Master Project; Writing an Abstract

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Abstract

An abstract is a brief desrciption of the content of a paper to facilitate readers in deciding to read the paper. This presentation explains how to write an abstract. Normally, an abstract is written at the end of writing a paper. For the master project, we challenge students to write an abstract up front, to stimulate them to think through the entire project, including the expected outcome.

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logo
TBD

Abstract

"A good abstract should answer three questions:
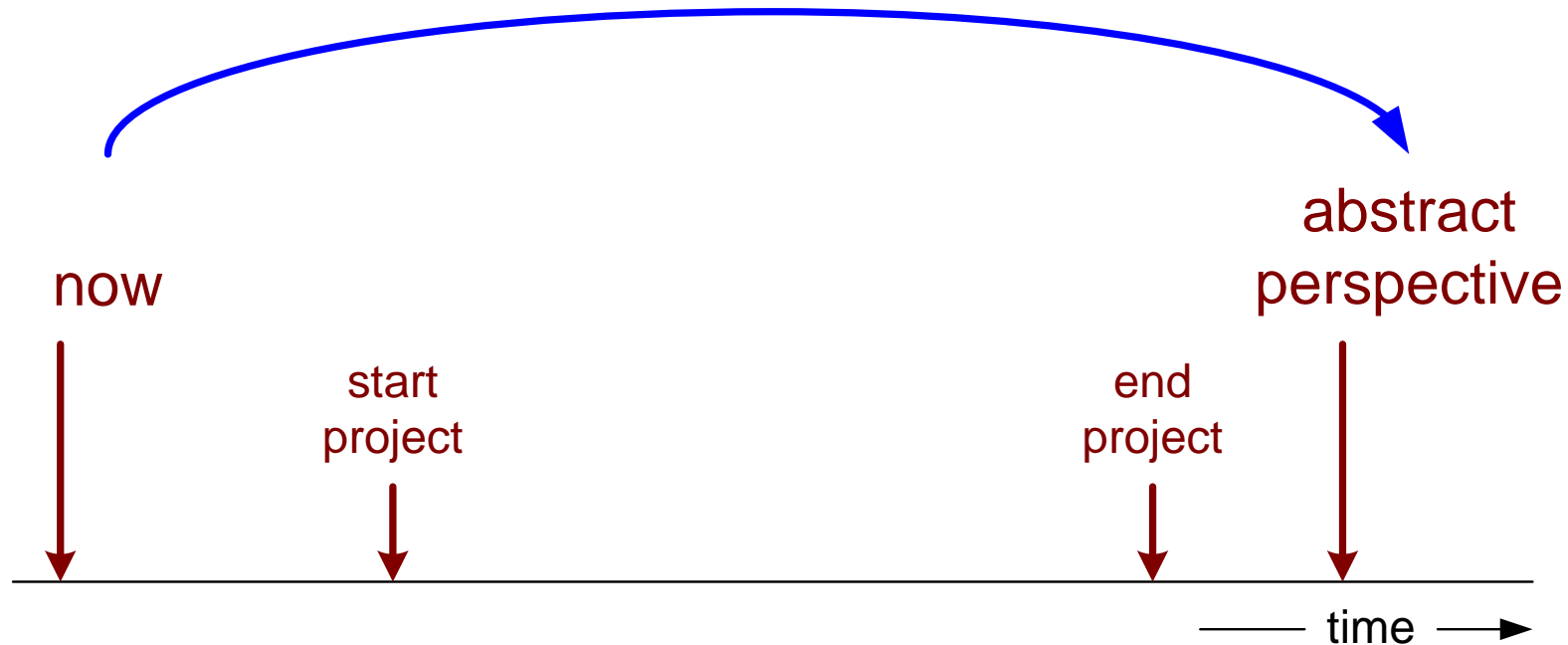
What did I do,

what did I learn,

and why is that important?

The key is to identify something or things that can be reused in the future."

Prof. Michael Pennotti, Stevens Institute of Technology

"fast forward" yourself into the future
what do you expect to be the project outcome?

abstract
perspective

now

start
project

end
project

time

Students write an initial abstract at the start to think through
what can happen. At the end of writing the paper, you write
the real abstract. The academic supervisor has to accept
the initial abstract before starting the project.

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Multiple Levels of Academic Abstraction

case

SE body of Knowledge

meta^0

bottom line:
system-of-interest

meta^1

enabling:
systems engineering methods

meta^2

academic:
research of methods

work over system
missile
production line
turbine package
control system
tie-in system

stakeholders and concerns
ConOps
operational needs
need statement
needs into requirements
SMART requirements
concept selection
partitioning and interfaces
documenting the architecture
knowledge management
conceptual modeling
budget based design
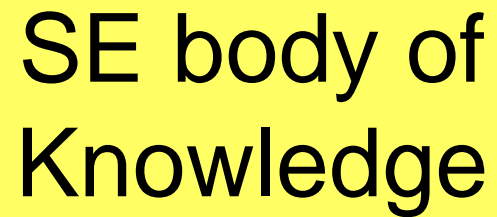integration and verification plan
design of qualification program

measuring
experimenting
modeling
surveys
interviews
refering to literature
argumenting

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Value per Meta-level

case

SE body of Knowledge

meta^0

bottom line:
system-of-interest

earning money

meta^1

enabling:
systems engineering methods

re-use
in future projects
in other domains

meta^2

academic:
research of methods

validation of
method
re-use

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Content of Paper

case

SE body of Knowledge

meta^0

bottom line:
system-of-interest

meta^1

enabling:
systems engineering
methods

meta^2

academic:
research of methods

set the context
where did you apply

what did you apply and why

what can we learn
based on what findings

domain
system-of-interest

systems engineering
challenge/need
methods, expected benefit

observations
argument

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Exercise

Write an abstract

in 3 paragraphs

use 2 sentences per paragraph

100..150 words in total

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