# The Future of Software – and of our Profession


Seminar Day **2**: Friday, July 11, 2014

## Introduction:

1. Time Management
2. Focus
3. Reviewer Ethics
4. Copyrights/Citations
5. Bullet Point Lists ☹

Time Management

# Time Management (1/2):

**Keep your time – never overrun your assigned slot!**

Bad solutions:

- Talking faster
- Skipping slides at the end

1. Planning: Maximum 1 Slide/Minute

2. Dry run: Do a realistic presentation

3. Planning: Have planned (!) buffer-slides

http://www.youtube.com/watch?v=idj-9PmX888

Time Management

# Time Management (2/2):

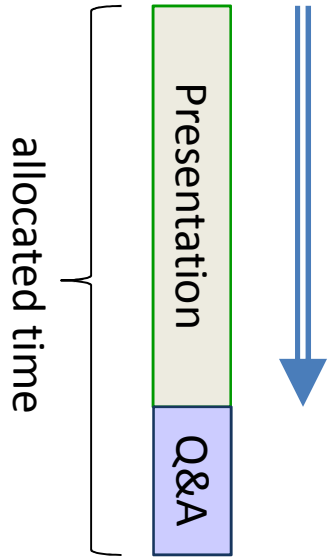
**Keep your time – never overrun your assigned slot!**

CAUTION:

- You may be delayed by questions!

4. Buffer-slides:

≈ 10% of total talk time

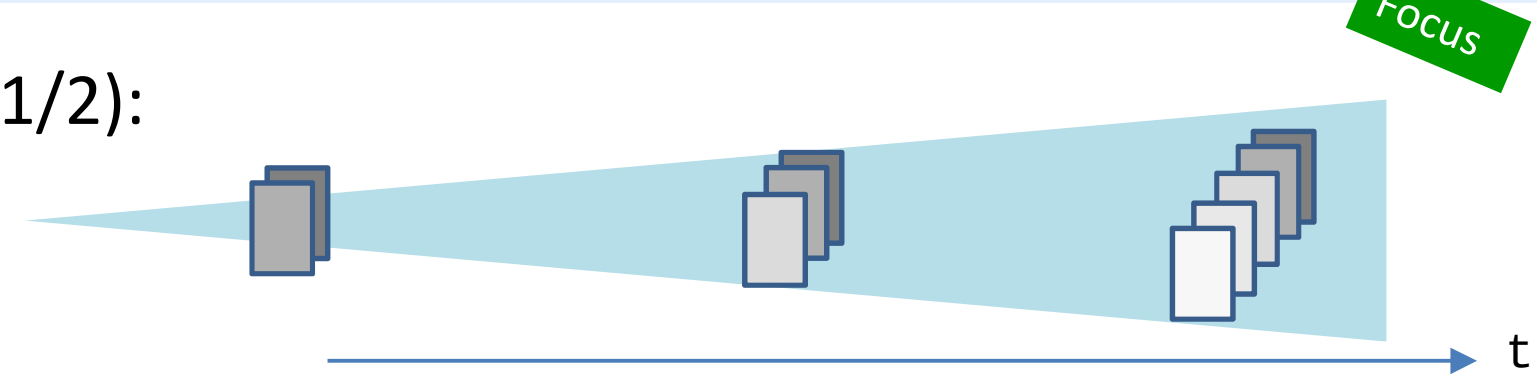



Strictly only allow questions related to the **correct understanding**

**NO** discussion
**NO** infighting

http://en.wikipedia.org/wiki/Referee

# Focus (1/2):




| Key statements | Where and how communicated in the paper | Clarity & impact satisfactory? |
|---|---|---|
| **Primary** key statement: | | |
| **1st secondary** key statement: | | |
| **2nd secondary** key statement: | | |
| **3rd secondary** key statement: | | |
| … is more adequate? | | |

Focus

# Focus (2/2):

| **Concept (Begriff)** | **Really necessary for the storyline of the paper?** |
|---|---|
| Concept (Begriff) 1: | |
| Concept (Begriff) 2: | |
| Concept (Begriff) 3: | |
| Concept (Begriff) 4: | |
| … etc. | |

Review

# Journal Review Template:

| | NO | possibly | YES | Comments |
|---|---|---|---|---|
| Is the paper a new, original contribution to the «Challenges and Impact of Software in 2025?» | | | √ | Estimation of the impact of modern search engines on work and life in 2025. Very original ideas and challenging storyline |
| If the reply to the question above is positive, is the paper of sufficiently wide interest to merit publication in an international journal? | | | √ | |
| Is the paper technically sound and free of errors of fact or logic? | | | √ | Excellent storyline, impressive conclusions |
| Are the objectives clear? | | | √ | Explicitly stated and fully delivered |
| Is the material clearly presented? | | | √ | |

Irene Hames: **Peer Review and Manuscript Management in Scientific Journals – *Guidelines for Good Practice***. BLACKWELL Publishing, Oxford, UK, 2008. ISBN 978-1-4051-3159-9

Reviewer Ethics

# Reviewer Ethics (1/2):

**Reviewers should:**

- ✓ Decline any review for which they feel not > 95% fit for (competence, time, …)
- ✓ Decline any review if there is a conflict of interest (similar work, …)
- ✓ Provide timely reviews (… otherwise the journal editor is in trouble ☹)
- ✓ Keep manuscript and names of authors confidential
- ✓ Provide a fair, substantiated, comprehensive review
- ✓ Deliver comprehensive, useful recommendations to author(s) and editor
- ✓ Report any suspicion of misconduct (illegal or unreferenced copying, …)

Enumeration → Bullet Point List **= ok**

Irene Hames: **Peer Review and Manuscript Management in Scientific Journals – *Guidelines for Good Practice***. Blackwell Publishing, Oxford, UK, 2007. ISBN 978-1-4051-3159-9

Reviewer Ethics

# Reviewer Ethics (2/2):

**Reviewers should NOT:**

- ✓ Attack or make any personal comments about the author(s)
- ✓ Agree to review a manuscript just to gain insight of it for personal benefit
- ✓ Use information in the manuscript for their own or other's benefit
- ✓ Contact anyone else with respect to the review
- ✓ Request that authors include citations to their own work
- ✓ Contact the authors directly about any manuscript they review

Irene Hames: **Peer Review and Manuscript Management in Scientific Journals – *Guidelines for Good Practice***. Blackwell Publishing, Oxford, UK, 2007. ISBN 978-1-4051-3159-9

Copyright/Citations


https://www.musicgateway.net

In some cases it is necessary to state the **copyright**.

a) The copyright defines the owner of the document or figure and has wide **legal implications**, such as the protection of *intellectual property rights* (of more importance in industry, less in academia).

b) Giving proper credit (by including the source) is a question of fairness (- but may also have legal implications!)

Copyright/Citations

# Time Management (2/2):

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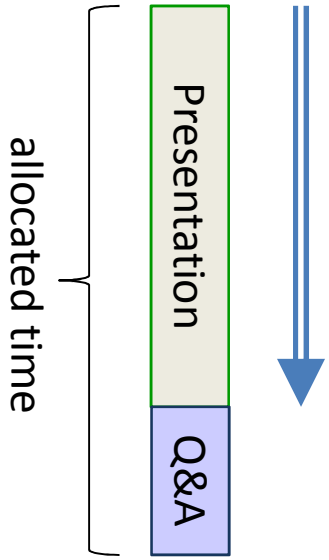


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Bullet Point Lists

# Bullet Point Lists:

Presenting a bullet point list on a slide
and reading it to the audience is boring and tedious

(Bad) example:

**The tool integration problem:**

- Point-to-point integrations don't scale
  - Creation new integrations is unpredictable
- Monocultures lock you in
  - Past choices restrict present action and future vision
- Maintenance, management, and change costs go up over time
  - Ongoing and unexpected cost drain resources

# Challenges and Impact of Software in 2025

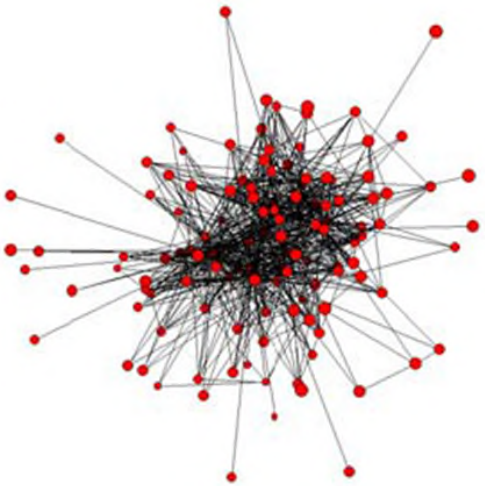
Bullet Point Li

Point-to-point integrations don't scale

Monocultures lock you in

Maintenance, management, and change cost go up over time

http://www.orie.cornell.edu



http://www.npr.org

http://nordagrar.com

Creating new integrations is unpredictable

Past choices restrict present action and future vision

Ongoing and unexpected cost drain resources

Bullet Point Lists ← Pictorial Representation: **EXERCISE**

Bullet Point Lists

## Cognitive Computing:

- **Cognitive technologies help us to understand and manage complexity**
  - Cognitive technologies help us to understand the world around us and to make better decisions and live more successfully and sustainably
- **Cognitive computing is a new area and will transform the way we live and work just as the computing revolution has transformed the human landscape over the past half century**
  - The creation of the new era «cognitive computing» is a monumental endeavour, which needs the effort of companies, universities, users, regulators etc.
- **This will become the era of «smart machines» with unprecedented capabilities**
  - Some capabilities are already visible: Winner of chessworld championship, winner of *jeopardy!* etc.

John E. Kelly, Steve Hamm: **Smart Machines – *IBM's Watson and the Era of Cognitive Computing*.** Columbia University Press, New York, 2013. ISBN 978-0-231-16856-5.

Bullet Point Lists

## Cognitive Computing:

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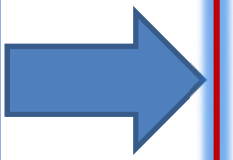

**Exercise:**

Convert to a didactically convincing pictorial representation

*Optional* return (for comments) to: frank.j.furrer@bluewin.ch

Feedback 2nd Round

+ Improved storylines
+ Good state of the art descriptions
+ Better structure
+ Better conclusions

- Paper length (>)
- Some unnecessary concepts introduced
- Some loss of consistency
- Still improvable structure of the papers (titles)

# Presentations

## 2nd Seminar Day

# Seminar Day 2: Time Schedule

| Name | Presentation (15 min) | Feedback (10 min) |
|---|---|---|
| *Introduction* | *09:00 – 09:30* | |
| Schön, Hendrik | 09:30 – 09:45 | 09:45 – 09:55 |
| Rausch, Jonas | 09:55 – 10:10 | 10:10 – 10:20 |
| Peschel, Paul | 10:20 – 10:35 | 10:35 – 10:45 |
| *Lehrevaluation* | *10:45 – 10:55* | |
| Break | 10:55 – 11:15 | |
| Korger, Christina | 11:15 - 11:30 | 11:30 – 11:40 |
| Gollasch, David | 11:40 – 11:55 | 11:55 – 12:05 |
| Bierzynski, Kay | 12:05 – 12:20 | 12:20 – 12:30 |
| Final Words | 12:30 – 13:00 | |

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| *Introduction* | *09:00 – 09:30* | |
| Schön, Hendrik | 09:30 – 09:45 | 09:45 – 09:55 |
| Rausch, Jonas | 09:55 – 10:10 | 10:10 – 10:20 |
| Peschel, Paul | 10:20 – 10:35 | 10:35 – 10:45 |
| *Lehrevaluation* | *10:45 – 10:55* | |
| Break | 10:55 – 11:15 | |
| Korger, Christina | 11:15 - 11:30 | 11:30 – 11:40 |
| Gollasch, David | 11:40 – 11:55 | 11:55 – 12:05 |
| Bierzynski, Kay | 12:05 – 12:20 | 12:20 – 12:30 |
| Final Words | 12:30 – 13:00 | |

Kilian Koeltzsch [ifsr]

# Presentation Assessments

Presentation Assessment

Participant: **Schön, Hendrik**

| | | | |
|---|---|---|---|
| **Storyline** | • Logical<br>• Consistent<br>• Attractive<br>• Clear | **Excellent** ☐<br>**Good** ☐<br>**Improvable** ☐ | √ |
| **Illustrations Pictures** | • Fitting/Adequate<br>• Granularity<br>• Power of Expression<br>• Support of Speaker | **Excellent** ☐<br>**Good** ☐<br>**Improvable** ☐ | √ |
| **Animation** | • Focussed (emphasizing the message of the slide)<br>• Speed<br>• Unnecessary effects<br>• Timing | **Excellent** ☐<br>**Good** ☐<br>**Improvable** ☐ | √ |
| **Density** | • Too dense (per slide or per time unit)<br>• Too slow (more material per slide or per time unit)<br>• Balance of slides<br>• Bullet point lists | **Excellent** ☐<br>**Good** ☐<br>**Improvable** ☐ | √ |
| **Delivery** | • Personal style<br>• Interaction with the audience<br>• Complementary speech/illustrations | **Excellent** ☐<br>**Good** ☐<br>**Improvable** ☐ | √ |

Presentation Assessment

Participant: **Rausch, Jonas**

| | | | |
|---|---|---|---|
| **Storyline** | • Logical<br>• Consistent<br>• Attractive<br>• Clear | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
| **Illustrations Pictures** | • Fitting/Adequate<br>• Granularity<br>• Power of Expression<br>• Support of Speaker | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
| **Animation** | • Focussed (emphasizing the message of the slide)<br>• Speed<br>• Unnecessary effects<br>• Timing | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
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| **Delivery** | • Personal style<br>• Interaction with the audience<br>• Complementary speech/illustrations | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |

Presentation Assessment

Participant: **Peschel, Paul**

| | | | |
|---|---|---|---|
| **Storyline** | • Logical<br>• Consistent<br>• Attractive<br>• Clear | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
| **Illustrations Pictures** | • Fitting/Adequate<br>• Granularity<br>• Power of Expression<br>• Support of Speaker | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
| **Animation** | • Focussed (emphasizing the message of the slide)<br>• Speed<br>• Unnecessary effects<br>• Timing | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
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Presentation Assessment

Participant: **Korger, Christina**

| | | | |
|---|---|---|---|
| **Storyline** | • Logical<br>• Consistent<br>• Attractive<br>• Clear | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
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Presentation Assessment

Participant: **Gollasch, David**

| | | | |
|---|---|---|---|
| **Storyline** | • Logical<br>• Consistent<br>• Attractive<br>• Clear | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
| **Illustrations Pictures** | • Fitting/Adequate<br>• Granularity<br>• Power of Expression<br>• Support of Speaker | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
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| **Delivery** | • Personal style<br>• Interaction with the audience<br>• Complementary speech/illustrations | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |

Presentation Assessment

Participant: **Bierzynski, Kay**

| | | | |
|---|---|---|---|
| **Storyline** | • Logical<br>• Consistent<br>• Attractive<br>• Clear | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
| **Illustrations Pictures** | • Fitting/Adequate<br>• Granularity<br>• Power of Expression<br>• Support of Speaker | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
| **Animation** | • Focussed (emphasizing the message of the slide)<br>• Speed<br>• Unnecessary effects<br>• Timing | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |
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| **Delivery** | • Personal style<br>• Interaction with the audience<br>• Complementary speech/illustrations | Excellent ☐<br>Good ☐<br>Improvable ☐ | √ |

# Final Words

In this Hauptseminar we trained:

**Hard Skills**
= Professional Competence

**Paper + Presentation:**
Research
Synthesis
Logical presentation
Form
Review process

**Soft Skills**
= Technical & Social Skills

**Paper + Presentation:**
Communication skills
Presentation skills
Interaction skills
Team work (reviewers)
Simplicity & beauty

**Skill**:

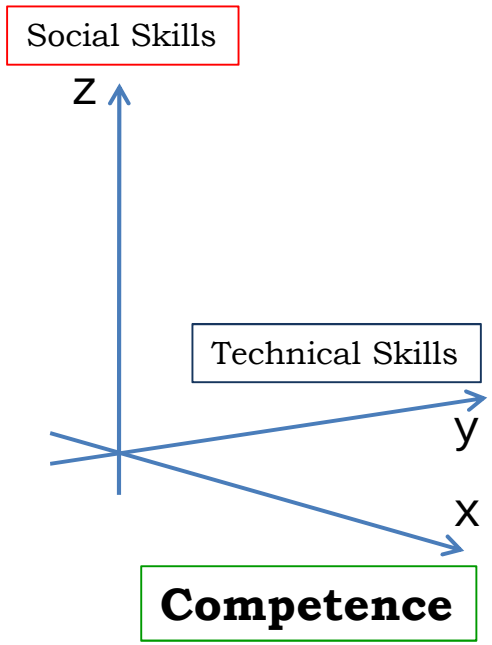
The ability to do something well

[The New Oxford Dictionary of English]

http://www.inman.com

# Software Architect: Skills Coordinate System

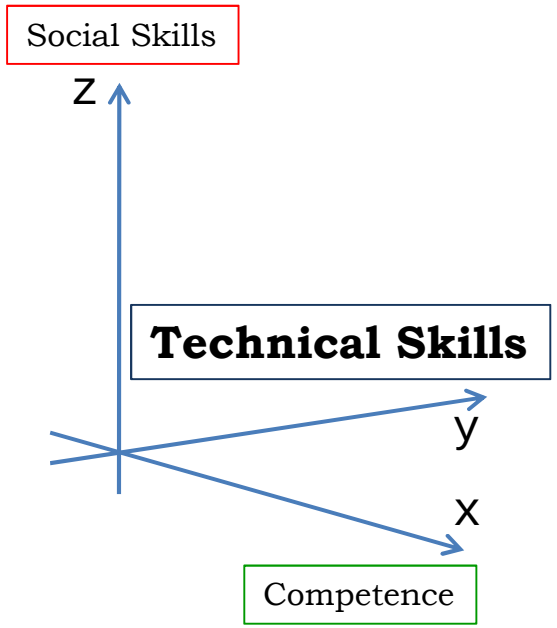
# Skills: **Competence**




**(Professional) Competence**

- IT (architecture) knowledge
- IT (practical) experience
- State-of-the-Art knowledge (broad, hardware, software, processes)
- Technology mastering (HW & SW)
- Business knowledge
- Innovation capability
- Vision

# Skills: **Technical Skills**



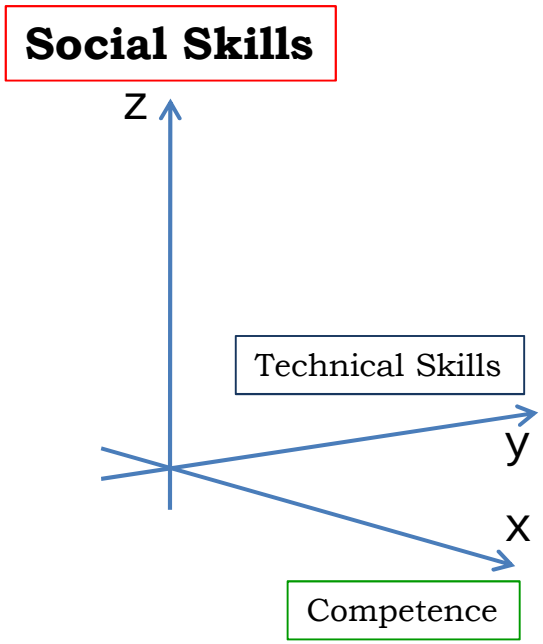

**Technical Skills**

- Communication skills (speech & writing)
- Presentation skills (oral, graphical & writing)
- Logical reasoning capability
- Efficiency & effectiveness
- Languages
- „Architecture Feel“ (Simplicity & beauty)

**Efficiency**:
Doing the things right

**Effectiveness**:
Doing the right things

# Skills: **Social Skills**



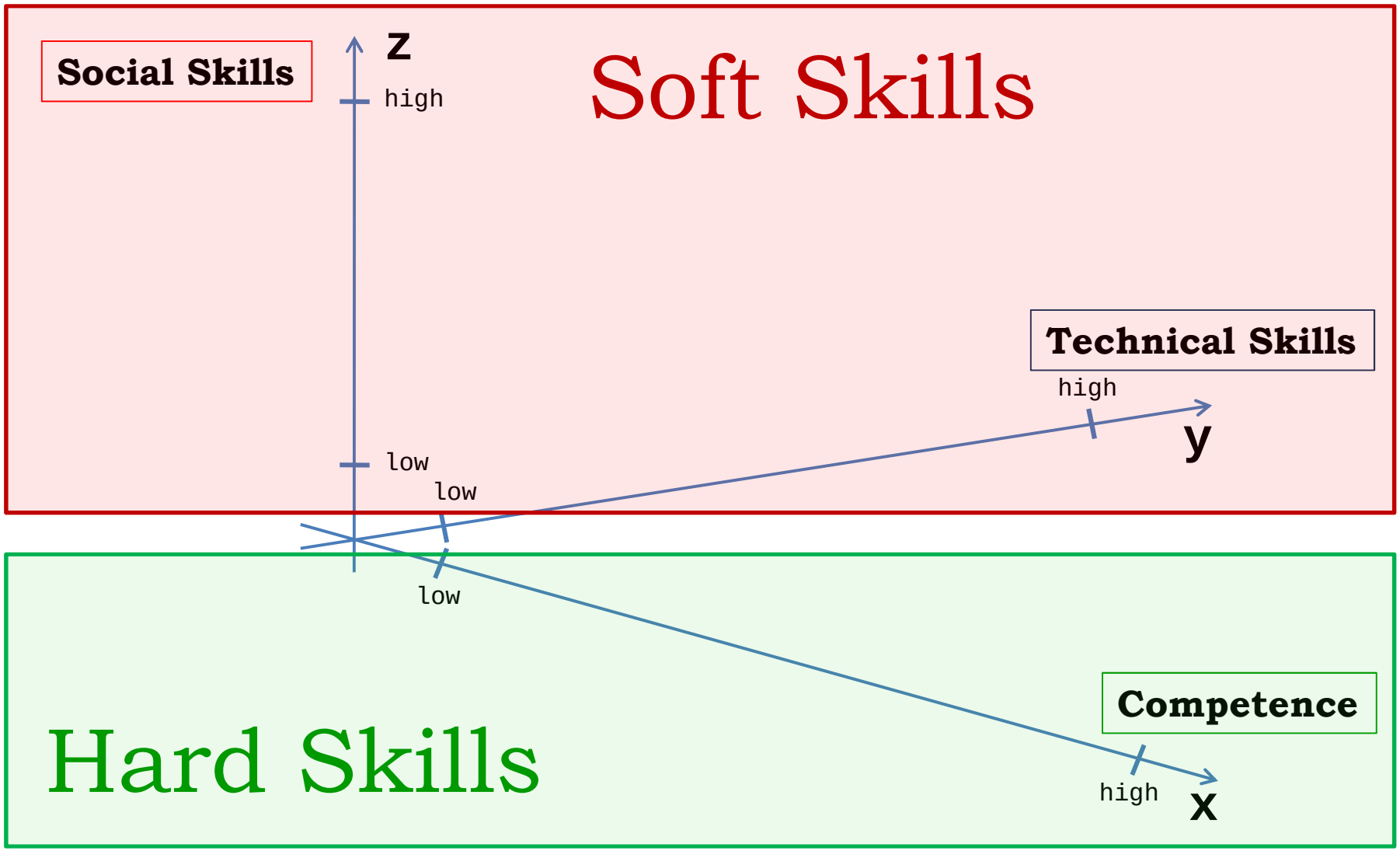

**Social Skills**

- Negotiation skills
- Persuasion capability
- People interaction capability
- Enthusiasm
- Leadership
- Life-long learning
- Socializing/Networking
- Team Work
- Honesty (Ethics)

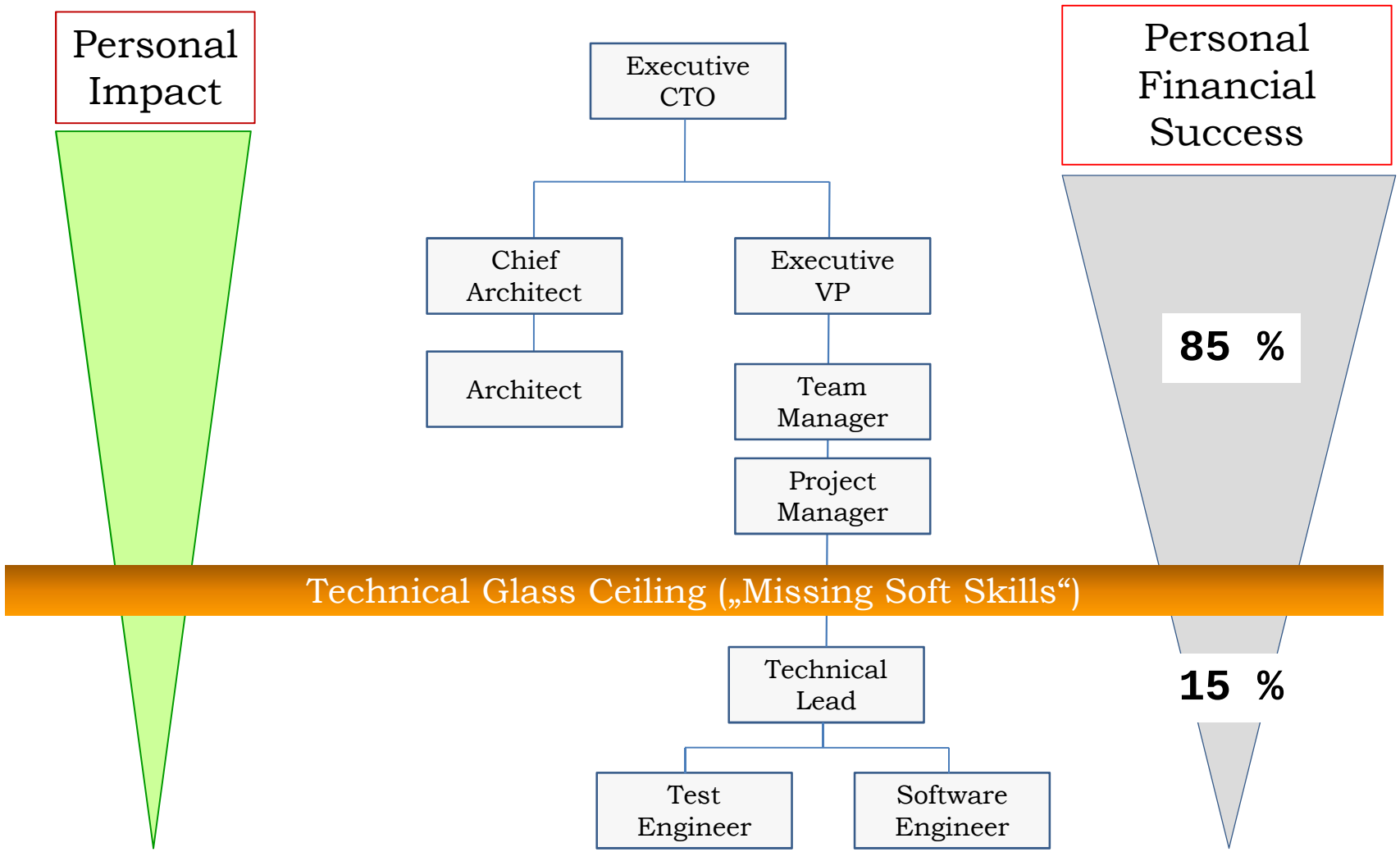
- Work-life balance

http://samingersoll.com/life-work-balance/

# Skills Coordinate System

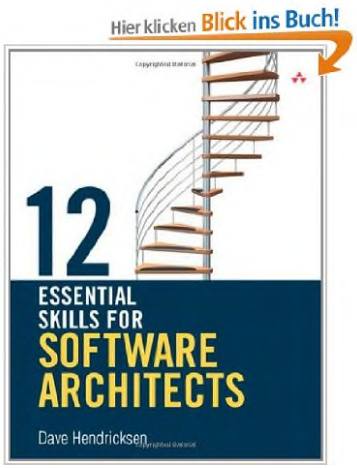


*Hard* Skills ↔ *Soft* Skills: Which are more important?

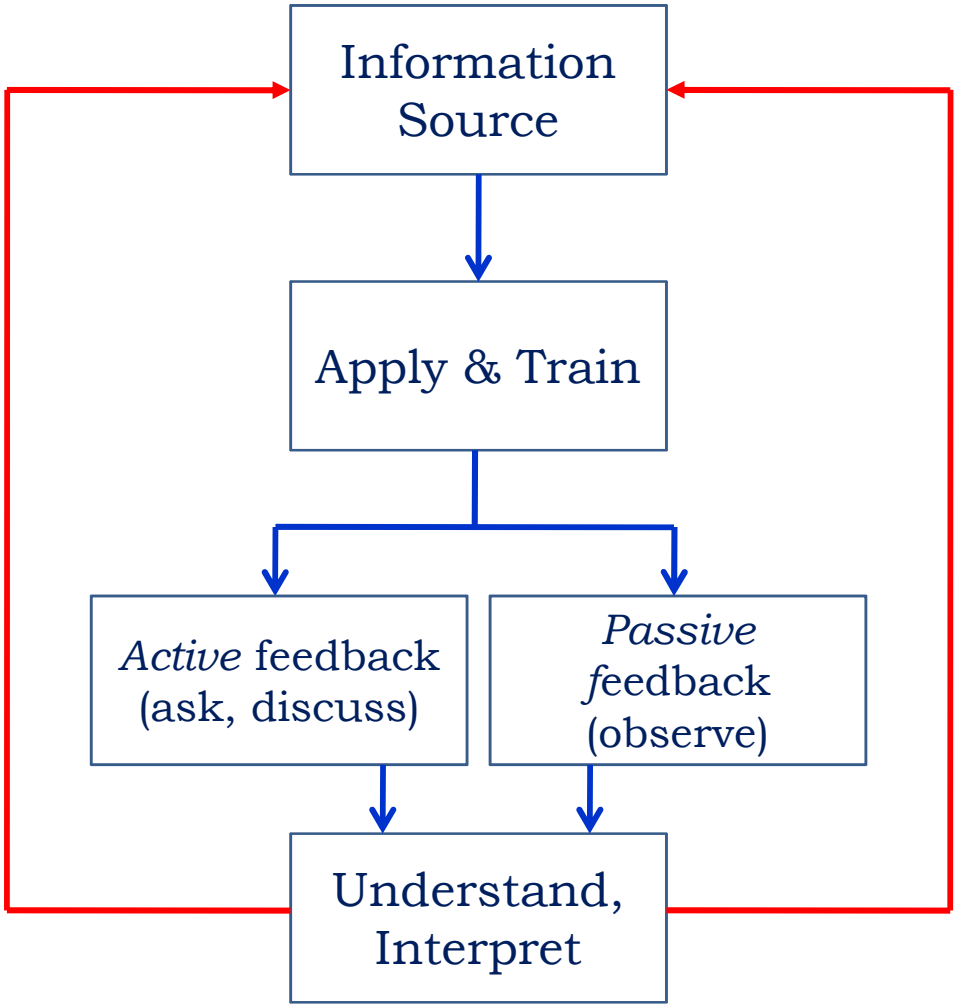



Dave Hendricksen, 2012, ISBN 978-0-321-71729-0

Dale Carnegie, 1937
ISBN 978-1-4391-9919-0




# How can we learn *Soft* Skills?

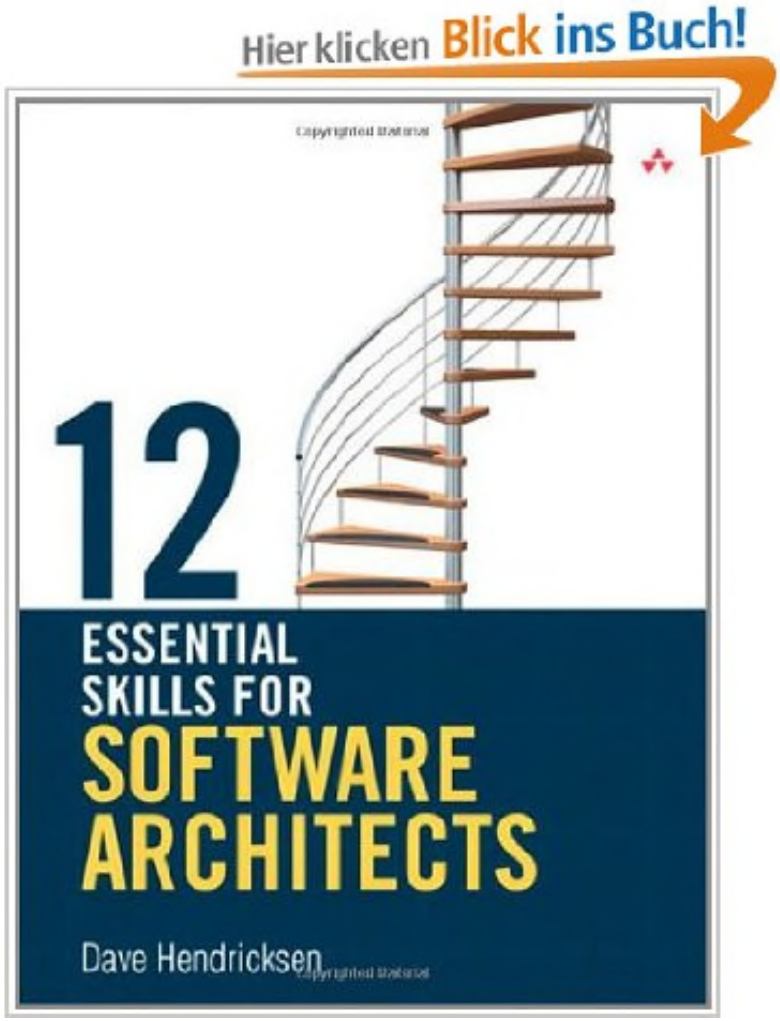



„*Hard skills* help us qualify for a job;

*Soft skills* dictate our career growth“

[Wushow Chou, 2013, ISBN 978-1-118-52178-6]

http://www.rxeconsult.com




… one of the most important books you should read in your education as a software architect

# Software Architect: Skills Coordinate System

# Parting Notes


http://www.mikmak.co.il/gallery?id=95608&ctgId=1

Workplan

| Activity | Deadline/Date |
|---|---|
| **Hauptseminar Kick-Off Meeting** | **Tuesday, April 8, 2014: 14:50 – 16:20 Room INF 2101** |
| Select 2 *peer reviewers* (from the participants) | April 20, 2014 |
| Deliver 1st draft of both your storyline and your paper to your peer reviewers | Friday, May 16, 2014 |
| Peer reviewers return their comments to the authors | Friday, May 23, 2014 |
| ~~Deliver 2nd, improved draft of both your storyline and your paper~~ | ~~Thursday, May 30, 2014~~ |
| **1st Seminar Day** | **Friday, June 6, 2014: 09:00 – 13:00 Room INF 2101** |
| Deliver 2nd, improved draft of your paper to your peer reviewers | Friday, June 20, 2014 |
| Peer reviewers return their comments to the authors | **Monday, June 30, 2014** |
| ~~Deliver pre-final draft of your paper~~ | ~~Friday, July 4, 2014~~ |
| **2nd Seminar Day** | **Friday, July 11, 2014: 09:00 – 13:00 Room INF 2101** |
| Deliver final version of your paper | Latest: Wednesday, July 23, 2014 |
| pdf-volume of collected papers ready | Friday, August 22, 2014 |

Please pdf & **source** file

You have now earned 3 ECTS Credits

These will be credited by Katrin Heber


http://audioto.ru/best/ects-credits-system

http://audioto.ru/best/ects-credits-system


⇒ Benoteter Schein von Katrin Heber

**<u>Lehrveranstaltung</u>: Hauptseminar „Software in 2025“**

**Dr. Frank J. Furrer, Sommersemster 2014**

| Name | Matrikel-Nummer | Attendance **3x** | Paper Delivery **3x** | **Note** |
|---|---|---|---|---|
| Bierzynski, Kay | | √ | √ | **1.0** |
| Gollasch, David | | √ | √ | **1.0** |
| Korger, Christina | | √ | √ | **1.0** |
| Peschel, Paul | | √ | √ | **1.0** |
| Rausch, Jonas | | √ | √ | **1.0** |
| Schön, Hendrik | | √ | √ | **1.0** |

Future:

Lehrveranstaltungen TUD Dr. Frank J. Furrer

Wintersemester 2014/15:

**Future-Proof Software Systems**

(2 hrs/week, Oral exam, 3 ECTS Credits)


System & Software Technical Debt

Sommersemester 2015:

**Hauptseminar**

**«Cognitive Computing»**

(3 seminar days, No exam, 3 ECTS Credits)

http://www.greenbookblog.org

Thank you

I greatly enjoyed this seminar

I hope to work again with some of you