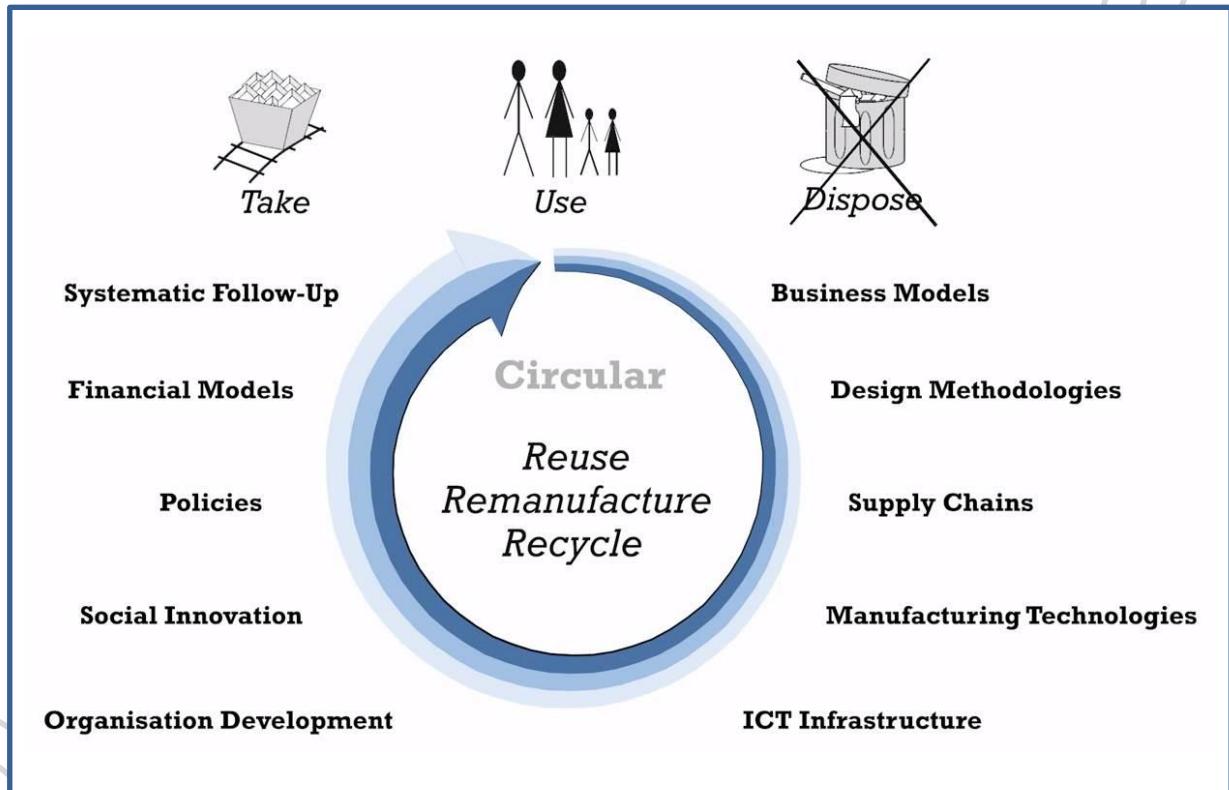


The 10 Essentials of Circular Systems



Keeping in mind the systems approach of Circular Economy implementation the CirBES team emphasizes the following 10 essentials for circular systems.

1

Circular Business Models

For effective implementation of Circular Economy principles the way businesses create value has to be adapted to the changing societal demands. A circular business model entails a shift from product towards service-based or performance-based value generation. In this context manufacturers aim to fulfil customer needs through providing functionality or capacity rather than selling physical products. Value generation through more service-oriented offers and customers being integral part of the manufacturing enterprise are essential characteristics of a typical circular business model.

2

Circular Design Methodologies

Circular design methodologies focus on making products reusable, remanufacturable and recyclable. Responding to these design requirements established design-thinking needs to be exploited and advanced in order to increase efficiency of circular business operations.

3

Circular Supply Chains

Synchronised forward and reverse supply chains are a prerequisite for successful and profitable implementation of Circular Economy principles. Particularly the establishment of reverse flows for used products results in a lot of practical challenges for industry. The effectiveness of reverse operations in turn is highly dependent on the business model and the product design strategy.

4

Manufacturing Technologies for Circular Products

Designing products for circularity is a driver for innovative manufacturing technologies. Taking a product lifecycle perspective means changing the focus from direct production-related cost to an overall product cost perspective which includes all lifecycle phases. Manufacturing technologies need to adequately address circular challenges by considering long life spans of products and frequent upgradeability.

5

ICT Infrastructure for Circular Businesses

Information and communication technologies (ICTs) take a vital role in the implementation of circular businesses. ICTs are pivotal for information management and collaboration among the stakeholders. The more circular practices are adapted, the higher the required degree of integration and collaboration of ICT systems to ensure information flows to all stakeholders.

6

Organisation Development for Circular Businesses

The transformation from linear to circular businesses means changes for organisational structures of companies. In most cases adjustments and additional capabilities will be required to fit circular business demands. Functional roles will evolve and with it the required skill-sets, management approaches and behaviours.

7

Social Innovation for Circular Businesses

Businesses are dependent on consumer choices which can be influenced by social innovation either through entrepreneurial initiatives or non-profit activities. The focus of this essential is to promote ambassadors of circular thinking. Successful social innovations are capable of accelerating the shift from linear to circular businesses.

8

Policies to Support Circular Businesses

Policies that support and facilitate Circular Economy principles are instrumental in motivating stakeholders and streamlining the implementation of circular business approaches. Existing businesses require economic and social incentives as well as encouragement as per legislation in order to initiate and promote transitions.

9

Financial Models for Circular Businesses

In the transition towards circular businesses financial investments are often considered high-risk investments which represent a challenge to current practices of minimal risk investments. Measuring business performance of circular systems requires clear criteria for evaluating financial and environmental viability simultaneously.

10

Systematic Follow-up by Businesses, Governments and Society

To ensure appropriate fit between industry, research and policy-making a formalised mechanism is required in order to monitor, measure and analyse the effective implementation of circular businesses. This follow-up mechanism will be indicative of the pace of transition for Circular Economy implementation as well as a balance between all aforementioned essentials.

For further information and details on

- Trainings
- Industrial analyses
- Implementation

please visit our website: www.cirbes.se



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CirBES is a spin-off from KTH Royal Institute of Technology in Stockholm founded by engineering professionals having backgrounds in manufacturing and sustainability. CirBES operates as a 'change agent' supporting manufacturing industry to facilitate transitions from linear to circular systems.