



UiO : TIK – Centre for Technology, Innovation and Culture
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«Eco-Innovation in an Industry Life-Cycle Perspective: Possibilities for New Insights on Industry Dynamics, Strategy and Policy»

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Presentation Outline

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Introduction: The Issue of Climate Change and Eco-Innovation

- Politically difficult to talk about growth without also mentioning the climate crisis i.e. the new “green growth paradigm” established
 - The concept of «eco-innovation» naturally important:
“The production, assimilation or exploration of a product, production process, service or management or business method that is novel to the organization (developing or adopting it) and which results, throughout its life cycle, in a reduction of environmental risk, pollution and other negative impacts of resources use (including energy use) compared to relevant alternatives” (Kemp and Pearson 2007 p. 7)
 - Better linked and more aligned policies, strategies and analyses are thus needed – calling for different frameworks or combinations of frameworks
- **The paper`s contribution:** use industry life-cycle models as a theoretical starting point to analyze eco-innovation, and with doing so illustrate that this could give us new insight

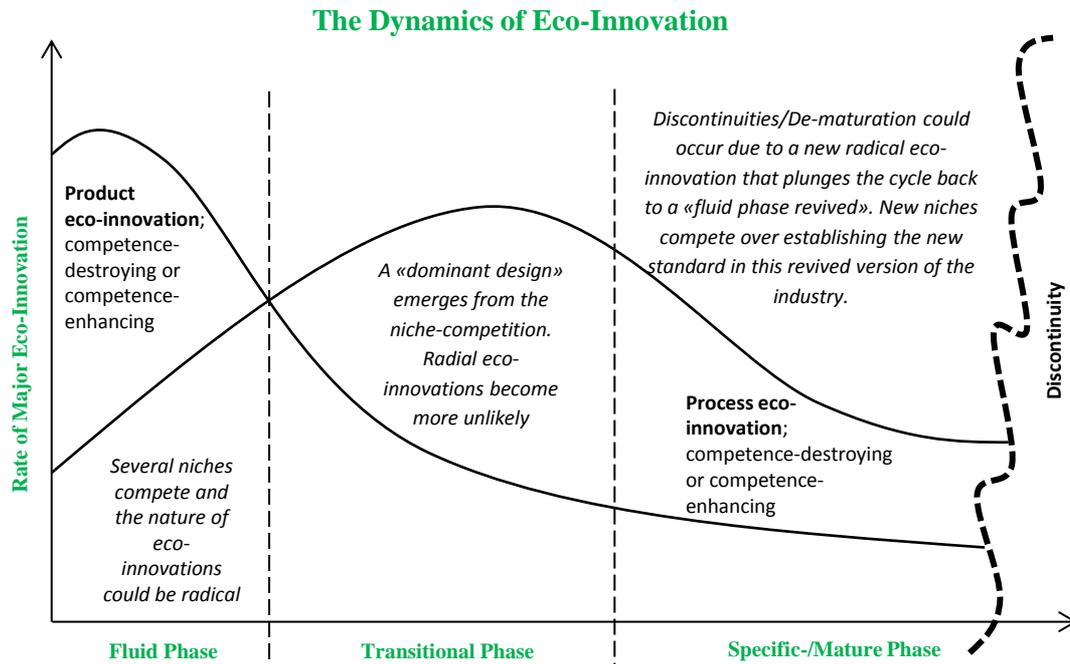


Theories: Industry Life-Cycle (ILC) Models

- **General theme:** dynamics over an industry`s life-cycle as they evolve from a set of market- or technology niches struggling to gain market dominance, to a mature industry clearly steered by dominant players
- **Strengths of this ILC-approach:**
 - (1) The separation of phases over the evolution of industries adding a time-line perspective mostly lacking in innovation-system approaches
 - (2) The explicit characteristics of the dynamics at each phase
 - (3) The inclusion and emphasis on large changes in demand and government policy and action as a driver for industry dynamics
 - (4) The specific industry and innovation characteristics discussed at each cycle-phase; more easily made into quantitative terms than typical system-based approaches



Possible New Insights: Building on ILC-Models



- The transition towards the specific-/mature phase is crucial
- Out of many niche-innovations struggling to become the dominant one, the eco-innovations are not necessarily the best-choice from a purely economic view
- Intervening with policy instruments before they reach maturation, and thereby help facilitate the establishment of environmental *friendlier* technologies or products, could perhaps play a crucial role in the transition



Possible New Insights: An Example of Policy Evaluation

- **Example;** use the ILC-models to evaluate implemented policy instruments according to cycle-phases; *Do the effectiveness of policy instruments differ between industries at different stages in the cycle?*
 - **If it is so;** then these instruments should perhaps also vary in its implementation?
 - **An extreme example:** let us say that e.g. subsidies are found to have an effect *only* on firms in industries in their specific phase. Then changing the policy and implementing this instrument for firms *only* in this phase of their cycle, would be cost-effective (*such a study, see Chiang et al 2012 on the effects of tax-credits*)
 - The idea that cycle-phase could be useful as a “group-division mechanism” in policy discussion, is in principle not that different from discussing sector-specific policies
- The cycle-dimension is simply just another way of ordering the discussion



Implications for Further Work: Some Issues With This ILC-Way of Thinking

1. The actual validity in substituting “eco-innovation” for innovation within the framework
2. A discussion of what types of products, technologies and sectors the ILC-models are actually suited to analyze
3. Data availability and measurement of eco-innovation related data could be a practical issue
4. The indicators suggested could be insufficient and not the most useful for analysis (the indicators as they are now also require a specification, as they are connected to ordinal values)
5. Connected to policy evaluation; as it is quite clear how subsidies, tax-credits and other quantifiable policy instruments can be incorporated into the analysis, it is not clear how regulation would be included





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Thank You for the Attention!

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