DISRUPTIVE ACTIVITY IN A REGULATED INDUSTRY

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DISRUPTIVE ACTIVITY IN A REGULATED INDUSTRY: THE CASE OF TELECOMMUNICATIONS

PETER CURWEN

JASON WHALLEY

Newcastle Business School, Northumbria University, Newcastle, UK

PIERRE VIALLE

LITEM, Univ Evry, IMT-BS, Université Paris Saclay, Evry, France

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This book is dedicated to Colin Blackman, the retiring editor of Emerald journal info, *for his sound advice over more than a decade.*

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List of Abbreviations

AGR	Adjusted gross revenue
ARPU	Average revenue per user
BEREC	Body of European Regulators for Electronic Communications
CDMA	Code division multiple access
CEO	Chief executive officer
CMA	Competition and Markets Authority
DiD	Difference in differences
DoJ	Department of Justice
DoT	Department of Telecommunications
EBIT/LBIT	Earnings/loss before interest and taxation
EC	European Commission
EU	European Union
FCC	Federal Communications Commission
GB	Gigabyte
GHz	Gigahertz
GSM	Global system for mobile
HAT	Hutchison Asia Telecommunications
HTIL	Hutchison Telecommunications International Ltd
IP	Internet protocol
IPO	Initial public offer
ISP	Internet service provider
ITU	International Telecommunication Union
IUC	Interconnection usage charge
LTE	Long-term Evolution
LTE-A	LTE-Advanced

M&A	Mergers and acquisitions
Mbps	Megabits per second
MMS	Mobile messaging service
mmWave	Millimetre wave
MNO	Mobile network operator
MHz	Megahertz
M2M	Machine-to-machine
NGN	Next generation network
NCLAT	National Company Law Appellate Tribunal
NCLT	National Company Law Tribunal
OTT	Over-the-top
QoS	Quality of service
RAN	Radio area network
SEB	Securities and Exchange Board
SDR	Strategic debt restructuring
SMP	Sgnificant market power
TDD	Time dimension duplex
TDSAT	Telecoms Disputes Settlement & Appelate Tribunal
TRAI	Telecom Regulatory Authority of India
UMTS	Universal mobile telecommunications system
VHA	Vodafone Hutchison Australia
VoIP	Voice over Internet Protocol
Wi-Fi	Wireless fidelity
WiMAX	Worldwide interoperability for microwave access
2G	Second-generation
3G	Third-generation
4G	Fourth-generation

About the Authors

Peter Curwen joined Sheffield Hallam University in 1970. He took early retirement in 2002 having risen to the post of Professor of Economics. He then took up the post of Visiting Professor of Mobile Communications, first at Strathclyde University and subsequently at the Newcastle Business School, finally retiring in 2017 to become a 'gentleman scholar'.

Jason Whalley joined Newcastle Business School in 2013 as Professor of Digital Economy, after a brief period as a consultant followed by more than a decade spent at Strathclyde University. His research focuses on the telecommunications industry. He has published on the development of broadband markets, the Internet of Things and the use of ICT in the Himalayas.

Pierre Vialle is Professor of Management at Institut Mines-Télécom Business School in France. He is Director of the School's Knowledge, Innovation & Network Dynamics (KIND) research group within the LITEM Lab. His research focuses on innovation dynamics within the digital economy.

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Preface

This book has its origins in a series of articles written by Peter Curwen and Jason Whalley in the journal *info: The Journal of Policy, Regulation and Strategy for Telecommunications, Information and Media* published by Emerald that evolved into *Digital Policy, Regulation and Governance* from Volume 19 onwards commencing in January 2017. At the time, these articles were not written in order specifically to shed light on the issue of disruptive activity. However, it became apparent to the authors in early 2018 that disruption was a common theme that ran through a number of articles. A third author, Pierre Vialle, was also working with Jason Whalley on material that encompassed the theme of disruption and hence the idea was born of compiling a book about disruptive activity in the telecommunications industry.

There is nothing new about the concept of disruptive activity. Historically, a term that was used to describe a key aspect of the phenomenon was creative destruction – customarily associated with Joseph Schumpeter (Wikipedia, 2018) – whereby inefficient old ways of doing business would be displaced by newer, more efficient methods. Entire industries could be affected such as transport which was revolutionised by the arrival of the railways in the late nineteenth century and, more recently, the telecommunications industry which is the subject of this book. However, this book is not about how new technology has revolutionised the telecommunications industry; rather, it is about how disruptive companies have entered the industry – in this case, primarily the mobile sector – and thereby affected its structure and the treatment of customers.

In dealing with the effects of disruptive activity, a number of considerations have to be taken into account. In the first place, disruption largely takes place in a free market – in other words, it is essentially a scenario whereby a winner can acquire a potentially dominant share of the market while governments look on indulgently. However, there is not necessarily a single winner if a new technology cannot be protected by patents or where governments decide to intervene in order to prevent a monopoly. Hence, whereas in a free market the way is always open in principle for a new entrant to disrupt the market by challenging established players (incumbents) via improved technology and/or a more attractive model of service provision, this is not necessarily the case if there exist any market interferences that confer a degree of monopoly power.

In the telecommunications industry, creative destruction and disruptive activity are effectively uneasy bedfellows. On the one hand, a long-established technology – using fixed-wire connections – is increasingly usurped by one based upon mobile connectivity while, on the other hand, the restrictions that limited competition in the former case are retained in the latter.

The mechanism that restricts competition in both cases is the issuance of licences by regulators that are ultimately agents of government. This mechanism is not limited to telecommunications – it applies to utilities of all kinds where public welfare considerations overrule the benefits of free competition. However, it is important to bear in mind that there is no requirement that public ownership is involved. Typically, telecommunications was originally provided – via fixed-wire links – by public corporations, but this was not the case in the USA and the privatisation of British Telecom (now BT) in the UK set off a wave of public-to-private transfers of ownership across Europe even if, initially, governments retained 'golden shares' to prevent an excess of free market zeal.

It is no doubt fair to argue that since the number of industries operating under largely free-market conditions – albeit probably with some controls applicable to antisocial side-effects (adverse externalities) – greatly outnumbered those that were tightly regulated via licences or some equivalent system of state control, the literature was bound to concentrate upon these industries. Nevertheless, the utilities alone comprise a significant share of a modern economy so the almost total absence of discussion about how to disrupt an industry where licensing is in force comes as something of a surprise.

This book attempts to address this omission. It does so essentially via a series of case studies on the basis that the issue is empirical rather than theoretical. The book is not so much interested in what might happen in a licensed industry but in what actually does happen insofar as this can be ascertained by a study of past and current experience. One major reason for this is that, in the case of telecommunications, the emphasis must be upon what has happened since it became possible to transfer data at high speed via mobile devices given that the fixed-wire links in most countries were traditionally provided by a state-owned monopoly.

In this respect, one key factor was the issuing of so-called '3G' licences in the period commencing in the year 2000. It took many years for these licences to be issued on a worldwide basis but the process was relatively quick among the more advanced economies. And then, in 2007, came the launch of Apple's iPhone which introduced a period during which an operator's ability to provide this handset became its main competitive advantage. Subsequently, high-speed packet access (HSPA) made it possible to access video and other services requiring higher-speed access and smartphones that were effectively mini computers became commonplace. But, inevitably, with every incumbent operator able to provide the same technology – albeit with some variations in coverage – and the same handsets and applications, the issue of how an operator could distinguish its service offering became paramount.

The book analyses the response in a wide range of countries but places most emphasis upon the main disruptors led by Hutchison Whampoa – now CK Hutchison – and the main countries such as France and India where disruption has occurred. As these case studies demonstrate, it is difficult to draw conclusions that encompass the entire industry since while it is true that disruption has invariably taken the form of price competition and the provision of non-standard packages of services, no two countries are truly alike. For example, what is happening in India today – see Chapter 7 – has never happened previously anywhere else in the world.

This makes it almost impossible to construct a general theory of disruption in a regulated industry and this book does not attempt to do so. It should be noted in this regard that there is considerable controversy surrounding attempts to formulate such a theory even in the context of a free market – see Chapter 1 – let alone a regulated one, although the concluding chapter tries to pull together the various ideas that permeate the book. A second major issue is that the nature of service provision is undergoing something of a revolution. Whereas, historically, an operator largely confined itself to either fixed-wire or mobile provision, the trend is increasingly towards the provision of packages, particularly quad-play – see Chapter 5. Since the arrangements that operators need to make in order to do this are for now in a state of flux, it is too early to draw any definitive conclusions about the role of disruptive activity in the multi-play market.

The book is structured as follows. Chapter 1 brings together some of the literature concerning disruptive behaviour. This begins with an analysis of disruption in the free market, but there is only a limited review of the contributions to this debate as it has very limited relevance to what happens in a market regulated via licences. The chapter ends with the analysis presented by Ofcom in the UK which is the only body to have examined how disruption occurs in such a scenario. This underpins the content of Chapter 2.

Chapter 2 comprises a detailed analysis of the recent Ofcom document concerned with disruption in mobile markets with a view to establishing whether its conclusions were valid at the time of writing and whether recent developments need to be taken into account. The chapter goes on to identify the operators that have behaved in, and are currently operating in, a disruptive manner, as well as the countries in which disruption either has taken place or is currently taking place.

Chapter 3 is an extensive study of how new entry can be effected through the issue of mobile licences within the context of Europe, widely defined. It contains an extensive database compiled by the authors covering a lengthy time period. It concludes that new entrants have rarely succeeded in establishing themselves via the acquisition of new licences and that in the case of the most recent technology, long-term evolution (LTE), known alternatively as 4G, the authorities have largely ceased even to try.

Chapter 4 moves on to consider a different aspect of regulation, namely antitrust. In principle, disruptive activity can have its roots in the acquisition of an existing mobile incumbent – as against a licence – by a new entrant, particularly as the acquired incumbent is likely to have the smallest share of the market. Alternatively, one incumbent may seek to take over another or two incumbents may attempt to merge in order to build a market share comparable to their larger rivals. Whereas market structure is not directly affected by the former activity, takeovers and mergers clearly have structural implications. The chapter considers the situation in Europe – there is also an analysis of the USA in Chapter 5 – via a series of country case studies.

Chapter 5 picks up on the issue of multi-play – that is, a package containing some combination of fixed-wire and mobile access, high-speed broadband and TV. Until fairly recently, mobile, for example, was a specialised operation in the hands of a few large operators in each country. Equally, these operators tended not to own fixed-wire networks or to provide TV. However, as mobile has become increasingly the delivery of a very similar service, competition has switched to the provision of multi-play where there is far more flexibility in terms of the pricing of different packages. Hence, the potential for disruption is greatly increased.

Chapter 6 comprises a case study of the situation in France where there has recently been considerable disruptive activity by a company that entered the market on the back of an established reputation in other parts of the telecommunications sector.

Chapter 7 comprises a case study of India. This was for a considerable period a market with far too many operators, in good part due to its unusual policy of offering regional rather than national licences. With a number of large incumbents coexisting with what were effectively regional operators and some state ownership, it was difficult to envisage what could upset this uneasy equilibrium. And then Reliance Jio arrived on the scene. Starting from scratch, it set out to become the market leader by the simple, albeit highly unprofitable, method of offering free connectivity. Disruption does not come in a more brutal fashion than this.

Chapter 8 analyses the history of the 'great disruptor', the former Hutchison Whampoa now known as CK Hutchison. A significant difference between itself and Reliance Jio is that Hutchison sought to acquire market share primarily via the offer of lower prices than its rivals in multiple markets, whereas Reliance initially charged nothing at all in a single, albeit much larger market. As the study reveals, this was nevertheless not a profitable exercise, and much less market share was gained than had initially been expected, effectively causing Hutchison to examine and occasionally see through to completion the alternative strategy of mergers with rivals.

Chapter 9 serves to bring together the lessons learned from the preceding chapters. Because there are considerable differences between the operators and countries involved in the case studies, there is no attempt to produce a general theory of disruption in regulated markets, although that may emerge in due course as a result of further research.

It is worth noting, finally, that the contents of this book have been continuously updated up to the point at which the manuscript was submitted in December 2018. Many monographs rely upon data from years long past. However, the telecommunications industry is in a permanent state of flux and the authors have accordingly made it their business to present a picture of the industry only a matter of months prior to publication.

Reference

Wikipedia. (2018). *Creative destruction*. Retrieved from https://en.www.wikipedia.org/wiki/Creative_destruction. Accessed on July 16, 2018.