

# Johannes Messer – Consulting GmbH



## Johannes Messer Consulting HPDC CIP Light Executive Summary

## Introduction

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The German aluminium die casting industry is currently at a forward-looking point. The market currently offers both opportunities and risks of enormous scope.

In order to exploit the opportunities that arise, but also to minimize existing risks, the short-term increase in profitability is the highest priority.

The momentum with which changes are currently occurring additionally requires fast and sustainable action. Operationally, the continuous improvement process (CIP) is the only realistic lever of success that can be implemented in the short term. Only companies with sufficient profitability will be able to take advantage of the current opportunities and avert possible risks.

To cope with the situation, an **HPDC CIP Light** was developed especially for die casting foundries and the described situation.

The developed approach enables a quick entry into the operative CIP-project work. Employees do not have to attend lengthy training as usual. The necessary theoretical CIP elements are taught in the framework of the respective project modules (e.g. set-up time reduction, cycle time reduction, ...) in "Learning by doing". The project work is complemented by existing knowledge of the JMC from implemented foundry CIP projects (benchmark database).

The approach shown leads to quick successes for the employees (high learning intensity) and the companies (fast project ROI). The resulting high level of motivation leads, as in the classic snowball effect, to ever higher implementation speeds and CIP know-how structure.

## Why HPDC CIP light?

Many companies are reluctant to implement a **classic CIP**. The first phase is very **time-consuming** (cost), and **theoretical** (employee motivation). The project ROI is coming very late. **HPDC CIP Light** starts with these weaknesses and integrates foundry benchmark know-how from implemented projects.



### The difference



#### CIP

- Elaborate, basic theoretical training in "all" essential CIP tools
- Elaborate project phases through to implementation
- Gradual project progress along the DMAIC
- Later project ROI
- Long-term approach

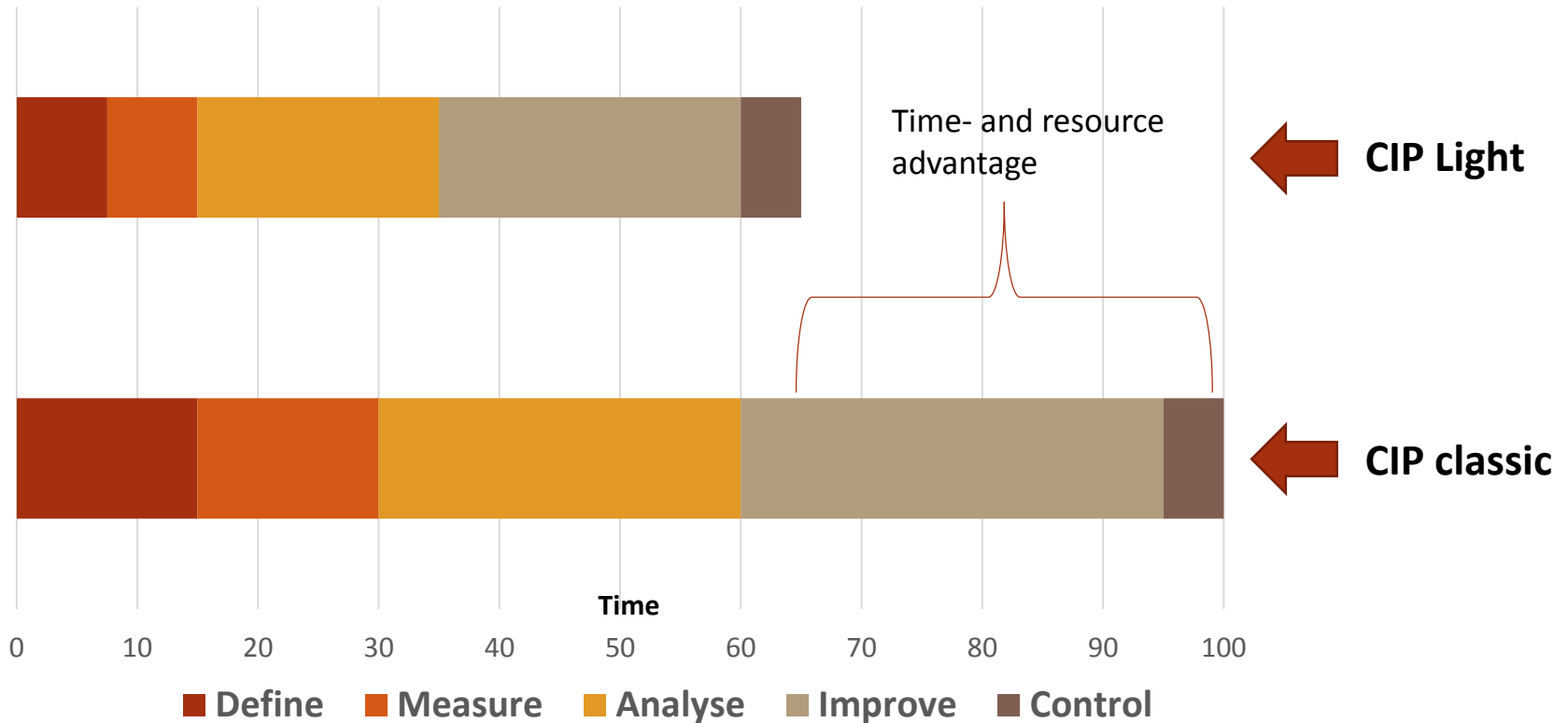
#### HPDC CIP Light

- Training in "learning by doing" (no loss of time, intensive and rapid knowledge deepening)
- Quick implementation of improvements (Do it through project work)
- Short-term project success (know-how of implemented foundry benchmark projects, fast project ROI)
- High employee motivation (successes from real projects)
- Management plays the leading role (... not the advisor)
- Modular project implementation (implementation of other projects is based on the need also on available resources and financial possibilities)

**Guarantee of success: Time and resource use**

The required **project time** is **significantly** reduced (to approx. 65%) compared to classic CIP. The main reason is that existing know-how from a large number of implemented projects can be used.

**Project duration - Use of resources in %**



## Guarantee of success: Benchmark Database

A major advantage of the HPDC CIP Light is that it mainly uses known projects (high implementation speed, high chances of success).

### HPDC CIP Benchmark Database (Project know how)

- Optimize **set-up times** (foundry and machining)
- Reduction of **cycle times** / default times (foundry, processing → determine default times)
- Reduction of the **form disturbances** (use of the casting machine)
- **Raw material management** (slipping, scabies, shavings → makeover?)
- Optimization of **metal results** (purchasing concepts)
- Optimization **tool results** (purchasing, building the mold, ...)
- **Change management** (cost entry and transfer)
- Multi and **small quantity management**
- **Energy consumption** (e.g. compressed air leakage, shutdown management, ...)
- Reduction of **mold repair effort**
- **Quote Management** / Offer Quality
- **Time to market** (construction → construction of the form → sampling → release)
- Optimization of **commercial processes** (e.g. quotation processing)
- **Customer training** (customer loyalty, ...)
- Optimization / **standardization** workplace
- **Idea Management** (Employee Suggestion System)
- **Technology**: Minimal quantity lubrication, mold temperature control, salt cores, ....
- Originating **machine utilization**
- Standardization and monitoring of **process parameters** (foundry, processing)
- Internal **training system** (CIP, technology)
- **Just in time** (reduction stocks, reduction of additional shipping)
- Reduction **shot weight**
- **Value flow** / material flow (raw material → melt → casting → processing → shipping)
- **Visual parts inspection** (camera inspection)
- Reduction of the **work contents** (comparison with the order calculation, testing, deburring, ...)
- Reduction **start-up scrap** (scrap after interruption of the casting process)
- **Visualization** (foundry, processing)
- **5 S** in all areas

**Guarantee of success: Modular construction**

**Classic CIP „Education“**

Training the theoretical fundamentals



**Modular CIP Light „Education“**

Module 1

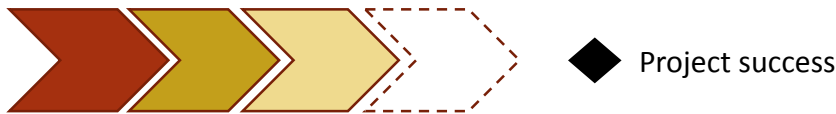
e.g. Set-up time reduction → Training on operational projects



Training content is based on the project or requirements.

Module 2

e.g. Cycle time reduction



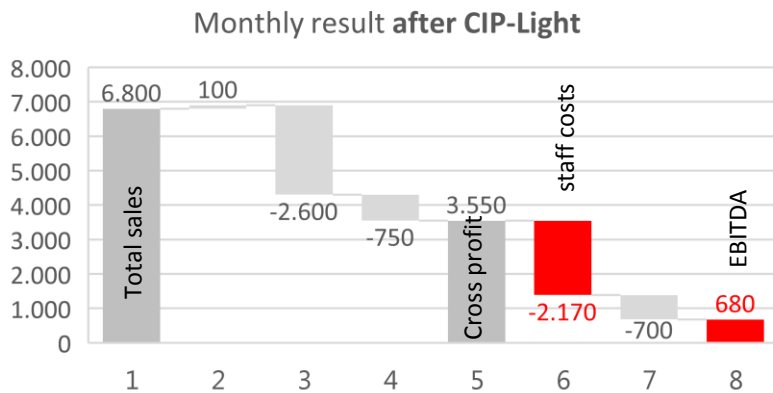
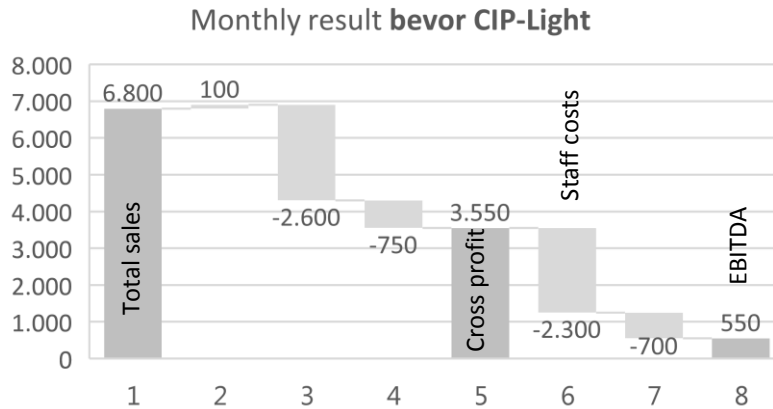
Module 3  
etc.



Each employee learns the theoretical foundations and the practical application of the individual CIP tools on concrete projects. Thus, the first **partial successes** set in very **early** and through further projects, the **complete CIP knowledge** is gradually conveyed.

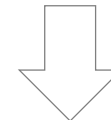
The result: fast project ROI

Due to the advantages described, the **project ROI** is much **faster** than with classic CIP. The impact on company EBITDA depends on the size or number of projects implemented.

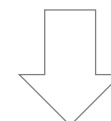


example

= 8,1 % EBITDA



**Increase in productivity (gross profit / staff costs) by 5.8 % with CIP Light**

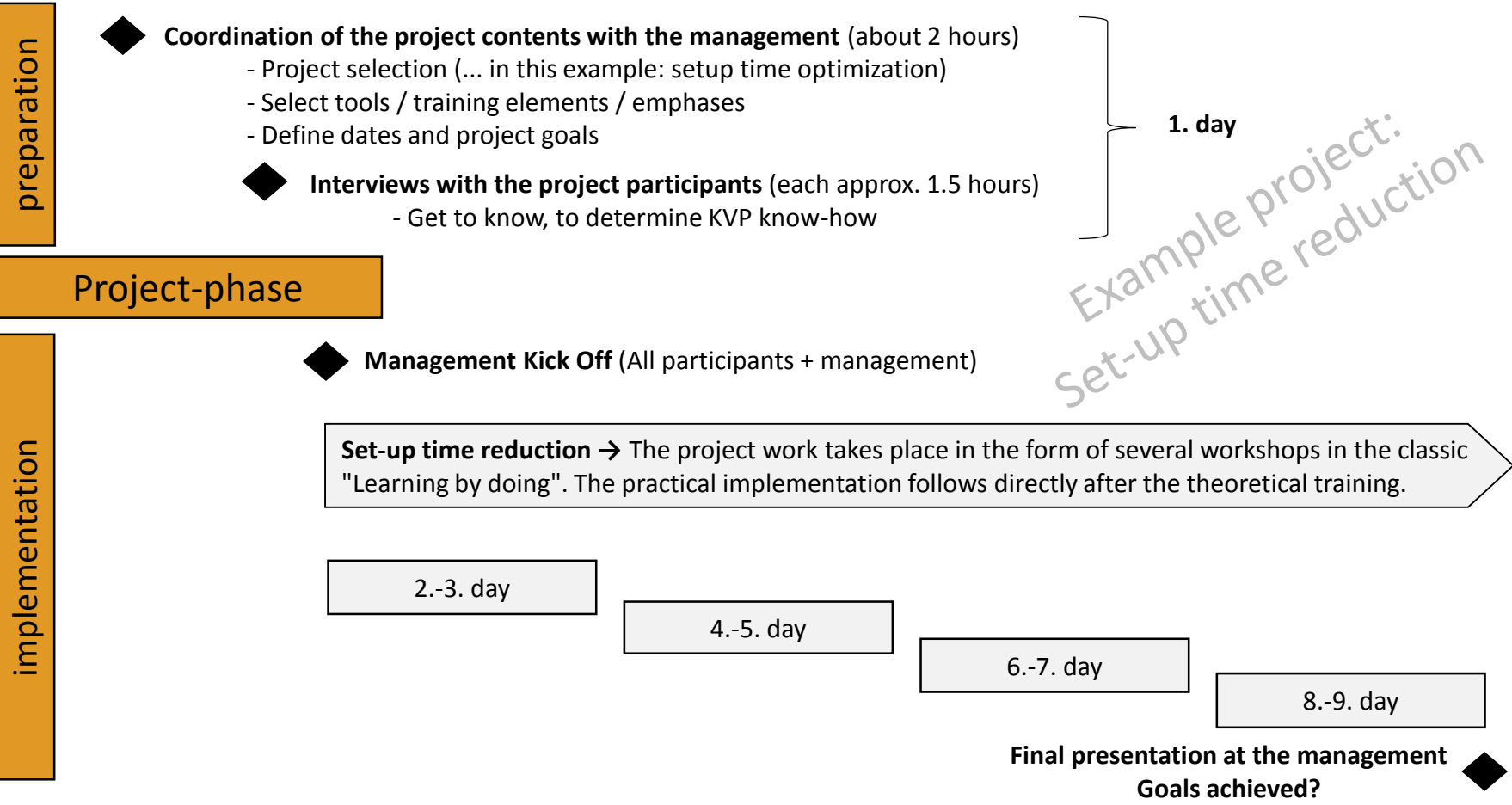


= 10 % EBITDA



How is the implementation going?

Set-up time reduction  
 (process)





Summary



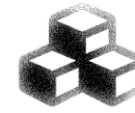
Time –use of resources

- Shortened project duration through training in the project
- ..



Date base know how

- Experience from implemented projects
- ....



Modular construction

- Controlled cash outflow
- Organized use of staff resources
- ....



Project success

- Fast project ROI
- Realizable target achievement
- Intensive training through direct project reference
- High motivation of all involved

**Result: HPDC CIP Light** offers all foundries, regardless of CIP prior knowledge, a quick and safe introduction to the subject of CIP. The faster project ROI and the achievable goal make the procedure **highly attractive**.