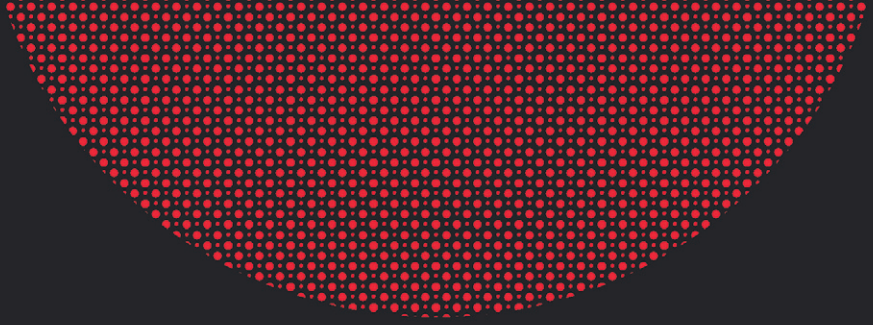
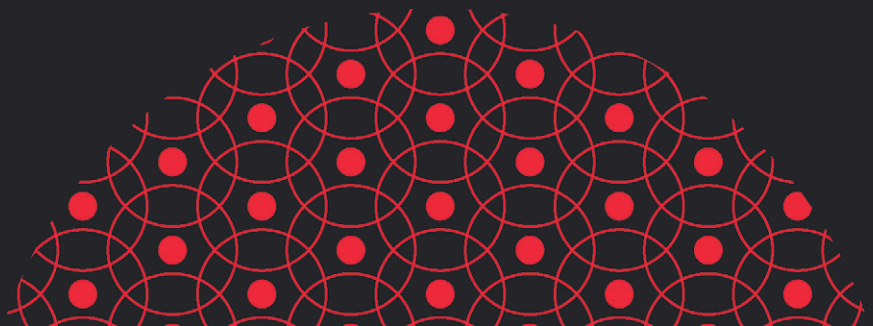


EMERALD POINTS

FROM MICROVERSE TO METAVERSE

Modelling the Future through Today's Virtual Worlds

LEIGHTON EVANS
JORDAN FRITH
MICHAEL SAKER



FROM MICROVERSE TO METAVERSE

This page intentionally left blank

FROM MICROVERSE TO METAVERSE

Modelling the Future through Today's Virtual Worlds

BY

LEIGHTON EVANS
Swansea University, UK

JORDAN FRITH
Clemson University, USA

And

MICHAEL SAKER
City, University of London, UK

United Kingdom – North America – Japan – India
Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2022

Copyright © 2022 Leighton Evans, Jordan Frith, and Michael Saker.
Published under exclusive licence by Emerald Publishing Limited.

Reprints and permissions service
Contact: permissions@emeraldinsight.com

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-1-80455-022-9 (Print)
ISBN: 978-1-80455-021-2 (Online)
ISBN: 978-1-80455-023-6 (Epub)

ISOQAR certified Management System, awarded to Emerald for adherence to Environmental standard ISO 14001:2004.

Certificate Number 1985
ISO 14001

INVESTOR IN PEOPLE

CONTENTS

This page intentionally left blank

ABOUT THE CONTRIBUTORS

Leighton Evans is an Associate Professor of Media Theory at Swansea University. He is the author of *Locative Social Media: Place in the Digital Age* (2015), *The Re-Emergence of Virtual Reality* (2018) and the co-author of *Location-Based Social Media: Space, Time and Identity* (2017) and *Intergenerational Locative Play: Augmenting Family* (2021).

Jordan Frith is the Pearce Professor of Professional Communication at Clemson University. His primary research focuses on mobile media and infrastructure. He is the author of three books and more than 30 peer-reviewed journal articles in a variety of disciplines. His third book – *A Billion Little Pieces: RFID and Infrastructures of Identification* – was published by MIT Press in Spring 2019.

Michael Saker is a Senior Lecturer in Media and Communications at City, University of London. He is co-author of *Location-Based Social Media: Space, Time and Identity* (2017) and *Intergenerational Locative Play: Augmenting Family* (2021).

This page intentionally left blank

ACKNOWLEDGEMENTS

Leighton: My partner, Carly, deserves all the praise in the world for her patience and kindness while getting this book done – you are the best and most wonderful person in the world. Thank you. Thanks also to my family and friends. My two co-authors, Jordan and Mike, have made this such an easy and fun book to work on. My colleagues at Swansea University deserve a mention, especially William Merrin who was a very useful sounding board for ideas as always. Thanks to Rob Long for ideas and cricket chats. My PhD students Sarah Williams, Bonny Apunyu, Evelyn Song and Rita Hu kept me on my toes.

Jordan: First off, I'd like to thank my two co-authors Mike and Leighton. They have been excellent collaborators and a dream to write with. I'd also like to thank my wonderful wife Stevie who is the best partner anyone could ask for. She's always supportive when I have work to do, and she's maybe the smartest person I know. She doesn't care even a bit about VR, but she'll listen and say random things that always make me think. Finally, I want to thank my three rescue pups: Daisy, Tinkerbell and Peaches. They sit with me while I write and are patient while I think through what I want to say. And most notably, they HATE VR and love to bark at me whenever I have a headset on. Their barking is a nice way to stay grounded in the physical world.

Mike: First, I want to say a huge thanks to my co-authors Leighton and Jordan. I have been fortunate enough to work with both on several occasions, and it never feels like work. When we started this project, I was slightly apprehensive about the deadline. Then I remembered who I was writing with. Simply put, I could not ask for two nicer, more supportive and talented friends. Second, I would like to thank my fantastic colleagues in the School of Policy and Global Affairs, at City, University of London, especially Dan Mercea. Third, a special thanks go to my wonderful family, who always manage to feign interest in my work. I owe a gargantuan thanks to my endlessly thoughtful mum. Lastly, an unreserved thanks go to my beautiful and talented wife, Megan, and my wonderful children, Úna and Elliott. There is not a day that goes by when I do think about how lucky I am to spend time with you. I never want this to end.

This page intentionally left blank

1

INTRODUCTION

This introductory chapter introduces the concept of the Metaverse and explains why this book chose to focus on Meta's vision. As we detail, the Metaverse is still a messy concept that is defined differently by different companies; consequently, to ground our analysis we focus on Meta, which is arguably the current leader in the race to build the Metaverse. The chapter then traces the roots of Meta's rebrand and focuses on the Metaverse by arguing the timing was not coincidental and was instead influenced by two events earlier in 2021 – Apple's ATT framework and the leak of the Facebook Papers. The chapter concludes by explaining the structure of the rest of the book.

The concept of the Metaverse is more than 20 years old, but it was not until 2021 that the term truly hit the mainstream. By late 2021, it suddenly felt like 'Metaverse' was in press releases and news stories everywhere. Epic Games announced a $1 billion USD investment in building their long-term vision of the Metaverse (Epic Games, 2021); Microsoft started talking about their Teams platform as a gateway to the Metaverse (Roach, 2021); even NVIDIA – a company known mostly for developing graphics processing units – started touting its Omniverse platform as a way to build a new Metaverse (Hyman, 2021). According to corporate data firm Sentieo, the term Metaverse was mentioned 7 times in investor meetings in 2020; in 2021, that number jumped to 128 mentions, making the Metaverse arguably 'Wall Street's new favorite buzzword' (Fischer, 2021, n.p.). If by late 2021 you felt like it was hard to escape stories about the Metaverse, you weren't imagining it.

For as powerful as Microsoft, Nvidia and Epic Games may be, those giant corporations were not the main driver of the surge in Metaverse hype. The main driver was Facebook founder Mark Zuckerberg, who went so far as to rebrand his corporation as Meta in October 2021 to supposedly showcase

Facebook's deep investment in building the Metaverse. Meta is now the umbrella company that owns all the different platforms that were under Facebook, including Facebook itself, Instagram, Whatsapp, Oculus and so on. That rebranding, which we focus on more later in this chapter, helped take the hype about the Metaverse to a new level.

Despite countless stories and press releases about the supposed Metaverse, the term is still incredibly messy, with companies and individual articles applying it in very different ways. Consequently, one could argue the Metaverse is mainly a marketing term used to drive stock prices (though it hasn't worked for Meta so far) and maybe even a 1990s '.com' boom for the 2020s. And that criticism has merit. When we initially planned this book, we intended to analyse the Metaverse as a concept more generally rather than a concept tied to a single company. We quickly realised, however, that it was almost impossible to write about the Metaverse in any coherent way if we didn't focus on one specific vision. For example, if one reads about Epic Games' plans to build a Metaverse and then follow that with some reading about Microsoft's or Meta's Metaverse plans, it feels like each company is talking about something completely different. As of summer 2022 at least, the concept is still so vague and used so differently by different sources that we decided it was not feasible to write a book that could address all those disparate – and sometimes contradictory – explanations about the future of the supposed Metaverse. When the same word can be used to describe everything from introducing a currency into Fortnite to building an all-encompassing virtual reality world, that concept needs some serious narrowing if it's going to be analysed in any detail.

Consequently, we decided the best path forward was to focus on what is likely the dominant version of the Metaverse in public discourse: Mark Zuckerberg's vision for the future of virtual reality (VR) and augmented reality (AR). We do touch upon other companies throughout the book, but we focus on Zuckerberg's vision because it enables us to ground our analysis, and even if Zuckerberg's Metaverse vision is more about hype than reality, the push to realize that vision is still backed by tens of billions of USD in investment in VR and AR. In addition, Meta has arguably laid out a clearer vision of a Metaverse for us to analyze than competing companies. By no means are we saying that Zuckerberg's vision *will* win out or that other companies' uses of the word 'Metaverse' are less interesting. Rather, this book focuses specifically on Meta's Metaverse project because it shows how one of the world's most powerful company envisions the future of digital media and, in particular, Meta's dominant role in that future.

We also focus on Meta's specific Metaverse hype in this book because, while it still remains vague, at a more general level, it showcases a distinct vision of the future that has direct links to the 1992 novel *Snow Crash* (discussed in more detail in the next chapter) that originally introduced the concept. As envisioned in the major Meta rebrand event, the Metaverse refers to a future of digital media dominated by VR and AR that will involve a significant shift from activities in the physical world to activities in virtual worlds. The eventual Metaverse, if it ever does exist, will be a persistent virtual world people can enter and exit at will. And that persistent virtual world will include a wide variety of activities, ranging from commerce to theater to exercise to gaming.

As we write in the summer of 2022, the Metaverse is still a long way from becoming a reality and feels more like PR than a concrete, near-future possibility. But while we do critique that hype and the cynicism driving it, we also argue that even at this early stage, people need to begin grappling with the consequences of what will happen if even a fraction of Meta's Metaverse vision comes to pass. As we show throughout this book, Zuckerberg's Metaverse vision is simultaneously a return to an old-fashioned understanding of digital media and an ambitious futuristic vision. Additionally, as we detail later, the supposed Metaverse is also an object that in many forms already exists through what we call *microverses*, which we define as more limited virtual environments that enable a range of social practices but remain disconnected from one another. Consequently, this book is both a critique of Meta's Metaverse vision and an argument that it needs to be taken seriously as a possible future that could have major impacts on everything from social worlds to the massive growth of new forms of surveillance capitalism. Importantly, by examining what we call microverses, we show that much of the groundwork has already been laid to understand what a Metaverse might mean for so many parts of our lives.

The rest of the chapter sketches the contours of Meta's current vision of the Metaverse, a vision that we note remains fuzzy. We then discuss the concept in more detail and tie the Metaverse hype to the recent renaissance in VR throughout the latter half of the 2010s before transitioning to an examination of the roots of the 2021 hype by looking more deeply at the Meta announcement, which was likely the moment the term Metaverse more widely entered the public consciousness. That section also critiques the 'Metaverse moment' and explains both our hesitancy in using the term and why we ultimately decided an analysis of that future vision is important. We then conclude the chapter by outlining the structure of the book and explain why understanding both the contemporary states of microverses and the vision of

the Metaverse require moving back and forth between everything from science fiction to exercise bikes to social networks to user-generated worlds After all, to – possibly apocryphally – quote William Gibson (2020), 'The future has arrived — it's just not evenly distributed yet' (n.p.)

META'S METAVERSE

For all its seeming ubiquity in the early months of 2022, the word 'Metaverse' is rather remarkably lacking any clear definitions. As mentioned above, different tech articles and different companies tend to either not define the term at all or define it in ways that raise questions about just how new the supposed Metaverse will be. That uncertainty is not helped by the fact that Meta, for all its talk about a Metaverse, has rarely come out and clearly defined what, to them, the Metaverse actually *is*. That uncertainty has led to varying definitions that are helpful starting points but also face limitations. For example, a common definition that hues closely to Zuckerberg's major announcement event is that the Metaverse will be a persistent virtual world that is always there and filled with other users. However, that definition could also be applied to various persistent virtual worlds that have existed for well over a decade. For example, *Second Life* is a virtual world platform released in 2003 that is persistent and has users with whom people can interact (Hillis, 2009). Gaming worlds like *World of Warcraft* are almost two decades old and are persistent virtual worlds filled with users. Consequently, for the concept of the Metaverse to be unique it needs to be about more than the persistence of the world.

An interesting definition that got some attention on Twitter focused more on the user experience to define the Metaverse. That definition came from user @CiXLiv (2022) who labels himself the 'Viking of the Metaverse.' He defined the Metaverse as 'When your virtual self becomes more important than your physical self. Simple' (n.p.). His definition captured something that a focus on persistent worlds does not: the experience of the individual in this supposed future space. However, his definition runs into the same issues outlined above. After all, for some people, their virtual self is likely arguably already more important than their physical self. Years of Internet research have shown that some people value their connections in online spaces over their physical connections (Baym, 2015), and plenty of people already spend more time interacting on digital platforms than face-to-face.

Consequently, because there is no widely accepted definition, we base our conceptualization of the Metaverse in part on how Mark Zuckerberg sees this future. We define the Metaverse as *an all-encompassing virtual world that is persistent and combines virtual spaces for unrelated tasks into the same platform and enables people to perform many of the activities currently performed in the physical world in this interconnected virtual space*. In other words, the Metaverse is theoretically a place where someone could live primarily a digital life (a vision that of course ignores that one cannot leave their body behind (Hayles, 1999)). Consequently, unlike persistent virtual worlds like *Second Life* or *World of Warcraft*, a full Metaverse would be a world of unrelated activities where people could go to work, exercise, attend live concerts, and on and on, which as the next section explains, is how Zuckerberg is marketing the Metaverse to users. And while we want to avoid leaning too heavily on a technology-specific definition of the Metaverse, for the current visions of major corporations to even partially be achieved, the Metaverse will have to be immersive, and the most likely path towards immersion is through VR.

VR—and to a lesser extent AR – is at the centre of much, though not all, of the current Metaverse hype, and the term 'Metaverse' was originally coined in Neal Stephenson's (1992) novel about VR *Snow Crash*. Consequently, the potential of the Metaverse in Zuckerberg's vision of an all-encompassing digital space can be difficult to disentangle from the recent renaissance of VR. After all, VR is a media form with a long and bumpy history (Frith & Saker, in press). The first head-mounted display was created in the 1960s by Ivan Sutherland (1965), and by the 1980s VR was being hyped as a major piece of the future of computing. VR research labs like VPL were created by VR pioneers like Jaron Lanier, and early prototype VR technologies were released (Evans, 2018). That hype carried into the early 1990s when influential futurists were making bold predictions that VR was on the cusp of widespread adoption. Negroponte (1993), for example, predicted that $25 VR headsets would be available by 1995 and that by the late 1990s millions of people would be wearing them on public transportation.

Leighton Evans (2018) calls this period the 'halcyon days of VR,' a period when the future seemed bright and tech evangelists believed society was on the cusp of widespread VR adoption. Of course, that didn't happen. Not even close. VR devices that were at all useable were extremely expensive, and the ones that were affordable were not very useable. The technology was simply not where it needed to be to offer a satisfying VR experience. Consequently, much of the hype seemed ridiculous in retrospect, and if the 1980s and 1990s were the halcyon days of VR, the 2000s were arguably the dark ages.

Throughout the 2000s, basically no commercial VR headsets were released, and VR development mostly focused on niche professional uses like flight and medical simulators.

The fortunes of VR began to change, however, with a 2012 Kickstarter fundraising campaign. The campaign was created by a small startup team called Oculus who wanted to build a powerful, commercially viable VR headset. Their goal was to raise $250,000 USD for the project; by the time the fundraising campaign ended, they had raised almost $2.5 million USD. Clearly, even after decades of disappointment, a sizable number of people were excited by the potential for a viable, commercially available VR device.

The Oculus Kickstarter campaign was an important moment in the more recent history of VR, and if the Metaverse does get built mainly through VR, it was an important moment for visions of the Metaverse more generally. In 2014, Facebook purchased Oculus for $2 billion USD, and VR development took off from there. Rather incredibly, in a seven-month period in 2016, people went from having essentially no commercially viable VR headset options to having three VR headsets released by major companies: the Oculus Rift, the Sony PSVR and the HTC Vive. And development only continued from there, especially through the Facebook-owned Oculus. In 2019, Oculus released the Quest, which was a fully functional, standalone VR headset that, unlike other headsets on the market, did not required a wired connection. And then in 2020, Oculus released the Quest 2 (now named the Meta Quest 2), which sold over 10 million units in 2021 (Gartenberg, 2021). Sony and HTC have also worked on developing new VR headsets, but as of early 2022, Meta controls around 75% of the VR market (Chauhan, 2021), and that percentage may continue to grow considering the massive investment the company is making in the future of VR that we discuss in more detail in the next section.

As we mentioned earlier, Zuckerberg's vision of the Metaverse is not just about VR, but VR is central to that vision. But what's interesting about Meta's vision of a Metaverse is that, quite frankly, it can sometimes be difficult to tell just what's so new about it, which is a topic we explore throughout this book. As we argue, many of the spaces Zuckerberg highlights as the future of the supposed Metaverse already exist in VR. People can exercise in VR, go to work meetings, see live performances and even attend church services. The difference with Meta's hope for the Metaverse is that all these distinct spaces will become seamlessly connected into one giant virtual world. Consequently, to both push back on some of the supposed newness of the Metaverse vision while also acknowledging its ambition, this book introduces the concept *microverses*, which are disconnected virtual spaces in which people can engage in isolated practices. We use the concept of microverses to explore these virtual

spaces that already exist and theorise how interconnecting them is a key part of Meta's Metaverse goals. As we show, the goal of Meta's Metaverse vision is to tie those microverses together into a full-blown virtual world that, as of now, seems more like a futuristic sci-fi novel than a near-future reality. But powerful people want that reality to happen, so we argue that – even in these early days of Metaverse development – it is worth exploring what the social impacts could be. However, before we do so, we first want to look more deeply into the chain of events leading to Facebook's Meta rebranding and what they reveal about what a supposed Meta-led Metaverse might look like.

THE METAVERSE HYPE

Facebook's October 2021 rebranding as Meta Platforms was a major event in the tech world. One of the world's largest companies not only changed its name but also signaled that it believed a major part of the future of digital media revolved around VR. At the flashy rebranding event, Mark Zuckerberg announced his plan to build Meta's Metaverse and announced his company would invest over $10 billion a year in VR and hire thousands of developers to make that vision a reality.

For most people who likely paid little attention to what was happening at Facebook, the announcement of a total rebranding and a mysterious thing called a Metaverse likely came as a surprise. However, we argue that the ground for the Meta rebranding and the focus on the Metaverse hype had already been laid by two events that occurred earlier that year. Most importantly for this book, the chain of events that preceded the Metaverse announcement is arguably key to understanding Zuckerberg's vision and why it is crucial to critique that vision. Consequently, this section examines the lead-up to the Meta announcement by examining two important moments: Apple's introduction of App Tracking Transparency (ATT) and the leak of the Facebook Papers.

Apple's App Tracking Transparency

The valuation of many social media companies is based more on supposed potential than the actual revenue they generate. Uber, for example, is valued in the tens of billions of USD by investors despite the fact that the company loses billions of USD each year. Airbnb is valued in the tens of billions of USD despite losing money in 2021. Many huge digital media companies that are

often regarded as major successes struggle to establish consistent revenue streams. Meta, however, is not one of those companies. Meta long ago established consistent revenue streams that far outstripped the company's operating costs. In 2021, for example, Meta posted a net income of $40 billion. To put it in the simplest terms possible, unlike many of its social media peers, Meta is a massively profitable company.

Meta's business model, however, has an inherent weakness: they do not manufacture the devices or own the operating systems people use to access different Meta platforms. Unlike Google's Android OS or Apple's iOS or even Microsoft's Windows, Meta does not make operating systems. They also do not make the hardware people use to access Meta's platforms. They tried at one point with the HTC First, unofficially known as the 'Facebook phone,' but the device was a flop. Consequently, the company remains reliant on other companies' operating systems to ensure Meta maintains its access to the massive amounts of user data the company collects and monetises.

In the summer of 2021, Apple exposed that weakness in Meta's business model when it introduced its ATT framework to iOS 14.5. The ATT framework was a significant change to iOS that made it mandatory for apps to ask for permission to track people across other apps and websites. In other words, ATT made it easy for people to simply click a button and cut off Meta's access to their personal data when they were not specifically using one of Meta's apps.

The ATT framework was a major blow to Meta. Meta is one of the largest collectors of personal data in the world (Vaidhyanathan, 2018), and key to is data collection practices is the ability to collect people's data even when they are not using a Meta platform. Apple's introduction of ATT essentially cut off Meta's access to iPhone users who did not actively choose to allow Meta to track them, and the financial consequences were significant. Meta has acknowledged that the new framework will cost the company roughly $10 billion in revenue in 2022 because they will not be able to generate the same levels of personalised ad revenue from iPhone users (Newman, 2022).

On its face, Apple's ATT framework might not seem relevant to a book about the Metaverse. After all, the framework only cuts off Meta's data access on iPhones and has nothing to do with virtual reality. However, Apple's decision likely played a role in both the Meta rebranding and Zuckerberg's massive investment in VR and the Metaverse (Swisher & Lanier, 2021). With one tweak to iOS 14.5, Apple showed the vulnerability in Meta's reliance on other companies providing access to the data that drive Meta's business model. Overnight, Google could decide to implement something similar on Android or Microsoft could do the same on Windows, and there would be little Meta