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Digital Technology and Optimal Distinctiveness in Radically Innovative Products

Yasser Rahrovani
Western University, yrahrovani@ivey.ca

Haoyue Gu
Western University, egu.phd@ivey.ca

Robert Austin
Ivey Business School, raustin@ivey.uwo.ca

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Digital Technology and Optimal Distinctiveness in Radically Innovative Products

TREO Talk Paper

Yasser Rahrovani
Ivey Business School
yrahrovani@ivey.ca

Haoyue Gu
Ivey Business School
egu.phd@ivey.ca

Robert D. Austin
Ivey Business School
raustin@ivey.ca

Abstract

Digital technology has enabled radical changes of traditional products, such as digital theatres or electric vehicles (Gu et al., 2022; Wang et al., 2022). However, balancing compatibility and distinctiveness has always been a challenge for radical innovations (Rogers, 2003). Innovations that are significantly compatible with established products struggle to stand out in the market, while those that are too distinctive may be difficult for users to identify with and adopt.

This tension has motivated exploring the concept of optimal distinctiveness (OD), which refers to balancing the competing needs for “assimilation” and “differentiation” (Zuckerman, 2016). OD has become more important with digitalizing and electrifying traditional products by creating distortions in product attributes and making it more challenging to interpret. For example, the introduction of electric vehicles (EVs) has created distortion and, subsequently, variation in car identity: as a “functional tool” for transportation, an “iPhone on wheels” (for those against electrification of their exotic cars), or a “mobile office” (Gu et al. 2022).

Our paper examines the concept of optimal distinctiveness (OD) in the context of radical digital innovations. While existing research has mainly treated OD as a holistic construct at the product level, the paper argues for a dynamic, multi-level understanding of OD in radical innovations. The authors propose that designers strategically manipulate product attributes, such as functions, aesthetics, relationships, and categories, to influence product distinctiveness. Contrary to the assumption that clarity and explicitness enhance adoption, the paper suggests that intentional confusion or the partial hiding of innovation attributes can facilitate product adoption. Drawing on information processing theory, the authors analyze secondary data from academic papers and published case studies to articulate a typology of manipulation tactics employed by designers to steward product distinctiveness. Our paper offers insights into how designers leverage digital technology to manage the tension between compatibility and differentiation in radical innovations, shedding light on the nuanced mechanisms underlying OD for radical innovations.

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