

No	Company			Experience	
	Field	Size ¹	Description	Relevant	Further
6	Metal Works	8k	Senior Director Operational Excellence	2 years	Six Sigma Greenbelt, Staufen Lean Trainer, ISO9001

¹k = 1,000

Similarities and Differences - Overlaps and Deviations in Terms of Objectives, Methods and Underlying Philosophy

Elimination of all kinds of waste (energy, time, space). The additional costs for recycling can be easily argued to customers. The added value for the customer must always be at the forefront, and if the customer does not want R-strategies, then the added value does not exist in the customer context. The design of the product has a strong influence on LM and CE possibilities. Designing the product reversibly is an important aspect.

KPIs in the context of shop floor management also provide important clues for CE. Maximum energy demand and, in particular, energy peaks should be avoided. Corresponding efforts have a direct economic advantage. In addition to less consumption of energy and material, the reduction of waste is also an approach for processes. For example, scrap from laser cutting can be used for smaller components, it just needs to be planned accordingly. Ordering raw material in such a way that scrap is kept to a minimum can also make sense.

CE aspects in the context of Lean should be translatable into cost effects in order to have a comprehensible metric for success measurement.

There can be conflicts where a product can be manufactured with recycled material or through refurbishment, but customers do not demand it. However, eco-variants of products are now more in demand.

Synergy Effects and Target Conflicts - Interactions and Results in the Joint Implementation of CE and LM

Multi-moment recording (e.g. efficiency of the milk run or utilization of forklifts) is a possible method for evaluating transport effort or frequency. In principle, companies should analyze their logistics performance, because every operating hour or surplus means of transport costs money and generates emissions. However, the economic aspects generally outweigh the others, so it is important to link CE with financial aspects. However, these savings can also be recognized and realized independently of LM.

There are conflicts where the sorting and processing of returns is very time-consuming. Throwing it away is then often easier. However, even good waste separation offers price advantages when it comes to disposal and can therefore be economically viable.

Key figure packages must address sustainability and it would be important to use meaningful indicators. The data situation is often incomplete, be it in the context of LM or CE.

Since CE is a rather subordinate objective, cost aspects should be made visible. For example, the consumption of compressed air should be considered more closely, as lowering the operating pressure can save money without much additional effort. Cooling water is also often taken for granted. Cleaning processes that can be improved with a lower washing temperature and better chemistry can consume less energy and produce less wastewater to be treated, in addition to improving cycle time. Specifically, there are powders for powder coating that only need to be baked at 160°C instead of 200°C, thus saving energy.

Further Thoughts on Strategies, Methods and Tools

In principle, employees should question conditions. TPM or 5S provide clues here that can be documented and tracked with PDCA. Constantly wiping away oil is not only an unsightly environmental burden, but also an unnecessary activity. Processes should be examined accordingly and investigated for waste, be it LM or CE. In this context, there is often a certain operational blindness for green issues, and certain processes are not questioned.

Appropriate monitoring of CE measures helps to make them visible and provides increasingly valuable arguments for the external presentation and perception of companies. However, B2B is a tough environment where every penny counts. In case of doubt, the only thing that helps is to be cheaper and to show the customer the added value. Cardboard is not only a greener packaging than plastic, but it is also cheaper to dispose of than mixed waste.

Operating pallet loops also involves transport costs and, under certain circumstances, disposable pallets allow a higher packing density on the truck or in the container, which would then have to be weighed up and is usually decided on the basis of costs. Companies that have not yet had much contact with LM in particular have enough to do with the implementation first and the integration of CE would probably have to take a back seat for the time being.