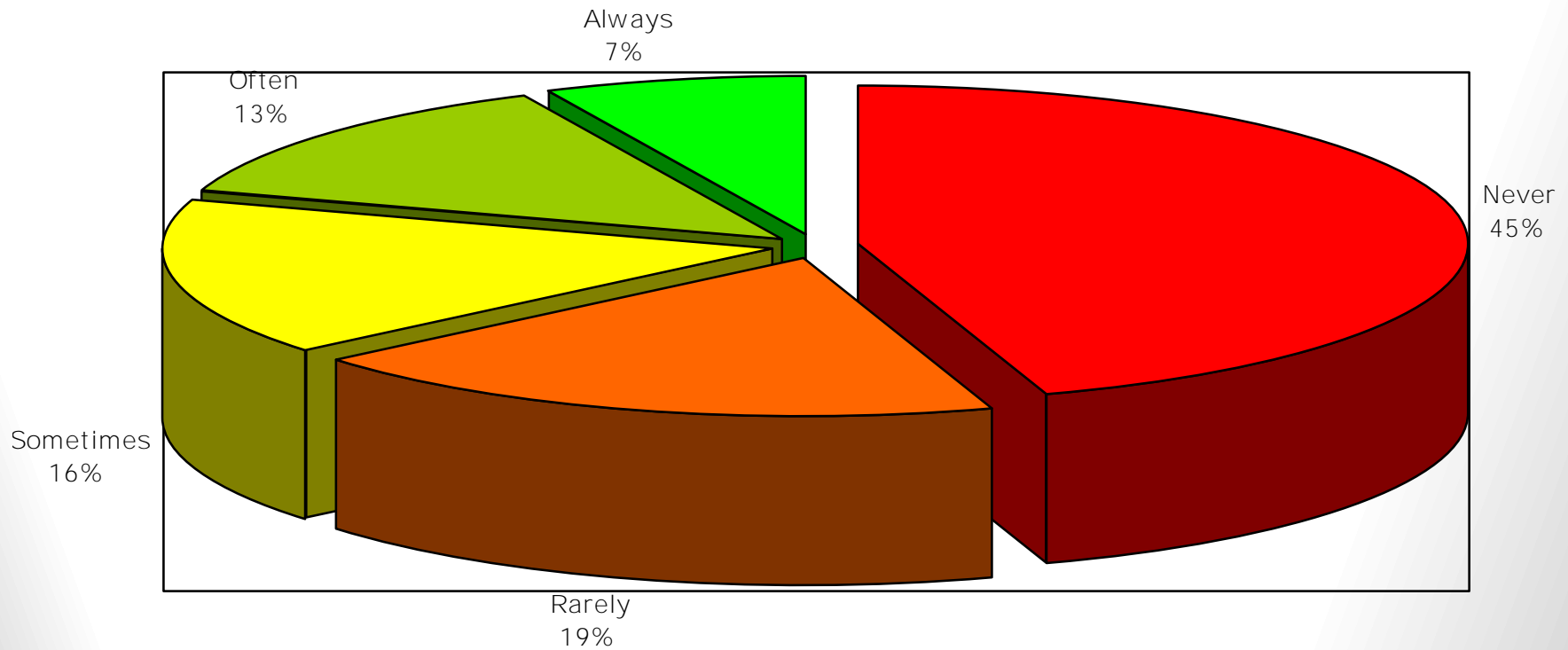
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We focus on Complex Problems

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

Planning: The Cost of Traditional BRUF

"Successful" Projects Still Have Significant Waste

Always
7%

Often
13%

Never
45%

Sometimes
16%

Rarely
19%

Source: Jim Johnson of the Standish Group, Keynote Speech XP 2002
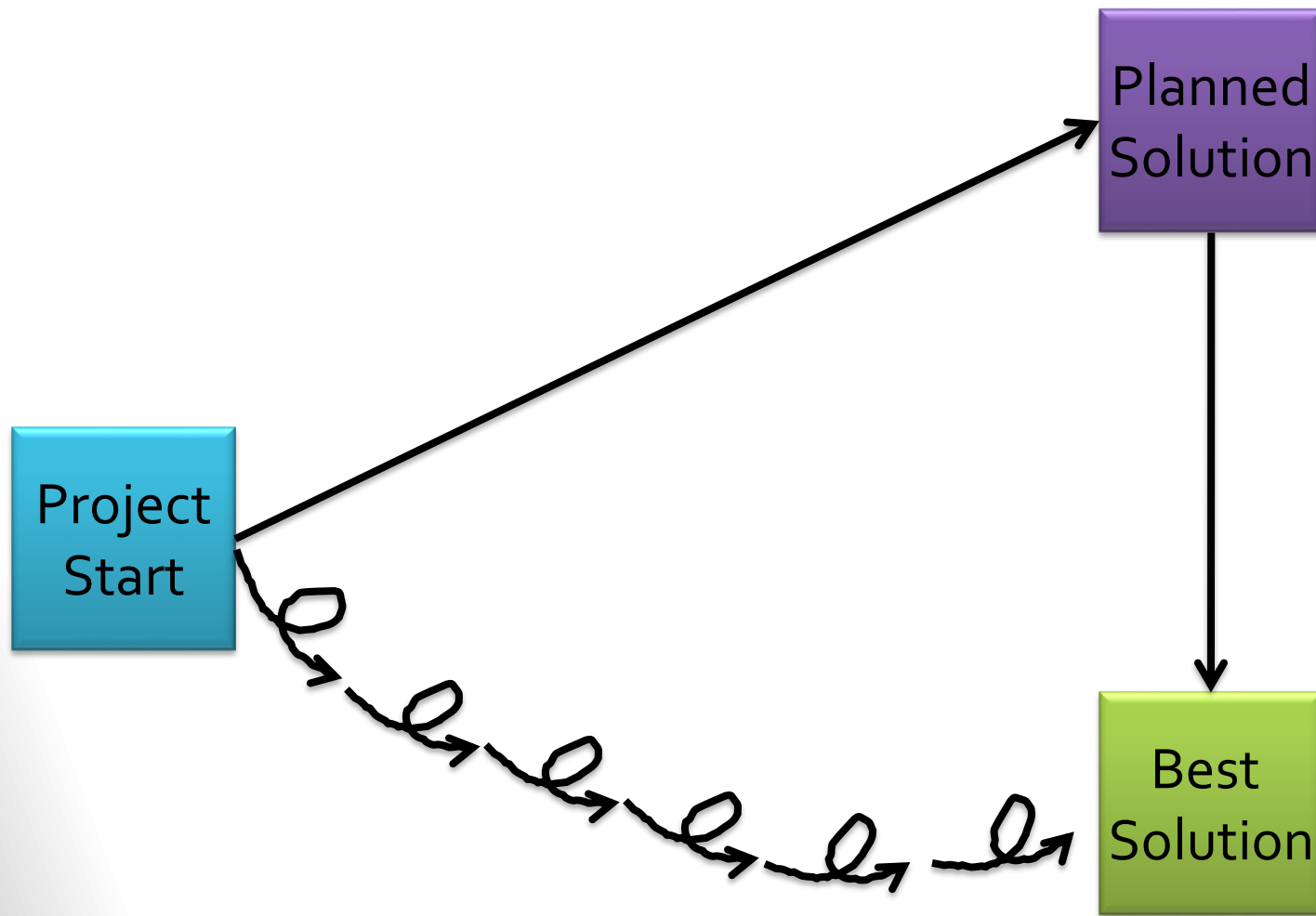
Idea: Agile Processes

- Reaction to the "bureaucratic" process models
  - ▶ Lightweight methodologies (now agile methodologies)
  - ▶ Too much process vs. no process
- Apply an iterative and evolutionary approach to development
- Examples
  - ▶ Scrum
  - ▶ Kanban

Iterations versus Planning

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Agile Manifesto

We value

- individuals and interactions
- working software

- customer collaboration
- responding to change

over

- processes and tools
- comprehensive documentation

- contract negotiation
- following a plan

For further information, cf.: http://agilemanifesto.org/

CHAPTER://2

- SCRUM

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Scrum in 100 words

- Scrum is an agile process that allows us to focus on delivering the highest business value in the shortest time.

- It allows us to rapidly and repeatedly inspect actual working software (every two weeks to one month).

- The business sets the priorities. Teams self-organize to determine the best way to deliver the highest priority features.

- Every two weeks to a month anyone can see real working software and decide to release it as is or continue to enhance it for another sprint.

Scrum origins

- **Jeff Sutherland**
  - ► Initial scrums at Easel Corp in 1993
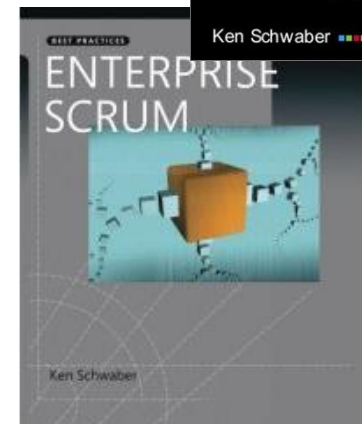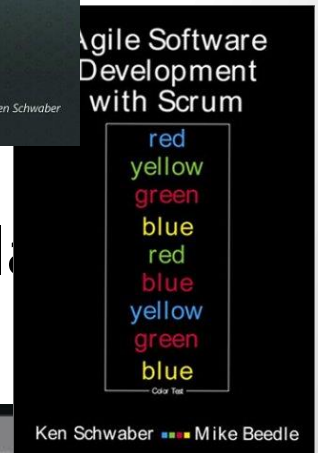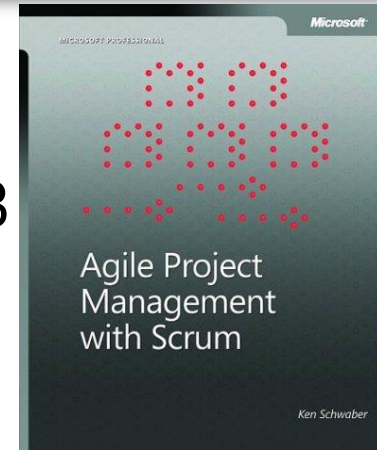 - ► IDX and 500+ people doing Scrum
- **Ken Schwaber**
  - ► ADM
  - ► Scrum presented at OOPSLA 96 with Sutherl[and]
  - ► Author of three books on Scrum
- **Mike Beedle**
  - ► Scrum patterns in PLOPD4
- **Ken Schwaber and Mike Cohn**
  - ► Co-founded Scrum Alliance in 2002, initially within the Agile Alliance

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Scrum has been used for:

- Commercial software
- In-house development
- Contract development
- Fixed-price projects
- Financial applications
- ISO 9001-certified applications
- Embedded systems
- 24x7 systems with 99.999% uptime requirements
- the Joint Strike Fighter

- Video game development
- FDA-approved, life-critical systems
- Satellite-control software
- Websites
- Handheld software
- Mobile phones
- Network switching applications
- ISV applications
- Some of the largest applications in use

Characteristics

- Self-organizing teams

- Product progresses in a series of month-long "sprints"

- Requirements are captured as items in a list of "product backlog"

- No specific engineering practices prescribed

- Uses generative rules to create an agile environment for delivering projects

- One of the "agile processes"