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The response strategies of incumbent mobile network operators on the disruptive potential of public W-LAN in Germany

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ABSTRACT

This paper examines how three incumbent mobile network operators (MNOs) in Germany responded in terms of their strategy to the emergence of the wireless local area network (W-LAN) technology and how they interpreted this potentially disruptive technology in their own strategic context. Additionally, prior empirical results and forecasts on the limited disruptive potential of W-LAN for the German MNOs lacked persuasive firm-level evidence to distinguish the real reason for the presented observations and analysis. So far it was unclear whether the observations were caused by successful response strategies of incumbent MNOs or by the inherent limited disruptive potential of the W-LAN technology. For this purpose case studies of three major MNOs in Germany were performed to assess and compare their respective response strategies. Using the theoretical framework of disruptive technology, the results were evaluated in a cross-case analysis to study how these firms interpreted and reacted to the potential disruptiveness of W-LAN. The results indicate significant differences for the respective MNOs between their perception of W-LAN as a potential disruptive technology, their strategic development processes inside the organisation to understand the potential impact of W-LAN on their respective business model, and to enforce an appropriate response strategy and structural implementation. This incumbent heterogeneity depends primarily on their idiosyncratic strategic and structural context. These findings reveal that the incumbent MNOs in Germany were aware of the disruptive technology concept but did not react in a theory-conform way. However, since W-LAN had a sustaining impact on the MNOs and their response strategies followed sustaining reaction patterns, earlier studies, which show a limited disruptive potential of W-LAN for the German MNOs, are supported.

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1. Introduction

The impact that wireless local area networks (W-LANs) have on incumbent mobile network operators (MNOs) in Germany and how they reacted in terms of motivation to respond, development of W-LAN strategy, and structural implementation of the W-LAN strategy is especially interesting, because of the still going discussion of the role of public W-LANs hotspots or hotzones and their impact of the MNOs' services enabled by 3G and its successors (Gunasekaran & Harmantzis, 2008; Lehr & McKnight, 2003). The existing studies regarding the W-LAN technology, its disruptive

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potential, and the incumbents' and entrants' success in the W-LAN hotspot market so far are analysing the industry level or aim to make ex ante assessments (Christensen, Anthony, & Roth, 2004; Huesig, Hipp, & Dowling, 2005; Hüsigg, 2009). However, since the investigation on firm level was missing so far, the picture remained incomplete and the results ambiguous. Prior empirical results and forecasts on the limited disruptive potential of W-LAN for the German MNOs reported by other scholars lacked persuasive firm-level evidence to distinguish the real reasons for the presented observations and analysis. It is unclear so far whether the observations are caused by successful theory-adequate response strategies of incumbent MNOs or by the inherently limited disruptive potential of the W-LAN technology. The goal of this study is to fill this empirical gap, and to analyse how the incumbent MNOs in Germany interpreted the disruptive potential of W-LAN and how they linked its effects to the company's strategy development and structural implementation. A case study research approach was used, focusing on a cross-case analysis to compare the different characteristics and interpretations at the specific MNO level with regard to the theory of disruptive technological innovation by Christensen, recent extensions, and other research streams that build on Christensen's theory. As a result, this paper seeks also to contribute by investigating incumbents' response behaviour to changes induced by the potential disruptive technology W-LAN. It aims at enhancing the theoretical understanding not only of how incumbents develop their strategy under these circumstances, but also of why they arrive at specific strategic decisions and their structural implementation. It attempts to answer the following research questions:

- What type of impact emerging public W-LANs have on the response strategy of incumbent MNOs in the German telecommunication market? How and why did the incumbent MNOs develop their idiosyncratic response strategies and implementations?
- Were the empirical results and forecasts on the limited disruptive potential of W-LAN for the German MNOs reported by other scholars caused by theory-adequate response strategies of incumbent MNOs or by the inherently limited disruptive potential of the W-LAN technology?

To achieve this objective, the paper in hand is structured as follows: a brief introduction to disruptive technology theory; past research on the disruptive potential and impact of W-LAN for the German MNOs and its limits; theory development; methodology; presentation and discussion of results; conclusions; and recommendations for future research.

2. Introduction to the disruptive technology theory

What does the concept of “disruptive technology” or “disruptive innovation” actually mean? It refers to key issues in industry and company structure, business processes, and resource allocation that restrain companies when it comes to dealing with technologies that do not fit in their already established business model. Christensen (1997) refers to this phenomenon extensively and describes five key principles explaining why disruptive innovation is so difficult to identify:

1. **Resource allocation:** A business becomes successful by focusing its resources on opportunities that reflect the most profitable needs of the established market, and by avoiding the wasteful allocation of the same scarce resources on less profitable opportunities.
2. **Market size:** The initial market size of a disruptive opportunity is in general too small to justify any significant investment or to draw management attention. Therefore, many large companies adapt to a strategy of waiting until markets achieve an interesting size.
3. **Market intelligence:** The new opportunity does not provide much information over the potential market volume, especially market size, margins, and anticipated future development, which play an outstanding role in the assessment of business plans (Christensen & Raynor, 2003). This further complicates the allocation of resources.
4. **Organisational capability:** An incumbent organisation is already equipped with resources, processes, and values that are aimed at producing its existing products and services in an effective and efficient way and are aligned with its core business model (Christensen & Raynor, 2003).
5. **Speed of improvement:** Many incumbent companies do not realise that they are over-satisfying the needs of their customers while they try to stay ahead of competition. Since they move to the higher-performance, higher-margin markets, they neglect at the same time to cover lower price points where competitors with disruptive technologies can enter the arena. Even if disruptive technologies seriously underperform today, relative to customer expectations and the prevalent technology, they may become directly performance-competitive tomorrow.

Christensen and Raynor (2003) refer to two forms of innovation: disruptive and sustaining innovations. The key differentiator between these two forms is that all sustaining technologies improve the performance of incumbent market products along the same lines of performance trajectories that have historically mattered to customers. Disruptive innovation, on the other hand, brings a fundamentally different value proposition to the market since disruptive technologies are defined as technologies that disrupt an established trajectory of performance improvement, or redefine what performance means

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