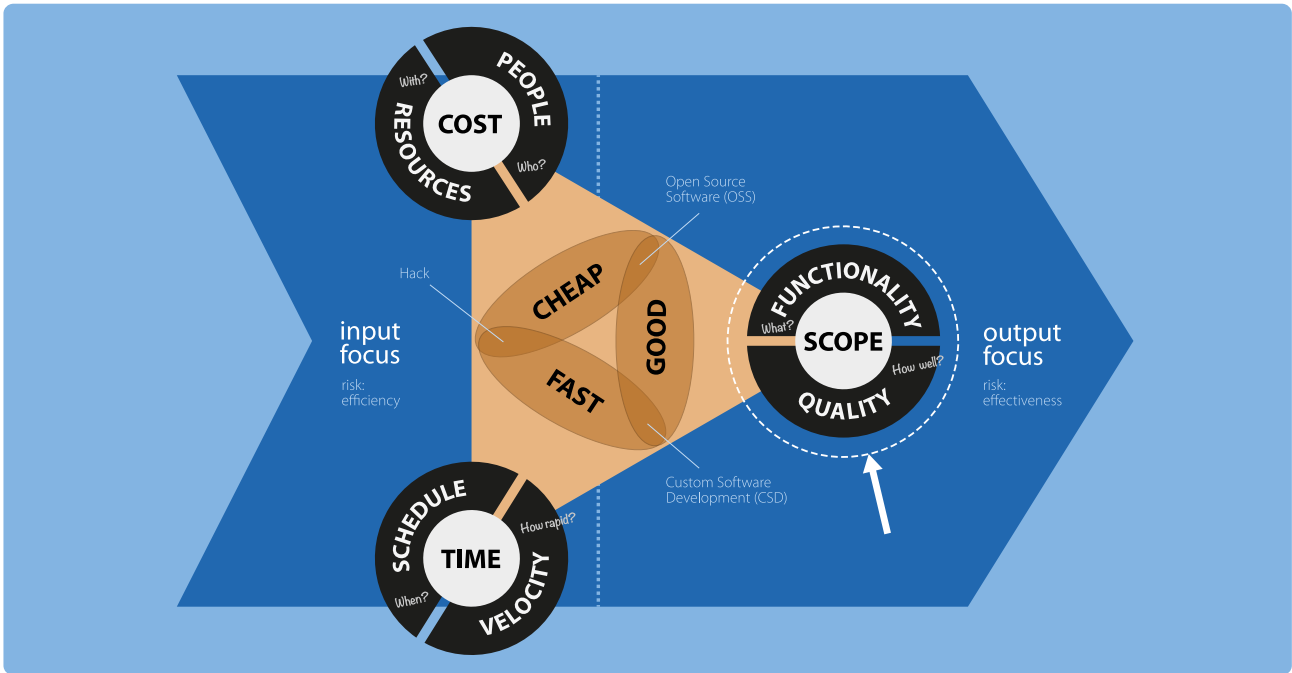




**Software Engineering
in der industriellen Praxis
(SEIP)**

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Definition of a Project:
 "Temporary endeavor undertaken to create a unique product, service or result."
Temporary in that it has a defined beginning and end in time, and a defined scope and cost.
Unique in that it is not a routine operation, but a one-time, single-goal, and risk-containing operation.

Project Management Iron Triangle:
 A project is constrained by **time**, **cost** and **scope**. No constraint in this triangle can be changed without affecting the others. Time splits into **schedule** and **velocity**. Cost splits into **people** and **resources**. Scope splits into **functionality** and result **quality**.

Project Management Trilemma:
 "Fast. Cheap. Good. Pick two!"
 Each project optimization effort has the choice among **three** favourable options — only **two** of them are possible at the same time.

project & constraints

Project Management, alongside **Software Architecture**, is the second important Discipline in the field of **Software Engineering**. Therefore everyone should have at least a basic understanding of the essential task of Project Management: continuously finding the balance from the "Iron Triangle" of **Time**, **Cost** and **Scope**.

The adjusting screw **Time** is divided into the two aspects **Schedule** (When?) and **Velocity** (How rapid?). The adjusting screw **Cost** is divided into the two aspects **People** (Who?) and **Resources**. (With?). The adjusting screw **Scope** is divided into the two aspects **Functionality** (What?) and **Quality** (How well?).

If a change is made to one of the three adjusting screws or one of the six aspects, the "Iron Triangle" will be unbalanced, and one must inevitably change one or more of the other screws or aspects to restore the balance.

Also worthy of mention is the **Trilemma**, which says that one can usually have only two out of three things at a time: either cheap and good (Open Source Software), but not fast; or good and fast (Custom Software Development), but then not cheap; or fast and cheap (the "Quick Hack"), but then not good.

In practice, the non-Project-Managers are co-responsible, especially in the area **Scope**, since here a change in the project usually requires a deeper technical understanding of the Application.

Questions

- At which adjusting skew of **Project Management** in practice are the non-Project-Managers co-responsible?

STRUCTURE					
Time Periods		Work Streams		Process Flows	
Product Stage STG Giant step in the development of the product, to deliver a distinct major version of the product.	Organisation Scope SCP Top-down scopes, Portfolio, Program and Project to manage initiatives at different granularity levels.	Flow Sequencing SEQ Sequential process flow of multiple disciplines, iterations, tracks, slices, increments, phases or stages.	Project Phase PHS Major time period in the project process, to split the project into distinct focus periods, separated by major milestones.	Product Increment INC Regular step in the development of the product, to deliver a distinct minor version of the product.	Flow Parallelization PRL Parallel process flow of multiple disciplines or tracks.
Project Period PRD Minor time period in the project process, to split the project phases into distinct time-, cost-, or scope-based time units.	Disciplines Iteration ITR Work stream consisting of a single sequential or parallel pass over all disciplines.	Flow Interleaving ILV Interleaved process flow of multiple disciplines, iterations, tracks, slices, increments, phases or stages.	Disciplines Track TRK Work stream consisting of a continuous repeated flow through the domain of related disciplines.	Engineering Discipline DIS Distinct knowledge and work area of Software Engineering.	

PROPERTIES					
Progress Modes		Work Focuses		Work Goals	
Voluntary (Supplier-Push) VOL Supplier pushes requirements and work packages into the project and controls the progress.	Project Focus PRJ Focus on the project itself, to initiate, define, plan and successfully close it.	Extension Goal EXT Following the goal of making a functional extension of the product to create a new increment.	Planned (Customer-Push) PLN Customer pushes requirements and work packages into the project and controls the progress.	Technology Focus TEC Focus on the IT technology, to use it for implementing the solution.	Revision Goal REV Following the goal of making a quality revision of the product to improve an existing increment.
Agile (Supplier-Pull) AGL Supplier pulls requirements and work packages out of the project and controls the progress.	Domain Focus DOM Focus on the domain, to analyse and specify it.	Reduction Goal RED Following the goal of making a functional reduction of the product to destroy an existing increment.	Lean (Customer-Pull) LEA Customer pulls requirements and work packages out of the project and controls the progress.	Environment Focus ENV Focus on the environment of the solution, to transition the solution into it.	

PROCESS BUILDING BLOCKS:
 Every Project Management process in Software Engineering is made out of the above building blocks. All building blocks can occur (structure) or be applied (properties) zero, one or more times in a particular process.

PROCESS TAILORING & CREATION:
 To tailor an existing process, use the defined building blocks to better understand the given process. To create a process from scratch, decide on the building blocks by following steps 1 to 12 in the given order.

Every Project Management process in Software Engineering is made out of the same set of building blocks. All building blocks can occur (structure) or be applied (properties) zero, one or more times in a particular process.

To tailor an existing process, use the defined building blocks to understand the given process better. To create a process from scratch, decide on the building blocks by following steps 1 to 12 in the given order.

Questions

❓ Is a special Project Management Process in Software Engineering crucial?