

Circular Industry 5.0: Regenerative-Dominant (R-D) Logic of Value Creation and Manufacturing

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Abstract: Policymakers and practitioners are realizing that an industrial revolution isolated from the premises of the Circular Economy (CE) and social well-being wouldn't be viable. Industry 4.0 and its short-term outcomes were proven to be insufficient and found to be a reductionist approach to sustainable manufacturing and development. As an anomaly (only a few years after the advent of Industry 4.0), the European Commission named a new paradigm as Industry 5.0 to re-assign the role of industry for social prosperity (Directorate-General for Research and Innovation, 2024). Despite the attempts of prolific research on re-iterating the impact of enabling technologies for a sustainable CE, there is an apparent need for levelling up the discussion with alternative perspectives to value creation (Ivanov, D., 2022). That includes the logic (Vargo and Lusch, 2004) and purpose (raison d'être) perspective to enabling technologies and managerial practices synergies and their relevance to sustainable development. By utilizing the conceptual theory-building method (Meredith, 1993), a maturity-based framework of Circular Industry 5.0 is created for a nuanced understanding on the integration of CE and Industry 5.0 as two evolving concepts. As such, four distinct levels of enabling technologies are abstracted and mapped against four levels of CE from the value creation logic perspective as depicted in Fig 1 below (Appendix). This research adds to the theory by suggesting an alternative and higher-level logic than the Goods-Dominant (G-D) and Service-Dominant logic for value creation; that is called 'Regeneration-Dominant (R-D)' logic. By utilizing the intersection of different streams of literature with the interpretive power of conceptual theory building, this study aims to guide practitioners to make more informed and revolutionary (challenging the status-quo) decisions and innovate their business models towards higher levels of circularity. The implications for manufacturing firms are discussed as Regenerative-Dominant Logic requires challenging the mainstream and linear manufacturing processes that are primarily built on the premises of Goods-Dominant Logic.

References:

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Appendix

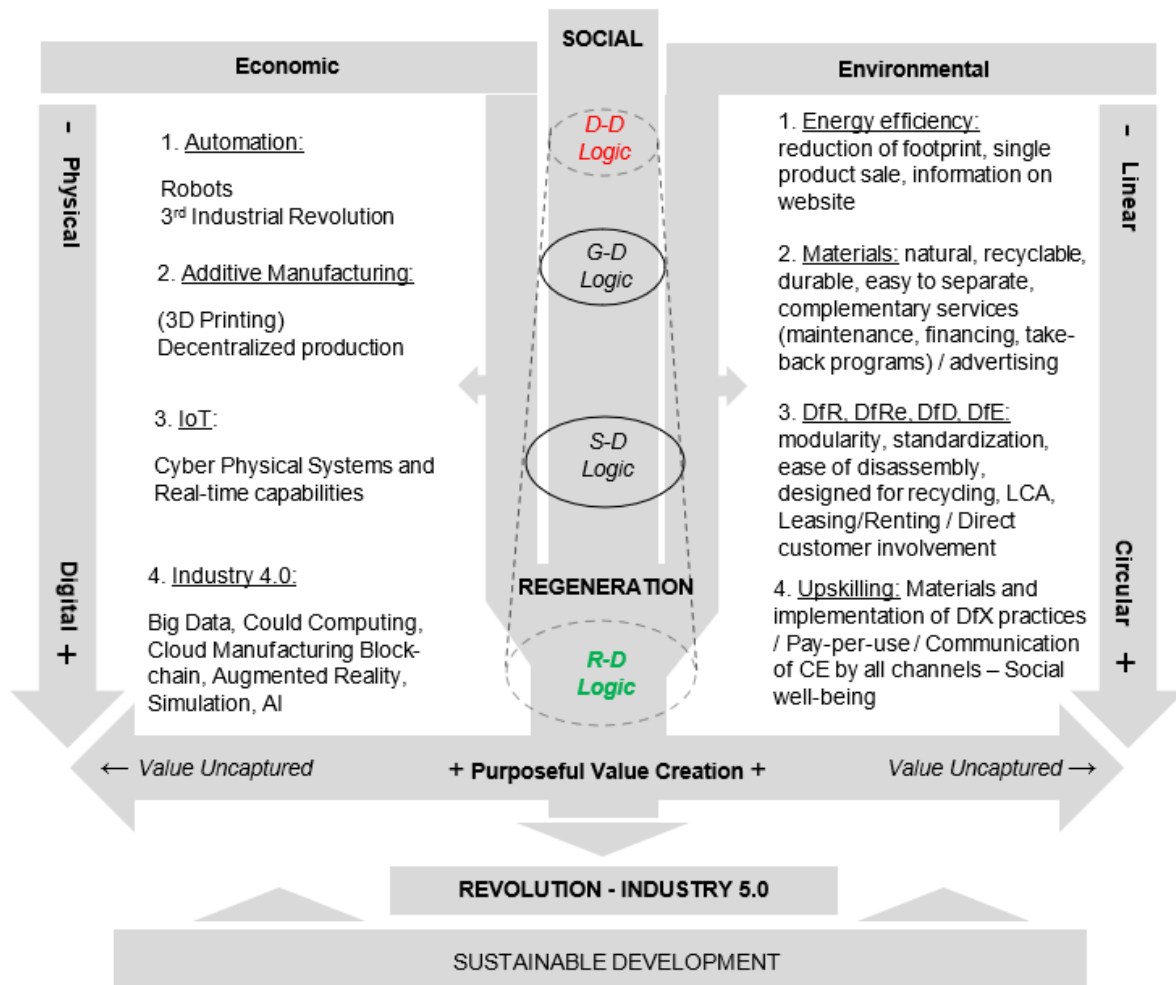


Fig1. Circular industry 5.0 - transformation from degenerative to regenerative dominant logic of value creation

*G-D Logic (Goods Dominant Logic)

*S-D Logic (Service-Dominant Logic)

*R-D Logic (Regeneration-Dominant Logic)

*D-D Logic (Degeneration-Dominant Logic)