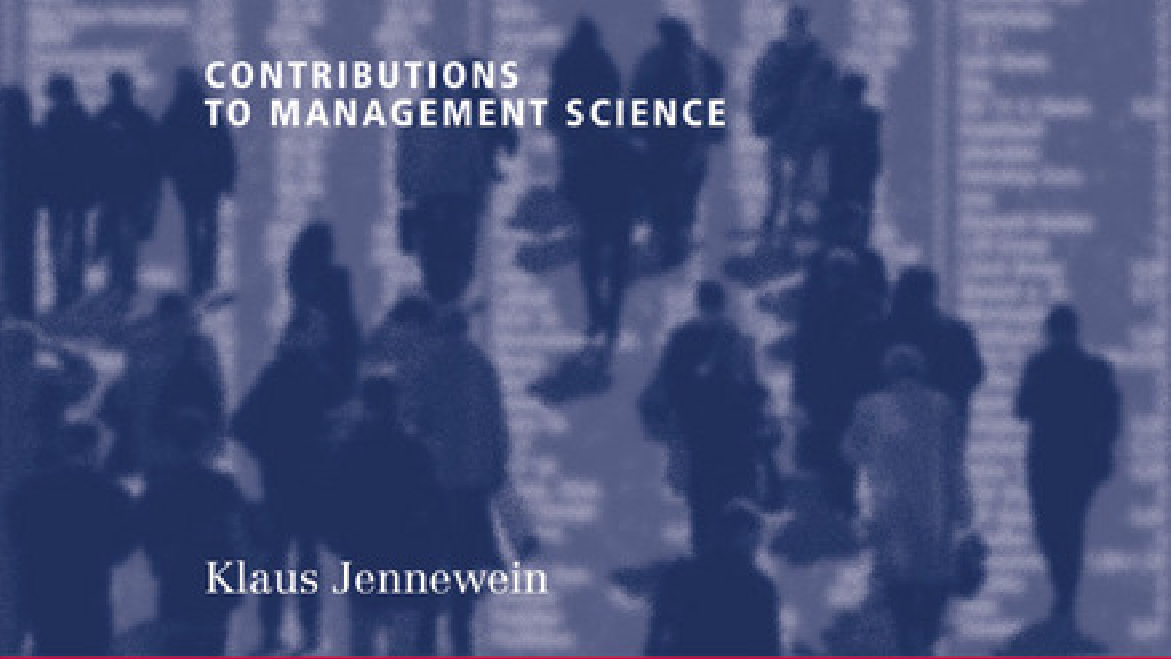

CONTRIBUTIONS
TO MANAGEMENT SCIENCE

Klaus Jennewein

Intellectual Property Management

The Role of Technology-Brands in the Appropriation of Technological Innovation

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Intellectual Property Management

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With love to my wife
Amélie and my son Léo

„Ein hohes Kleinod ist der gute Namen“

'A valuable gem is the good name'

(Friedrich Schiller,1759-1805)

Preface

Innovation is a source of competitive advantage. In other words, firms may leverage innovation to generate rents, at least temporarily. And this is intended to be a self-sustained business model: part of the rent extracted from the market may be re-invested into new technological developments which in turn permit additional innovations, thus regenerating the sources of rents. This is the positive loop of innovation.

In this sense, business would be a permanent hunt for innovations, in search of rents.

Yet, innovations need to be protected if firms want to benefit from rents over long periods of time. However, the strategic management literature tends to suggests that patents are a weak protection against aggressive imitators. Secrecy may help but we also know that technology ends up leaking in most cases. Speed in new developments to cut "time to market" may be another way of protecting the technological advance of the firm. But again, this may not be enough as start-ups may out-compete the established firm in the race for innovation.

This is where Dr. Klaus Jennewein's key idea comes into the picture. The core of his thesis is that brand equity may be combined to technological protections such as patents to build a multi-layer, complex, intricate shield to protect the sources of rents against competitors and imitators.

Dr. Jennewein presents two detailed case studies which remarkably feed into his argument. One case is Bayer's aspirin. How come a drug company is still able to extract rent from an innovation which was first introduced to the market over a century ago? How come Bayer still has a dominant market position when the patent protection disappeared so long ago? How come producers of the generic molecule were unable to win against the pioneer of Aspirin?

The second case study tells us the story of the routers of Cisco Systems in the network business. There we see how a newcomer, a start-up, was able to build a long-lasting competitive advantage, based on systematic effort to leverage technological innovation, while carefully building and defending the reputation of the company, its products and its services. As a result, Cisco became the *de facto* standard in the profession, meaning both innovative technologies and reliable services. The technology received the backing of the brand name, and vice versa. When Cisco was badly in need of technological expertise, the name of Cisco helped the company attract and retain the best talents, including through a campaign of acquisition of targeted companies.

In the tradition of grounded theory, Dr. Jennewein actually builds from these two in-depth, rich and detailed case studies to present a life cycle model. The model shows how intangible technological assets may be intertwined over the years with brand equity to build a long lasting protection to innovations. He shows how the start-up firm focuses on bringing a new technology to the market and enjoys a temporary monopoly, that of the innovator. More innovations – mostly process and then incremental innovations – are generated as the start-up consolidates its position as a recognized pioneer. Interestingly enough, this recognition brings along an emerging brand name which is going to become increasingly important as imitators come into the picture. The brand name helps sustain market shares and significant margins, yielding enough returns to invest in new developments. When radical innovation strikes again, the company is now an incumbent. It cannot fully rely on its technological capabilities, as these are only partly relevant to the new context. The incumbent thus primarily relies on its brand name which helps the company bridge over towards the new technological paradigm.

In a way, K. Jennewein is celebrating the wedding of the patent with the brand, the technology with the market reputation, the engineer with the marketer. Dr. Jennewein further suggests to organize the corporation in such a way that this marriage be successful. Instead of letting the development Engineer deal with technology in his unit, the Lawyer at the headquarters deal with patent and other forms of technological protections, the Marketer in his marketing departments deal with brands, K. Jennewein recommends to pursue an integrated intellectual property strategy. He insists to show that the multilayer shield to protect the innovations must be crafted by a coordinated team working hand in hand over the years. This is actually not what I observe in most companies today. To our opinion, this is the core contribution of this book.

This is a brilliant and convincing book with many concrete implications for both business practitioners and academics in the field.

Prof. Dr. Thomas Durand
Ecole Central Paris

Prof. Dr. Alexander Gerybadze
Universität Hohenheim, Stuttgart

Acknowledgements

"On ne voit bien que par le cœur. L'essentiel est invisible pour les yeux"

Antoine de Saint-Exupéry

According to the currently ongoing scientific discussion in the field of strategic and in particular technology management, intangible assets and especially intangible technological assets represent the most important strategic asset for business corporations. However, although the given high strategic importance of intangible assets, many authors criticise the inefficiency of the existing system of intellectual property right protection. Empirical studies have clearly revealed that singular patent right protection does generally not enable companies to efficiently and effectively appropriate the returns of their intangible technological assets. The growing awareness of the shortcomings of legal protection rights has encouraged the investigation of alternative protection modes with a mostly technological focus. On the other hand, the investigation of the role of company specific market based assets in the appropriation of returns of intangible technological assets has been almost entirely neglected by research, so far.

This lack of research has motivated the here presented investigation of the role of brand equity in the appropriation of intangible technological assets. The investigation reveals by an empirical and theoretical analysis the complementary relationship between technological and market based assets, and shows how this relationship affects the ability of companies to appropriate the returns of technological innovation. The investigation is placed at the intersection of strategic management, technology management, and the management of brand equity and builds upon the resource based view.

A major endeavour such as this work which has been handed in as PhD thesis at the University of Hohenheim at Stuttgart and the Ecole Central Paris would never have been possible without the support and guidance of many people which I want to thank here.

The research was undertaken during my time as PhD student at the Centre of International Management and Innovation at the University of Hohenheim and the Laboratoire Stratégie et Technologie at the Ecole Centrale Paris. My first and greatest debt of gratitude is to Prof. Dr. Thomas Durand and Prof. Dr. Alexander Gerybadze my two PhD supervisors. It was their creative and professional opinion as well as the sufficient freedom which have inspired and enabled the realization of this endeavour. Prof. Dr. Bertrand Quélin of Ecole HEC as well as Prof. Dr. Helmut Kuhnle and Prof. Dr. Ulrich Schwalbe at the University of Hohenheim I want to thank for their constructive questions and remarks.

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Klaus Jennewein

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