

Building PSS design model with Theory Of Constraints (TOC)

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In many cases, new Product-Service System(PSS) design creates new value and imbalance from existing as-is system which has a balanced state but latent demands for change.

As-is system has established balanced relationship between stakeholders tied with implicit and explicit contracts between groups of the system such as company, society and market. But always new PSS needs cost of adaptation for new balance, even though it needs to be changed and the innovative vision is shared. If the power of leadership fails to keep enough momentum to transform the as-is system into new balanced one, the system tries to return back to previous states by stakeholders who feel the previous state guarantees to give more stable benefit than the new one, which may cost more and seems risky.

The leadership of new PSS should provide a vision and efforts to lead stakeholders to new consensus and to desired states. So this study proposes a model to reach break-even point where new PSS design for alternative to-be system starts to be more beneficial than the as-is system.

In this study, we use the business process modeling method to show how the as-is system is transformed into an alternative to-be system with visualized structure of stakeholder relationship and structural constraints analysis. The deriving is from case studies.

In perspective of theory of constraints (TOC), these constraints can be resolved by finding and agreeing on getting to a common goal and strong opportunity. Hence the leadership of new PSS design should consider all external client demands together with internal system demands of stakeholders to make new PSS design satisfy the multi disciplines. So we show how new PSS design defines what is needed to start in the beginning stage, and to keep an adaptive solution for goal getting in the perspective of the break-even point model of the new PSS design.