



# Software Engineering in der industriellen Praxis (SEIP)

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## HI Minimize HARDWARE Idleness

Minimize the idleness and maximize the utilization of existing hardware resources.

**Rationale:** Unused or under-utilized hardware are an unnecessary waste of already available resources.

**Keywords:** Virtualization, Utilization.



## DE Minimize DESIGN Excessiveness

Minimize the excessiveness and maximize the adequacy of solution designs.

**Rationale:** Non-adequate designs cause unnecessary complexity and waste resources.

**Keywords:** Reduced Libraries, Immutability.



## HE Minimize HUMAN Effort

Minimize the efforts of humans and maximize the efforts of machines in all production and operation processes.

**Rationale:** Delegating tasks to machines gives humans the possibility to concentrate on more important tasks.

**Keywords:** Computer, Robot, Automation.



## SI Minimize SOFTWARE Inefficiency

Minimize the inefficiency and maximize the efficiency of software applications and their development processes.

**Rationale:** Efficient software and development processes consume less resources.

**Keywords:** Caching, Monolith.



## SE Minimize SOLUTION Ephemerality

Minimize the ephemerality and maximize the life-span of any type of solutions.

**Rationale:** Short life-spans of solutions cause unnecessary short renewals and this way wastes resources.

**Keywords:** High Quality, Best Practice.



## EC Minimize ENERGY Consumption

Minimize the consumption and maximize the saving of energy in all production and operation processes.

**Rationale:** Electric energy still has to be partially generated from non-renewable resources.

**Keywords:** Eco Mode, Reduced CI/CD.



## IA Minimize INFORMATION Amount

Minimize the total amount of gathered, transmitted, stored and spreaded information.

**Rationale:** Reduced amount of information means less data transmission, less data storage, less GDPR issues, etc.

**Keywords:** Compression, No Big Data.



## EE Minimize ECOSYSTEM Exploitation

Minimize the exploitation and maximize the back-contribution in any type of ecosystems.

**Rationale:** The consumer and provider behaviour have to be in balance for every long-lasting ecosystem.

**Keywords:** Open Source Software.



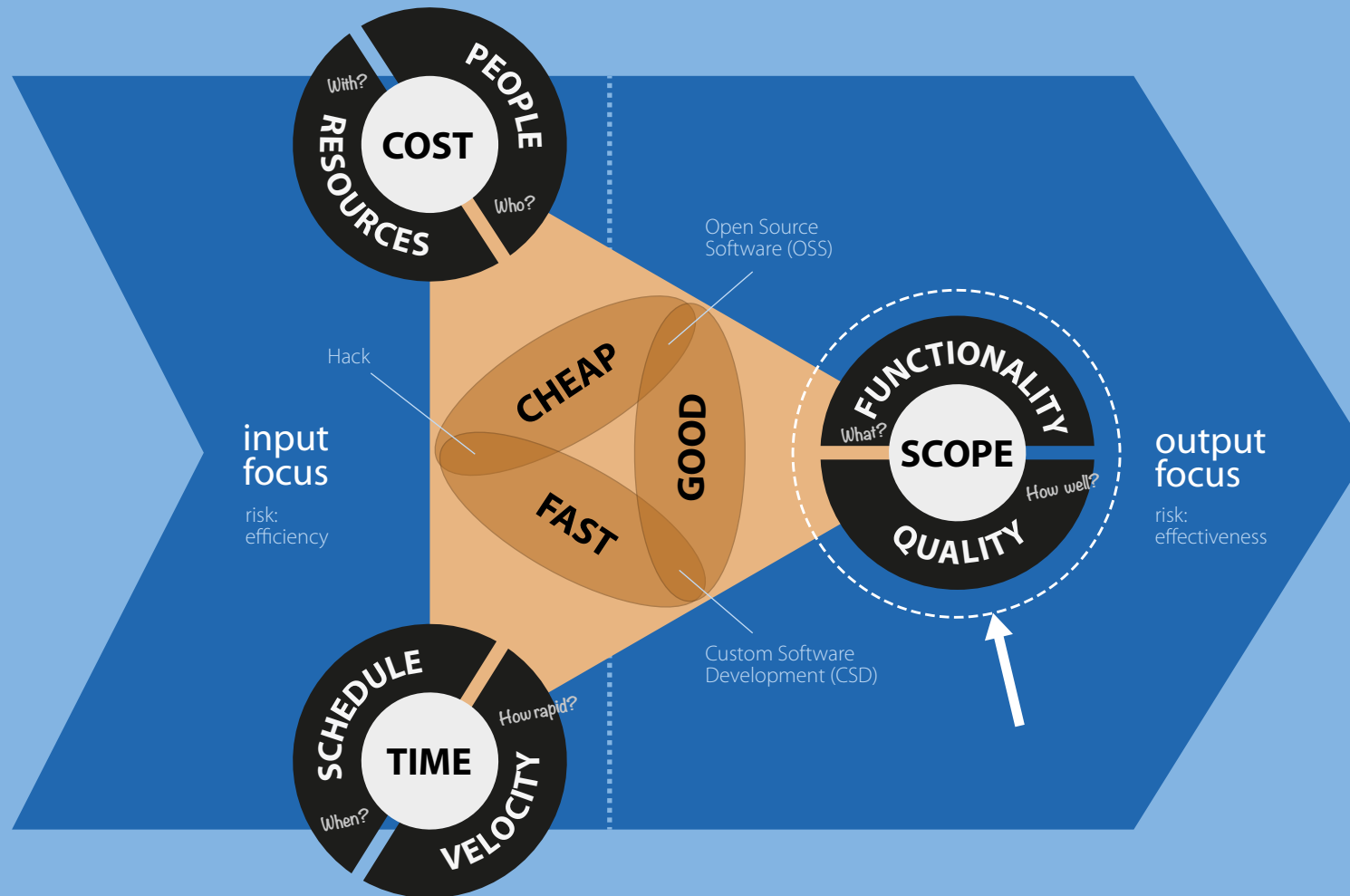
## CE Minimize CARBON Emission

Minimize the carbon emission and hence the footprint during any type of production and operation processes.

**Rationale:** Climate change and global warming is partially caused or at least accelerated by carbon emissions.

**Keywords:** Reduced CO2 Footprint.





## 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.