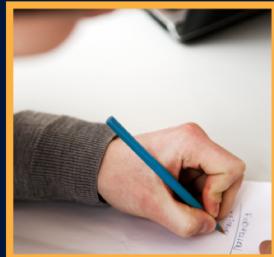


COPENHAGEN BUSINESS ACADEMY



Bachelor Project Kick-off Spring 2019

Important Dates

- Bachelor project start **Now**
- Bachelor project hand-in **June 3rd 2019 23:55**
- (Seminar on defence: **June 12th)**
- Bachelor project exam **June 24th-26th**
- Bachelor graduation **June 27th @ 14:00**
- * Electronic hand-in in WISEflow

The Purpose

*"In their bachelor's project, the student must **document** the **ability** to work with a **complex** and **practice-oriented issue** in relation to a specific IT project, using an **analytical** and **systematic** basis.*

For further elaboration on learning objectives for the bachelor project see the curriculum."

The Formalities

- The maximum size of the bachelor project is **40 normal pages** (2400 characters pr. page) pr. report **+20 normal pages pr. student**, i.e.:
 - One student can hand-in up to 60 pages,
 - Two students can hand-in up to 80 pages, etc.
- There is no absolute minimum, but teachers and examiners experience it to be short if it is shorter than 2/3 of the maximum.
- The bachelor project covers 15 ECTS
- It can be written by groups as well as individual students.

Relation to Internship

- It is recommended your bachelor project builds on the experiences and the product of your company work.
- Often the internship report contains descriptions of the company and the work you did. You can reuse those parts if you state it clearly in the bachelor report.

Content

- The bachelor report must focus on one or more of the mandatory courses of the program:
 - System Integration
 - Test
 - Databases for Developers
 - Large Systems Development
- The bachelor project is typically centred on the development of a product, the product being a final developed and deployed product, a part of such, or a prototype.

Content

The bachelor report should contain:

- A thorough description of the work done
- A thorough evaluation and reflection of that work

Content

The bachelor reports usually comprise the following:

- a report usually starts with a four sentence abstract ("Kent Beck Abstract")
- the architecture of the investigation should follow the Karamel-Model, see for example, and
- the report follows the guidelines of writing good reports, for example as given in
<https://lemire.me/blog/rules-to-write-a-good-research-paper/>

In essence: UFO course contents!



The Abstract

Kent Beck Abstract

<https://plg.uwaterloo.ca/~migod/research/beckOOPSLA.html>

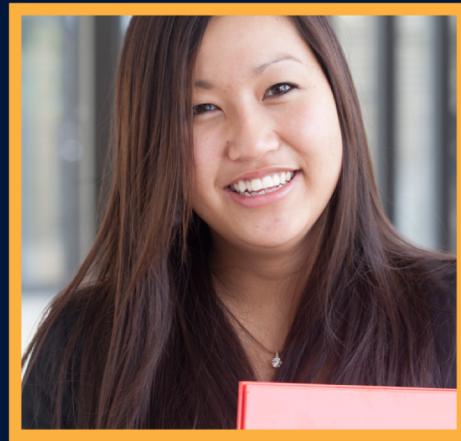
I try to have four sentences in my abstract.

1. The first states the problem.
2. The second states why the problem is a problem.
3. The third is my startling sentence.
4. The fourth states the implication of my startling sentence.

Or, phrased differently:

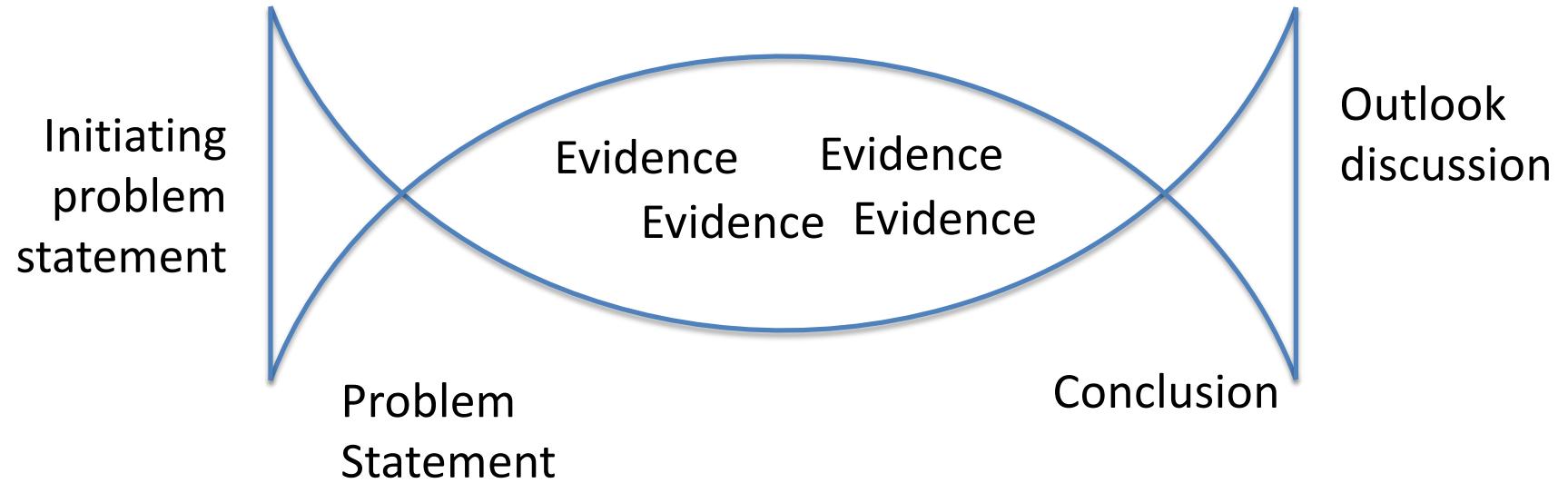
<https://lemire.me/blog/rules-to-write-a-good-research-paper/>

1. state the problem
2. say why it is interesting
3. say what your solution achieves
4. say what follows from your solution.

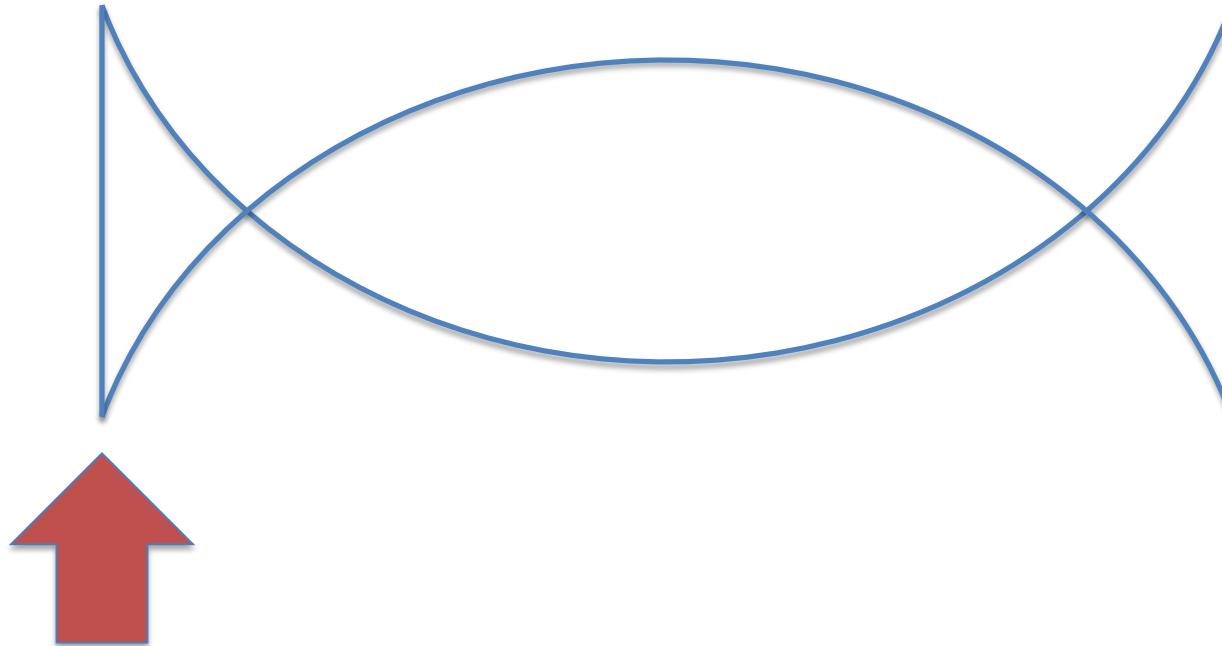


The Architecture of Investigation

The architecture of investigation

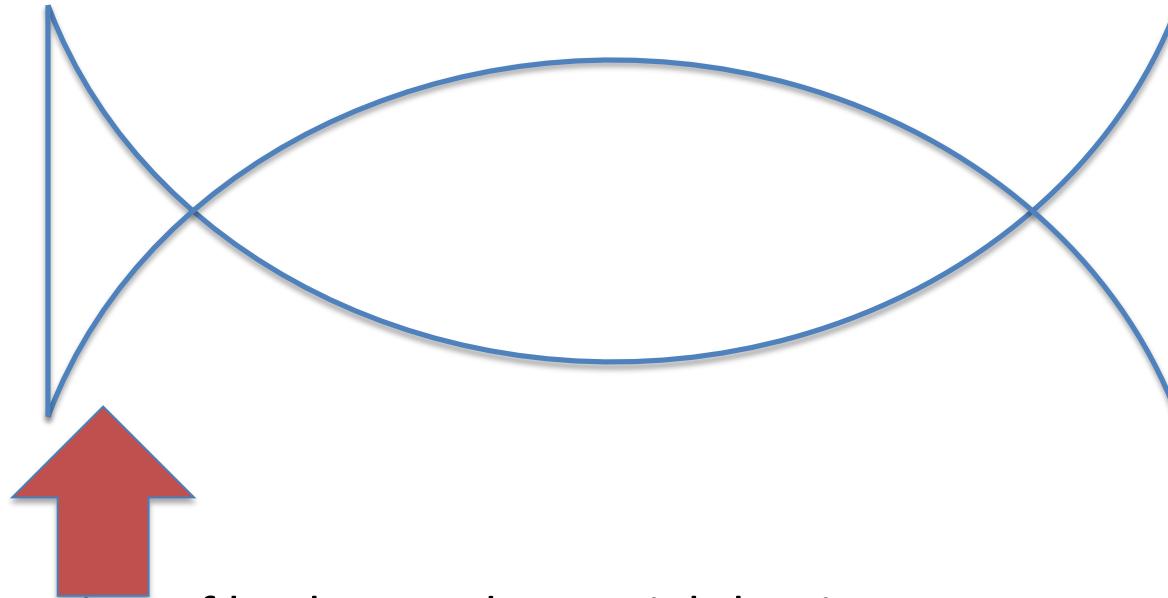


Initiating problem statement



It is the problem that caused the work to be initiated. As such, it will not change over time. Over time it might turn out it was naïve, overly broad, no longer relevant, etc. But in any case it was the issue that caused the work to be initiated.

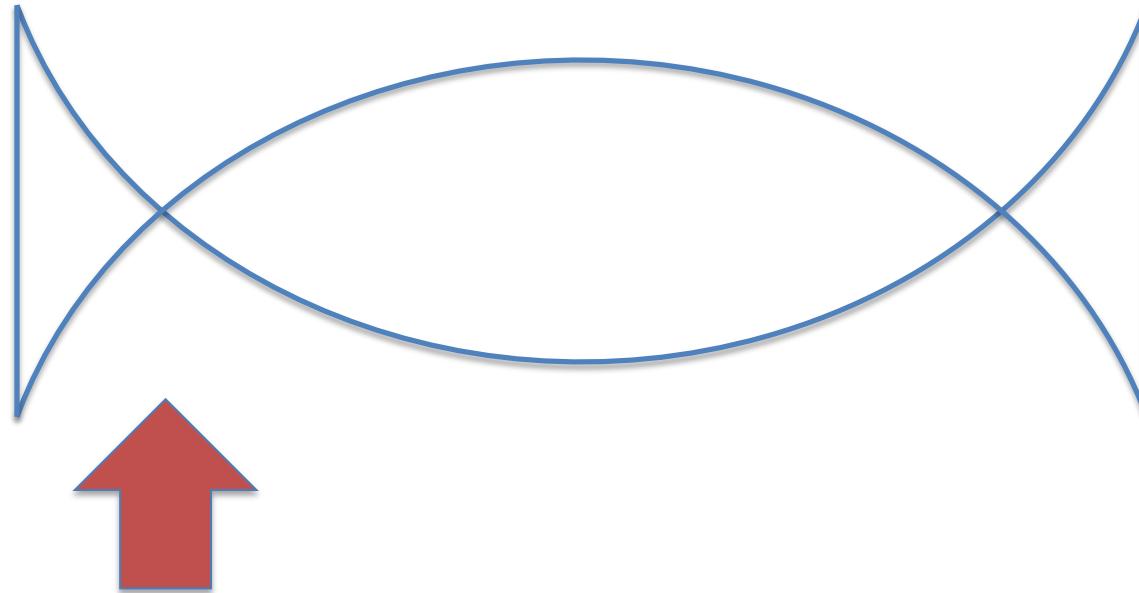
The narrowing phase



Mostly it consists of background material that is necessary to be able to state the narrow problem statement concisely. Sometimes that background material is in part a related work section. Sometimes the related work is a work package. It depends on the concrete problem statement.

In addition, it relates back to the initiating problem statement. Some times the delimitation will be argued from initiating problem statement, other times delimitation can be done based on interest.

Problem statement

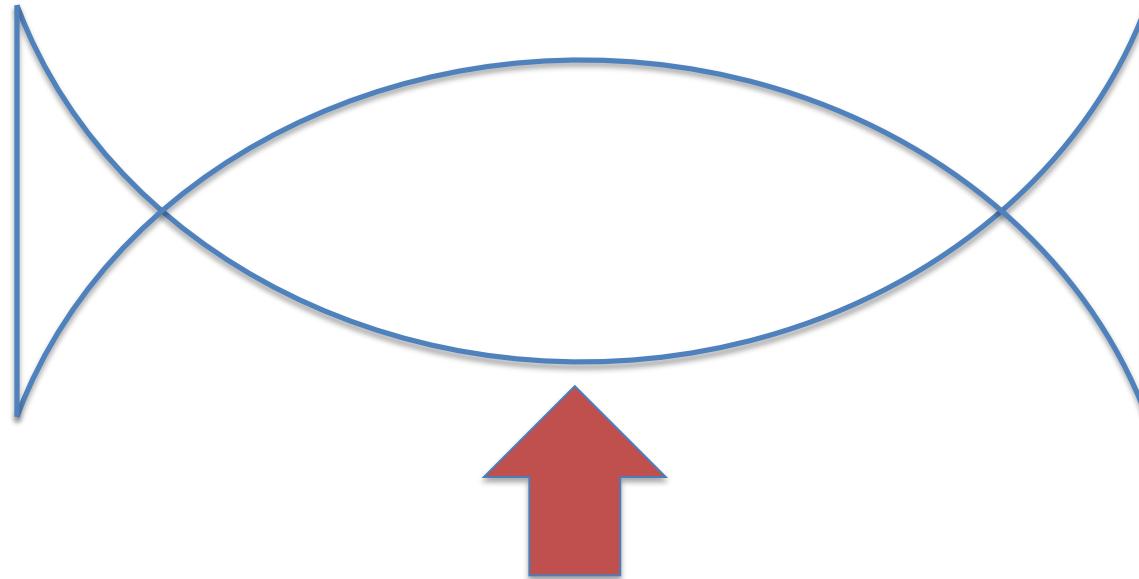


Short few line statement.

In order for those few lines to be readable a significant amount of background material might be needed to be presented.

When working with concrete problems statements relating to specifics in concrete companies, it is for instance mostly necessary to introduce company and some relevant products to allow the reader to appreciate the problem statement.

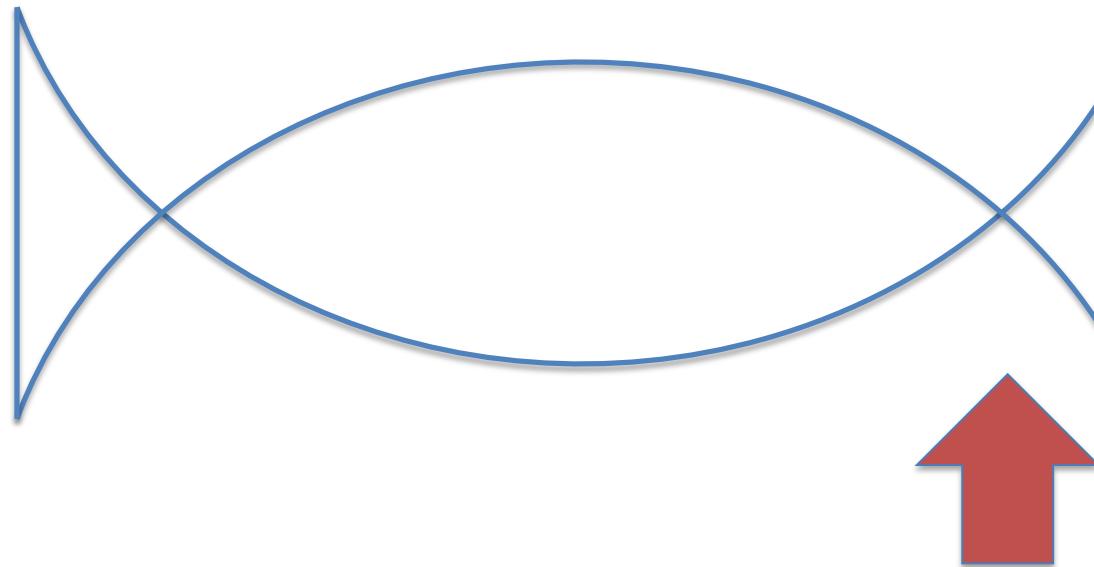
Work packages provide evidence



This is all the work to be carried out to reach a conclusion.
Work packages depend on the problem statement, but *include* argumentation based on:

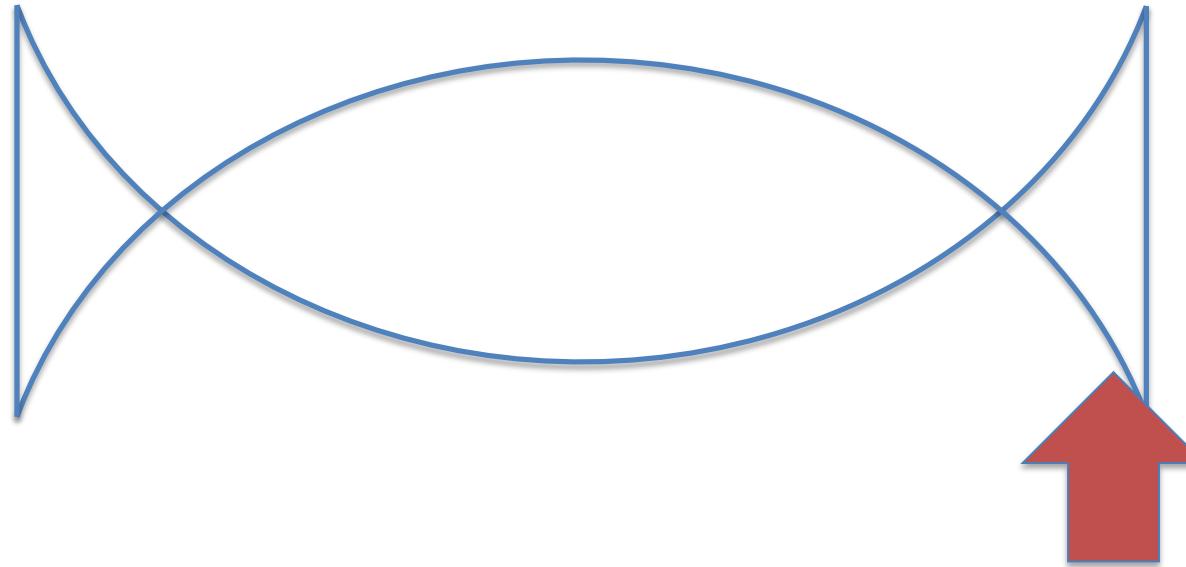
- Literature, blogs etc.
- Prototypes
- Measurements
- Interviews
- Surveys
- Etc.

Conclusion



It should answer the problem statement based on the work packages.
New material or perspectives should not be included here.
Sometimes when writing the conclusion ideas for new work packages surface.
Writing a preliminary conclusion shortly after the problem statement is formulated and initial work packages outlined is useful.

Outlook discussion

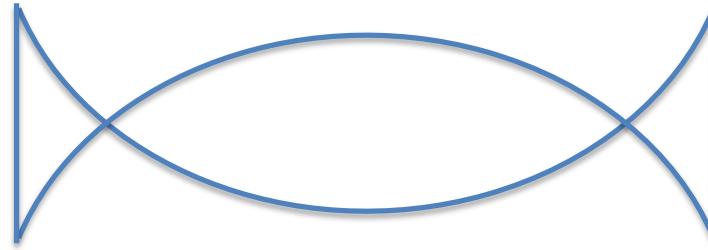


The conclusion did not answer the initiating problem statement but the narrow problem statement.

The work packages have (hopefully) been saying more than strictly needed to answer the problem statement in the conclusion.

The widening at the end of the report draws some presumed consequences of the conclusion in relation to the initiating problem statement.

Pragmatics



One do not (need to) work from left to right.

One has to understand the overall picture at all times, and can then fill in in what ever order one wants.

It is good to get some version of the problem statement and intended conclusion nailed early on. But often be prepared that the problem statement move and adjust both all the way up to the deadline.

Sometimes you have wish to do specific work packages. The model serves well to highlight what is needed in a thesis beyond the work package.

Mostly there is a hidden motivation and initial problem statement that lies behind the wish to do said work package.



Writing Good Reports

Writing a Good Report

Three strategies to write a report:

- Pick a new problem. Define the problem. Be the first to propose a solution. The problem should be simple and concrete. This is the best way to get highly cited and become famous.
- Try to explain something significant nobody has managed to explain.
- Improve by a wide margin what others have done. Can you reduce the error rate by half? Can you double the speed? Don't waste our time with incremental gains (e.g., 10% faster).
- <https://lemire.me/blog/rules-to-write-a-good-research-paper/>  cphbusiness

Differences from DAT Project

- Higher professional level
- The central PBA topics must constitute the main problem (one or more)
 - System Integration
 - Test
 - Databases for Developers
 - Large Systems Development
- Higher level of generality
 - Reflections in the project must be more general - i.e. less personal and of more interest for the profession

Theory in the Bachelor Project

- Do not forget the P in Professional Bachelor
- Practical issues, preferably in a company

- The project must demonstrate that you
 - are "ready" (the project is your masterpiece)
 - can contribute to the development of the profession by generalising your experience (the project becomes a "show case")