Understanding Eco-innovation and Green Business Models

Eco-innovation is considered a still more important competitive strategy to maintain production in high-cost economies such as the Danish one. Within the studies of economics of technological change only little research has been undertaken on the dynamics of eco-innovation. Rigorous statistics and definitions of ecoinnovation are lacking leading to much confusion and methodologically weak empirical analyses. This paper seeks to remedy this by offering a definition and taxonomy of eco-innovations and discussing the implications for green business model thinking, bringing in examples of Danish successful and less successful green business models.

The taxonomy entails seven main types of eco-innovations which are defined by the role these innovations play on the market, i.e. they represent different ways to attract green value. The categorization hence differs markedly from existing taxonomies of environmental technologies which has taken a starting point in the environmental effects of various technologies. The seven categories are:

1. Curative eco-innovations - add-on (clean-up, recycling and resource handling)
2. Integrated continuous process and product eco-innovations (cleaner production and products)
3. User-oriented product eco-innovation (enables cleaner consumption)
4. Discontinuous product eco-innovations (alternative green trajectories)
5. General purpose eco-innovations - enabling pervasive eco-innovation (ICT, biotech, nano)
6. Macro-organizational eco-innovations - reorganizing production and consumption patterns (cities/communities, physical planning, symbiosis)
7. Business model eco-innovation (green value creation by novel financing or ownership modes)

The taxonomy may be used to understand the conditions for creating green value for different types of companies and industries and how this is changing over time as the green economy matures. The complementarities and competition between these eco-innovations are significant for determining the rate and direction of green economic change. Understanding these processes is essential in developing efficient green business models and even advanced green Danish companies struggle with this.

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