A MEDIA GENEALOGY OF THE JAPANESE

MOBILE PHONE, 1997–2007

by

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DISSERTATION ABSTRACT

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The mobile phone—in its present form, the smartphone—has become a ubiquitous part of everyday life. We use it to facilitate personal and professional communications, access entertainment media, and purchase goods and services, among other things, and yet it has become so thoroughly familiar that it is seen as unremarkable and we take its presence for granted. These meanings of mobile media—what it is to be used for, and in what ways—are not intrinsic to the form of the mobile phone itself or the natural outcomes of technological development, but are instead the result of significant processes of negotiation of meaning that have occurred and continue to occur throughout media history.

This dissertation is a media genealogy of the *keitai denwa* (lit. "mobile phone") in Japan from 1997 to 2007, when the keitai denwa emerged and transformed from a limited office technology aimed at professionals to a commonplace fixture used by people of all ages to facilitate the experiences of everyday life. Drawing from a range of contemporary print media, this dissertation shows how the keitai was constituted as a discursive formation through media representations, and how these changing representations subsequently helped shape the expectations of what mobile media could do, for whom, and how. As a media genealogy, the dissertation attends to the social and technological conditions of 20th-century Japan which made it possible for the keitai to emerge and assume its particular form, at the same time contesting

mainstream Western histories of media and the Internet that frame the keitai ecosystem as an inconsequential, geographically-limited failure. Instead, I argue that what we have come to understand as "mobile media" today is an assemblage of affordances, expectations, and cultural meanings that are the result of the contingent negotiations and technological developments that were in constant play during this period of media transition, and that understanding how discourses of keitai and mobile media became established in this period is vital to our understanding of mobile media today.

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Introduction: Studying Mobile Media

Over a span of less than 30 years, the Internet has gone from a novel communications technology for academic and military researchers, early adopters, and other technology enthusiasts, to an inescapable feature of everyday life, where much of the modern everyday experience is mediated through Internet-connected information and communications technologies. From the early 2010s there has been an explosion in the use of smartphones, and through the decade the smartphone has become the dominant paradigm for accessing the Internet, especially for general consumer use. The International Telecommunications Union reported in 2011 that coverage of the second-generation (2G) mobile networks reached 90% of the world's population, with third-generation (3G) coverage reaching an estimated 45%.[1] By 2021, over 90% of the global population had access to "mobile broadband" (3G, 4G, and faster networks), while the reach of 2G had declined to 5–7%, owing in part to the phasing-out of 2G networks in many countries starting from the late 2010s.[2] The change has been significant in so-called developing nations in particular, regions of the world where traditional wired communications infrastructures are inadequate or highly expensive.

In 2021, the ITU estimated that there were only 13 subscribers of fixed (wired) broadband Internet access per 100 inhabitants of "developing" regions, while mobile broadband subscriptions numbered 74 per 100 inhabitants. In the so-called developed regions, there were 36

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1. "Measuring Digital Development: Facts and Figures 2011," Facts and Figures (Geneva, Switzerland: International Telecommunications Union, 2011), 4, https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2011.pdf.

2. "Measuring Digital Development: Facts and Figures 2021," Facts and Figures (Geneva, Switzerland: International Telecommunications Union, November 25, 2021), 8, https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf.

and 131 subscribers[3] per 100 inhabitants to fixed and mobile broadband services, respectively.[4] Even in areas where more developed wired infrastructure is present, the number of mobile broadband subscriptions vastly exceeds subscriptions to wired broadband services. The increase in broadband-capable network coverage from 2011 to 2021 points not only to the rapid development of necessary infrastructure, but more importantly to a significant shift in the way people around the world access the Internet, with mobile media replacing more stationary, wired modes of access. This shift was brought about by a number of overlapping factors: the increased availability of low cost Android-based smartphones; the continuing visibility of Apple's iPhone as a status symbol in regions with established, emerging, or developing middle classes; advances in manufacturing technologies which allow for increasingly powerful hardware to fit inside smaller mobile form factors; trends in web design that call for websites to scale their content for consumption on either a PC screen or a mobile display; the ability of these powerful mobile devices to access more complex web technologies previously reserved for traditional computers; shifts away from the prior PC-based model of computing and the development of more and more applications that reside "in the cloud" (e.g. email services, collaborative office software, media streaming services), and so on.

The title of mobile media scholar Richard Ling's 2011 book, *Taken for Grantedness*, reflects a conceptual theme that runs through most of Ling's work (and much of the scholarship on mobile media in general in the 2010s): the notion that mobile media—which in most cases is generally synonymous with the mobile phone—has arrived at a point where it is nearly invisible in everyday life. Ling is largely concerned with the social effects of the mobile phone and its integral role in interpersonal communication and coordination—it is, he says, "a device that

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3. More than 100 subscriptions per 100 inhabitants indicates that some individuals may have multiple service subscriptions, e.g. a work and a personal phone.

4. "Facts and Figures 2021," 8–9.

embeds us in our web of social interactions," where our inability or reluctance to use the mobile phone at a social level negatively affects not just ourselves but the people around us who may have to alter their communicative practices to accommodate our technological isolation.[5] The mobile media of today, however, plays a role in more than immediate, interpersonal communication and coordination. We rely on mobile media when we want to navigate through an unfamiliar place, consume entertainment media and play games, shop for goods and services, access information in general while away from a computer, etc., and we take its presence for granted even as it has become an indispensable part of facilitating all of these tasks.

The mobile phone has become naturalized and normalized, as invisible a fixture as the electrical infrastructure that powers our homes. A central concern of this dissertation is to engage in pushing back against narratives that are also "taken for granted" in media history through calling attention to the very intentional processes by which history is arranged in a linear fashion. The processes by which media becomes normalized function ahistorically, and the experience of media that is always-already present serves to erase the vestiges of a time in which life in the presence of mobile media was *not* taken for granted.

This dissertation is concerned with a particular period in media history: the years from 1997 to 2007 in Japan, when the mobile phone—or *keitai denwa*—exploded in popularity and became a fixture of urban Japan (especially among youth and trendy businesspeople) and the envy of much of the rest of the world. This was a period of transition, in which the mobile phone moved from an expensive, niche technology generally thought of as a purely business device to a familiar, commonplace, and unremarkable consumer good. The dissertation proposes to, as Lisa Gitelman articulates,

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5. Richard Ling, *Taken for Grantedness: The Embedding of Mobile Communication into Society* (Cambridge, MA: MIT Press, 2012), 2–3.

[look] at a specific moment of media transition, when things seemed particularly contingent and far from inevitable or natural. Moments of media transition are periods in which the perceptual and semiotic patterns, the technological forms, social practices, economic structures, and legal constructions later defining a particular medium within a dominant media system remain unsettled and under negotiation.[6]

The period covered in this dissertation was one of intense technological development across all domains of information and communications technologies. The Internet, which in America first became available to the general public on a broad scale in 1995, grew from the domain of hobbyists and early adopters to become a much more integral part of personal and professional life, and was accompanied by growing expectations as to what exactly it could be used for. The mobile phone also grew by leaps and bounds, from a device that was literally not much more than a *mobile phone* in the early to mid–1990s to a convergent device that serves a number of important functions in our everyday lives, from facilitating personal and professional communications to providing access to entertainment media. This transition could hardly be predicted by looking at the state of mobile phones in 1997, and it was hardly inevitable at any point during this period, when a greater variety of competing mobile media existed and the role of the mobile phone within this landscape—who would use it, how it would be used, and what would it be used for—was still an ongoing question.

By focusing on the keitai denwa in this formative period, I intend to draw attention to an important media technology that is often forgotten or overlooked by new media scholars outside of Japan. The keitai will also serve as the focal point for a broader argument about the subsequent development of mobile media. Placing the keitai denwa in a linear narrative of technological progress as the distant ancestor of the Apple and Google smartphones of today

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6. Lisa Gitelman, "Media, Materiality, and the Measure of the Digital, Or, The Case of Sheet Music and the Problem of Piano Rolls," in *Memory Bytes*, ed. Lauren Rabinovitz and Abraham Geil (Durham, NC: Duke University Press, 2004), 200.

would hardly constitute a novel or radical argument. Instead, I argue that while the contemporary smartphone certainly follows the keitai chronologically and adopts a significant number of its affordances, there was nothing predetermined or inevitable about the smartphone's emergence at the keitai's peak, especially since the two paradigms existed side-by-side for a number of years. The information and communications technologies of the 1980s and 1990s, especially ones leaning towards a more portable form factor, did not *have* to take the form of the smartphone or mobile tablet in our present day; they did not *have* to develop alongside an app economy that sees the functionality of these devices extended through thousands of third-party applications and services; and they did not *have* to come to signify certain practices and attitudes towards communication, the networked self, the relationship of the phone to the owner's body and the relationship of the body to surrounding space. There was nothing in the features of these historical media that unequivocally point to the functionality and meaning of mobile media today. Instead, what we have come to understand as "mobile media" today is an assemblage of features, affordances, and cultural meanings that are the result of contingent negotiations and technological developments that were in constant play during these historical periods.

Outline of Chapters

The first chapter of this dissertation begins by exploring the property of 'mobility', and how it has been defined in the context of information and communications technologies. Mobility as a concept underwent its own processes of negotiation as computers became portable, and there is a significant amount of discursive meaning present in the difference between a 'mobile' device and a 'portable' one. A settled definition of 'mobility' allows for the construction of 'mobile media' as a category which carries its own expected affordances and practices. By

first understanding the implications of 'mobile media', we are then able observe the ways in which discourses of mobile media are shaped by their constituent devices.

The chapter also introduces the central theoretical/methodical approach of the dissertation in the concept of media genealogy. This work is primarily a work of media historiography, but I seek to avoid dealing in the linear narratives of technological process which present each development as either an evolutionary step on the way to the artifacts of the present day, or a failed adaptation (to market forces, is the unspoken implication) that is forgotten along the wayside. Instead, this work will draw from the genealogical method developed by Michel Foucault and extended by a number of succeeding scholars into the area of media studies. Media genealogy represents one of many recent approaches to critical (new) media historiography, one which "looks at the many origin stories of technological innovation and the negotiations and decisions that accompanied it, as well as the alternative, not-yet-realised possibilities."[7] While self-reflexive approaches to historiography in general have become common in recent years, media genealogy places a deliberate emphasis on the rejection of linear organizations of history (and especially narratives of "progress") to instead attend to the processes by which discourses of media history become established in the first place. The chapter employs the new media theory of remediation as one way of approaching mobile media from a genealogical standpoint and making visible the descent and emergence of new media forms that, despite the discursive attempts at severing them from the past, still call back to the older media forms they are attempting to adapt.

Chapter 2 begins with a discussion of the changing discursive practices that refer to 'Japanese technology' through the 20 century, and the transition from Japan being seen as a

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7. Clemens Apprich and Götz Bachmann, "Media Genealogy: Back to the Present of Digital Cultures," in *Digitisation: Theories and Concepts for Empirical Cultural Research*, ed. Gertraud Koch (Routledge, 2017), 295.

maker of low-quality, copycat goods to the emergence of techno-Orientalist discourses that

proclaim "all the best stuff is made in Japan!" The chapter offers an overview of the structural

and technological conditions in late 20 century Japan that allowed for the keitai denwa to emerge

in its particular form. The chapter discusses three separate attributes of these conditions: the

development of the nation's telecommunications infrastructure in the postwar era, first as state

monopoly and later as competing privatized corporations; the public role of and attitudes toward

scientific research in the postwar era and the constraints that the memory of the war placed on

the funding and reception of public research; and the initial Japanese experience with foreign-

developed information and communications technologies—specifically computer systems and

networks—that necessitated specific adaptations and approaches to the lack of Japanese

language support. These three attributes, the chapter argues, were instrumental in shaping the

form and contexts in which the keitai denwa eventually emerged.

Chapter 3 addresses the methods employed in the materials analyzed in Chapter 4, as well

as the intentional choice to use the terms *keitai*/*keitai denwa* in this dissertation. The choice of

words is done to emphasize the specific Japanese experience of mobile media, instead of

speaking in more global terms about 'the mobile phone'. *Keitai* and *keitai denwa* also function as

discursive formations, (drawing again from the work of Foucault) statements which work to

divide the keitai from other forms of mobile media, and even from superficially similar

technologies like the Personal Handyphone System (PHS). The chapter also addresses the

methods used in selecting and analyzing documents in Chapter 4. I draw on criteria for assessing

historical documents according to their authenticity, credibility, representativeness, and meaning

to justify the use of the selected documents. The work of scholars in the field of game studies is

also used to support the interpretation of magazine texts and advertisements and their relationship to cultural practices.

Chapter 4 examines contemporary print media to see how mobile media is represented and how these representations have changed over the period from 1997 to 2007. The chapter deals primarily with weekly news magazines as well as a sample of monthly magazines, specialty *mook*s, and newspaper issues. Through analysis of the portrayals and discursive framing of mobile media in these materials, the chapter will show how the discursive formations that defined the keitai shifted during this time period and how they reflected the process of negotiation of meaning.

Chapter 5 concludes the dissertation with a discussion of the 2007 release of the Apple iPhone in the United States, and the way it was positioned as a revolutionary new step in mobile media. This chapter will look past 2007 to look at the slow adoption of the iPhone in Japan, a process that was likely the result of the established meanings of mobile media that already privileged the keitai. Finally, this chapter will conclude by looking at how the affordances and design of the keitai helped to establish the expectations we have for what mobile media can and should do, how those expectations are still reflected in the mobile media of today.

Chapter 1.

Origins? A Mobile Genealogy

<u>Introduction</u>

To describe a certain media technology as 'mobile' sets an expectation for the capabilities of that technology and the physical forms it takes. We have come to understand, culturally, certain things about what 'mobile' media can do, what is implied through this property of mobility. A mobile medium suggests a particular form factor (which itself constrains or facilitates potential uses of the technology), and promises particular modes of interaction with the technology itself, as well as implying other networks of relations that the mobile medium relies upon. For example, a device which has no internal battery and must be tethered to a power outlet at all times is in no way mobile in the strictest physical sense—it can only be used in locations that allow easy access to some sort of charging infrastructure, no matter if it otherwise assumes a portable form. And a mobile phone, for example, is not a self-contained device; to function at all in its expected way requires, as Greenfield describes it, "the smooth interfunctioning of all the many parts of this infrastructure—an extraordinarily heterogeneous and unstable meshwork, in which cellular base stations, undersea cables, and microwave relays are all invoked in what seems like the simplest and most straightforward tasks we perform with the device."[8] The mobile phone is just one tiny endpoint in a complex assemblage of networks, all of which are vital for these devices to function in the most basic manner we expect from a mobile device. Especially to our contemporary understanding, the meaning of 'mobile' media is as much about the invisible infrastructures that produce its functionality as it is about the endpoint devices themselves.

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8. Adam Greenfield, "Smartphone: The Networking of the Self," in *Radical Technologies: The Design of Everyday Life* (London: Verso, 2017), 29.

In defining 'mobility', it is also important to identify the technologies which are excluded by this term, at least broadly. In contrast to its seemingly-obvious physical implications, there are a huge number of mobile (in a literal sense) media technologies—game consoles, ebook readers, music and video players, even car audio systems (for what is more 'mobile', especially in contemporary America, than the automobile?) that are commonly described as 'portable' but not generally thought of as 'mobile media'. That there is a conceptual distinction between these two seemingly synonymous words suggests there is something deeper and more complex to be investigated: that 'mobile media' is not just a tidy category of *that-which-is-untethered*, a catchall of those technologies that have shed their cables like vestigial tails in the grand forward march of technological evolution. What makes some portable devices *mobile* and others not? We take for granted that the smartphone is a mobile media technology, but generally don't question why a laptop computer does not also fall under this classification. 'Mobility' is defined in part by its implied affordances and the expectations for how it may function.

This chapter introduces media genealogy as a method and theoretical approach for doing media history, and the main theoretical foundation of this dissertation. The chapter will address the concept of 'mobile media' and the construction of the property of 'mobility' from a genealogical perspective, looking at the meanings that have come to define this term and the ways they differentiate it from *portable* media. Finally, this chapter will discuss the new media theory of remediation, and its use as a theoretical tool for uncovering lines of descent as part of a work of media genealogy.

<u>Thinking 'Genealogically' about Mobile Media</u>

For much of the history of physical media, *mobility* could be said to have been one its main, though entirely unremarkable, properties. Media such as stone or clay tablets, papyrus

scrolls, or codices and illuminated manuscripts were all of sufficient dimensions as to be easily

transported from one physical location to another—'mobile' in the most literal sense. Beyond

eyesight, literacy, and sufficient natural or artificial light, there were no additional requirements

for accessing these media on the go, at least in a 'read-only' fashion. Early institutions of

learning such as the fabled Library of Alexandria were known for their collections of written

media from all across the world, and the classical empires of Asia, Africa, and Europe were

known to accumulate and diffuse the written works of the cultures they encountered.

With electronic and digital media, this default property of media mobility changed. In

their initial forms, the telegraph, radio, telephone, and television were all objects very much

rooted in a specific place, such as the home or office. This is ironic considering that these new

media technologies allowed for the instantaneous transmission of information over the vast

distances that previously restricted the flow of information to the speed with which a physical

medium could be transported. Carey famously notes that while telegraph lines followed

preexisting conduits for physical communications media such as roads, railroad tracks, or canals,

the telegraph's revolutionary effect on communication was that it "permitted for the first time the

effective separation of communication from transportation."[9] While the telegraph made

communication instantaneous, it also tethered the telegraph as a media technology to one of a

few locations such as the telegraph or newspaper office, and likewise the radio and television set

meant the news was consumed in the home or other stationary location and not on the go, as one

of the newspaper's affordances. In later years, advances in battery and other technologies

allowed for these media to become *portable*—the portable television, the portable radio, etc. But

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9. James W. Carey, "Technology and Ideology: The Case of the Telegraph," *Prospects* 8 (October 1983): 304–5, https://doi.org/10.1017/S0361233300003793.

these were media technologies modified by an adjective—the *portable* television—indicating that this portability was not the default state of affairs.

While the distinction between 'mobile' and 'portable' media may seem superficial at best —they are almost perfect synonyms, after all—the use of either term to describe media carries significant expectations for what the media is supposed to do, and how it relates to other media technologies around it. Rather than attempt to identify an 'origin' of mobile media or of the concept of mobility, I will instead draw from media genealogy to attend to the ways in which 'mobile media,' as a concept and an object, was produced through various discourses and remediations. Alper reminds us that "the emergence of mobile media and its afforded uses as we know them today were not inevitable or predetermined,"[10] and it is that process of determining the afforded uses and meanings of mobile media that I want to explore. Media genealogy provides an appropriate framework for thinking about the emergence of this concept, not in the linear fashion emphasized in historical methods which seek an unbroken lineage from the past to the present, where each new development was *obviously* destined to fall from its predecessors, just as it itself contains the blueprints for its inevitable successor.

What does it mean to do a genealogy of media, or mobile media in particular? Why not simply write a 'history', and what specifically does 'genealogy' mean? Genealogy and its predecessor/complement archaeology are derived from analytical methods developed by Michel Foucault, whose work in the 1960s is generally regarded as archaeology and who then shifted to a focus more on genealogy in the 1970s.[11] At least without turning this dissertation to an exclusive examination of Foucault's archaeological and genealogical methods (a task which has

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10. Meryl Alper, "Portables, Luggables, and Transportables: Historicizing the Imagined Affordances of Mobile Computing," *Mobile Media & Communication*, no. 3 (2019): 336, https://doi.org/10.1177/2050157918813694.

11. Alexander Monea and Jeremy Packer, "Media Genealogy and the Politics of Archaeology," *International Journal of Communication* 10 (January 2016): 1.

already been undertaken by more qualified, actual philosophers), the archaeological method is perhaps best seen in Foucault's own familiar explanation in *Discipline and Punish*: it is not "writing the history of the past in terms of the present" but instead "writing the history of the present."[12] An archaeological approach doesn't try to construct a direct lineage from the past to the present, where the role played by the past is simply to produce the inevitable present.[13]

Inspired also in part by German media theory in the later 20 century, in particular the work of Friedrich Kittler, media archaeology roughly adopts Foucault's archaeological methods (focused as they were on the archive) to media technologies that could be "read" in the same way. Parikka describes archaeology as "a methodology for excavating conditions of existence. Archaeology here means digging into the background reasons why a certain object, statement, discourse or, for instance in our case, media apparatus or use habit is able to be born and be picked up and sustain itself in a cultural situation."[14] Chapter 2 will utilize a primarily archaeological approach in looking at the conditions of possibility and existence for the keitai denwa in Japan around the turn of the century, investigating the social and economic factors of that moment but also previous developments in information and communications technologies that contributed to the emergence of the mobile phone as a cultural artifact. Nicoll adds that media archaeology, while not exactly a "unified methodology," can be described as "a Foucauldian search for epistemic ruptures, discontinuities, and gaps in media history, as opposed to linear sequences of progress."[15] This dissertation focuses on the Japanese mobile feature phone as one of these "ruptures, discontinuities, and gaps"—not, perhaps, entirely unknown to media

12. Michel Foucault, *Discipline & Punish: The Birth of the Prison* (New York, NY: Vintage Books, 1977), 31.

13. Much like Francis Fukuyama's now-infamous proclamation of the "end of history" after the fall of the Soviet Union and the seeming global triumph of neoliberal American-style democracy, viewing the present moment as the inevitable result of all historical processes before it assumes foolishly that the present is somehow unique in all of history.

14. Jussi Parikka, *What Is Media Archaeology?* (Cambridge, UK: Polity Press, 2012), 6.

scholars of various orientations, but one that is often not narrated in 'Western' histories of the

Internet and new media, especially now that contemporary mobile media for the past decade has

been largely synonymous with American technology companies.[16]

      While Foucault's own work is said to have shifted from the use of archaeology to

genealogy as an analytical method, the separation between media archaeology and media

genealogy is much murkier, especially as various scholars who situate themselves within one of

these two approaches often claim to be doing the same thing. Apprich explains the difference as

"while media archaeological investigation examines certain technical media apparatuses…in

their respective discourse-historic settings, media genealogy contains a research programme that

focuses not so much on how such a media historical discourse *is* established, but rather how it

became established or *becomes* established."[17] Foucault's work in developing genealogy as an

analytical method focuses explicitly on this process, and he notes that "a genealogy…will never

confuse itself with a quest for…'origins'…on the contrary, it will cultivate the details and

accidents that accompany every beginning; it will be scrupulously attentive to their petty malice;

it will await their emergence, once unmasked, as the face of the other."[18] Similar to a social-

constructivist approach to the history of technology, Foucault's genealogy stands in opposition to

a linear model of history, where aspects of the present are seen as inevitable products of

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15. Benjamin Nicoll, *Minor Platforms in Videogame History* (Amsterdam: Amsterdam University Press, 2019), 16.

16. Or at least, in terms of the software ecosystem. As is so often the case in today's global division of manufacturing labor, the production of the actual hardware is generally performed in China or other countries outside the Euro-American sphere of cultural influence. This division is both signaled and obscured on the packaging of contemporary Apple devices such as the iPhone: "Designed by Apple in California" functions as a presumably more premium indication of origin than the more pedestrian— though accurate—"Made in China."

17. Clemens Apprich, *Technotopia: A Media Genealogy of Net Cultures*, trans. Aileen Derieg (London, UK: Rowman & Littlefield International, 2017), 6.

18. Michel Foucault, "Nietzsche, Genealogy, History," in *The Foucault Reader*, ed. Paul Rabinow (New York, NY: Pantheon Books, 1984), 80.

historical progression, and the writing of history highlights only that which points to the present

and excludes that which is left in the past. Perhaps most productively to the doing of media

genealogy, Koopman argues that Foucault's turn to genealogy did not replace archaeology, but

instead was a necessary extension to what he saw as unresolvable problems in his conception of

archaeology.[19] In perhaps a less structured or rigorous fashion, this dissertation too will draw

from both media archaeology and media genealogy, and from Foucault's own conception of

genealogy as a guiding approach to this study.

Foucault borrows several terms from Nietzsche's *Genealogy of Morals* (which is a major

starting point for Foucault's formulation of his genealogical method), in particular *descent* and

emergence which both help differentiate genealogy from a history that is concerned with

'origins'. *Descent* is an affiliation with a group that is nonetheless characterized by differences

and not similarities, and is a way of accounting for contemporary events or objects that display

the heterogeneity of the past beyond a literal chain of historic events. For Foucault,

> an examination of descent also permits the discovery, under the unique aspect of a trait or
> a concept, of the myriad events through which—thanks to which, against which—they
> were formed. Genealogy does not pretend to go back in time to restore an unbroken
> continuity that operates beyond the dispersion of forgotten things; its duty is not to
> demonstrate that the past actively exists in the present, that it continues secretly to
> animate the present…[20]

Media genealogy is similarly concerned with descent. Apprich states that media

genealogy is "not solely a matter of making an implicit knowledge visible, but rather of

uncovering the processes of emergence and negotiation, the search for dispersed *descents* that

constitute the own present."[21] To focus on descent is to attend to the media technologies or

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19. Colin Koopman, "Foucault's Historiographical Expansion: Adding Genealogy to Archaeology,"
    Journal of the Philosophy of History 2, no. 3 (January 1, 2008): 338–62,
    https://doi.org/10.1163/187226308X335994.

20. Foucault, "Nietzsche, Genealogy, History," 81.

21. Apprich, *Technotopia*, 5.

practices which are no longer extant yet at the same time were critical to the formation of the present. As this dissertation will show, the period of emergence of the keitai denwa was a site of negotiation of the meaning of 'mobile media', with various features and affordances not just of the keitai denwa itself but of other contemporary mobile or portable media technologies contributing to the general expectations of what mobile media should (or should not) do and be. This period of negotiation is critical for understanding the keitai denwa and understanding the meaning of mobile media today. Attending to these descents "is to maintain passing events in their proper dispersion; it is to identify the accidents, the minute deviations—or conversely, the complete reversals—the errors, the false appraisals, and the faulty calculations that gave birth to those things that continue to exist and have value for us."[22]

Descents give way to *emergence*, which in a media genealogy attends to the particular moment a media technology appears and becomes capable of being seen as the object of analysis. Foucault cautions that "as it is wrong to search for descent in an uninterrupted continuity, we should avoid thinking of emergence as the final term of a historical development."[23] The keitai denwa at the center of this dissertation is clearly not the "end of history" of mobile media, and the smartphone which today is synonymous with mobile media is in no way the final evolution of these processes, either. As is described in Foucault's exploration of genealogy above, I want to avoid both 'ends' and 'origins' in this research, and instead attend to the fleeting emergences that characterize the developments in this time.

In using media genealogy as an analytic method, the objective is to attempt to understand the mobile media of today—almost entirely synonymous with the Apple- or Google-developed smartphone—through the period bracketing the turn of the millennium in Japan, where many of

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22. Foucault, "Nietzsche, Genealogy, History," 81.

23. Foucault, 83.

the contemporary meanings and expectations for the phone as mobile media were negotiated and established. In this time period in Japan we see the keitai denwa as the site of emergence of the mobile phone as a device for accessing the web, for purchasing and listening to music, for the development of communication practices that actually discourage the primary function of a mobile *phone*, and for many other qualities that we take for granted in mobile media today. To the extent that Henry Jenkins' sketches towards a theory of convergence[24] retain their relevance today, there is no inaccuracy in describing the keitai denwa as the convergent device *par excellence*. Of a secondary focus in this dissertation are the 'mobile' media that have existed on the periphery of the mobile phone—media that are 'portable' but for whatever reason have fallen by the wayside in our understandings of what mobile media are and could have been. Foucault states that emergence "designates a place of confrontation," the space between the struggle of different forces where one suddenly emerges dominant, and in true genealogical fashion this dissertation will attend to some of the forces of the time which failed to emerge as alternatives to the keitai[25]. First, however, it is necessary to return to the discussion from the beginning of the chapter on the concept of mobility itself in order to define this central term of the dissertation: how it has been theorized in the context of information and communications technologies, the meanings we have assigned to it in that context, and the expectations we have for what it should do.

<u>On Being 'Mobile'</u>

'Mobile', as a common English adjective, is not a term fraught with nuance or burdened with multiple potential meanings. To be mobile is to be movable, synonymous with 'portable,' a property arguably inherent to 20 and 21-century media and communication technologies, and to

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24. Henry Jenkins, "The Cultural Logic of Media Convergence," *International Journal of Cultural Studies* 7, no. 1 (March 1, 2004): 33–43, https://doi.org/10.1177/1367877904040603.

25. Foucault, "Nietzsche, Genealogy, History," 84.

life itself. The ubiquitous presence of the automobile and the relative accessibility of air and train travel locate the experience of being-mobile as one central to everyday life (albeit altered somewhat under the lingering realities of the COVID-19 pandemic): the commute to and from work and school, business travel to meetings or conferences, the vacation (during which we are likely to bring some form of work with us, thanks to the array of mobile information and communications technologies at our fingertips). It is in this last context that mobility acquires a number of additional connotative meanings. Mobility is strongly tied to work, to the narratives of 'upward mobility' of aspirational labor under neoliberal capitalism. Work takes place, or is predominantly assumed to take place, in bounded spaces: the construction site, the office, the classroom—and for some of these, where possible, 'mobility' implies a separation of the work itself from these physical locations. Kakihara and Sørensen note that wireless devices, like mobile phones, PDAs, and laptop computers free the office worker from the geographic restrictions of the office, and argue that "being mobile" is not simply about the physical movement of the body but the interactions between people, which are then freed from a place-bound, face-to-face modality through these technologies.[26]

In the focus on these changing interactions in the business context, Kakihara and Sørensen identify three main dimensions of human mobility: *spatial*, *temporal*, and *contextual*.[27] Spatial mobility encompasses the movement of objects, symbols, and space. The mobility of objects is the most familiar definition of the term, the easily-recognizable idea of objects passing through physical space. The mobility of symbols is also a familiar concept: the diffusion of semiotic texts and images through space, to be found in the global recognition of Coca-Cola,

26. Masao Kakihara and Carsten Sørensen, "Mobility: An Extended Perspective," in *Proceedings of the 35th Annual Hawaii International Conference on System Sciences*, 2002, 2, https://doi.org/10.1109/HICSS.2002.994088.

27. Kakihara and Sørensen, 2.

Disney, McDonald's and their signifying symbols. The silver cursive script, mouse ears and stylized letter "D," or the golden arches all convey specific meanings and associations that could be said to be nearly-universal. Finally, there is the mobility of space or spaces, the decoupling of particular interactions or activities from the spaces in which they are commonly expected to take place. Examples of this can be found in the relatively-recent phenomenon of online communities, where the formation of 'community' takes place not in a physical location (the community of a small town, a neighborhood, a workplace) but is paradoxically located *out there* online, somewhere.[28]

Alper discusses a period in the early 1980s when the portable computer first emerged as an object of general interest as a way of drawing attention to histories of mobile media outside of and beyond the mobile phone.[29] Rather than the neat category of the 'laptop computer' that is familiar today, this early period which produced the computer as a device that could be untethered from the office space was fraught with negotiations as to the meaning of what a 'portable' or 'mobile' computer would look like and do. This period is significant, Alper says, because these devices "altered users' anticipations for how and where mobile communication could possibly be incorporated into daily life."[30] The computers described as 'portable' in the early years of this time period were certainly—*technically*—portable, in that they could be transported from one location to another by a single able-bodied individual, but they would still require being connected to a wall outlet for power and provided none of the wired or wireless connectivity we associate with mobile media today. Nonetheless, while these early portable devices lacked actual *de facto* portability, they still allowed users to begin to think of the

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28. Kakihara and Sørensen, 2–3.

29. Alper, "Portables, Luggables, and Transportables."

30. Alper, 323.

possibilities of truly portable devices. From today's perspective there is nothing remotely

'portable' about the original Apple Macintosh, though it does weigh about 15–20 pounds (well

within the ability of an able-bodied human to carry, at least for short distances), has a carrying

handle integrated into its outer shell, and was sold with an official padded carrying case—in

addition to a number of other 'portable' accessories—intended to facilitate a certain ease of

travel (fig. 1.1). In merely making visible/possible the spatial mobility of the personal computer,

highly-impractical examples like this contributed nonetheless to "the imagined affordances of

contemporary mobile media."[31]

Figure 1.1: Apple Computer, "What to Give the Computer that Has
Everything," (advertisement), Newsweek, 1994, accessed August 20,
2023, http://www.macmothership.com/gallery/gallery3.html

Temporal mobility, according to Kakihara and Sørensen, is the effect of networked

information and communication technologies on the time expected or required to complete a

work tasks. The examples of typography as accelerating the pace of the production of printed

material or the assembly line accelerating the production of goods in a factory are both familiar,

but the use of Internet-enabled devices and software now allows information to be sent and

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31. Alper, 323.

received nearly-instantaneously. At the same time, the emphasis on the computer as a device for

multitasking further encourages this temporal compression of workday tasks: the worker is able

and expected to be replying to emails while preparing documents and conducting research, tasks

which are also accompanied by managerial expectations of increased workday productivity.[32]

The same capitalist logic of advanced technology enabling increased productivity also extends to

the continued blurring of the boundaries between home and workplace—the spatial mobility of

Internet-connected devices means that the time for 'work' is no longer fixed to the traditional 9–5

hours of the workday, nor is it bounded to the physical confines of the office. The connectivity

afforded by mobile devices now places additional expectations on the worker to be available to

respond to text messages or emails outside of the office space and working time.

The dimension of contextual mobility extends from spatial and temporal mobilities to add

the choice of "in what way" to engage in a task or interaction, to complement the previous

dimensions of "where" and "when."[33] The flexibility afforded by mobile media in time and space

additionally allow the user to choose the manner in which they engage in interactions—to reply

to a text message with a phone call, or an email, or a face-to-face visit to the sender's desk or

cubicle, all further enabled by the previous dimensions of spatial/temporal mobility.

McCrea, writing about the differences between 'portable' and 'mobile' game systems,[34]

describes the negotiations players of portable/mobile video game systems undertake in

attempting to find times/places that are considered socially acceptable for playing video games in

public, ultimately engaging in "a type of spatial co-option, or a type of carving out of private

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32. Kakihara and Sørensen, "Mobility," 3–4.

33. Kakihara and Sørensen, 4.

34. Unfortunately, this article fails to articulate a productive distinction between 'mobile' and 'portable' game playing practices, opting instead to argue that these concepts are roughly equivalent to the tedious dichotomy of 'casual' versus 'hardcore' modes of play that frequently appear in popular gaming culture.

space from the broader public space."[35] Not only do portable video game systems—another new media form usually classified as 'portable' rather than 'mobile'—allow the users to engage with a game-playing experience with a choice of "where" and "when" outside of "the home" and "designated home leisure times," respectively, but they then require the user to negotiate a more contextual arena of social norms and the balance of private uses of public space.

The relationship to place/space is important to how 'mobile media' is conceptualized, but not only in the sense that mobility implies a *going-out* of media from the home, office, etc. The relationship between media user and place has been of as much (or potentially more) interest to the discipline of urban studies than it has to media studies. Wilken notes that "how we understand and engage with place is in key respects transformed by mobile media," with regards to the mobile phone's role in ad-hoc coordination of social activities, the growing reliance on the phone for navigation that allows users to depart for a destination without being fully aware of the route they will take (and ultimately, discard physical maps altogether), and for making direct communications with another mobile phone user, instead of calling a physical place and hoping to catch them there.[36] Purkarthofer offers a more nuanced look at the interaction between mobile media and place. The use of mobile media "individualise[s] perception and provide[s] immediate augmentation" of local space, producing "diversified discourses that dissolve a shared environment."[37] But in this mobile media use that fragments the individual experience of urban space, there is also the production of and participation in a local public sphere through the acts of

35. Christian McCrea, "We Play in Public: The Nature and Context of Portable Gaming Systems," *Convergence* 17, no. 4 (November 1, 2011): 393, https://doi.org/10.1177/1354856511414987.

36. Rowan Wilken, "Mobilizing Place: Mobile Media, Peripatetics, and the Renegotiation of Urban Places," *Journal of Urban Technology*, February 9, 2009, 39–42, https://doi.org/10.1080/10630730802677939.

37. Florian Purkarthofer, "Tokyo behind Screens: Participant Observation in a City of Mobile Digital Communication," *International Quarterly for Asian Studies* 50, no. 3–4 (2019): 61, https://doi.org/10.11588/iqas.2019.3-4.10706.

interaction via mobile media—sharing pictures or posts describing a particular location or event, for example, or communicating to establish a meeting point through references to shared landmarks or other physical features.[38]

But mobile (or portable) media has been acting on our sense of and relationship to place since before the mobile phone, and some of the investigations of early transformations of space have had portable media as their focus. Heike Weber, in a survey of radio use in West Germany in the 20 century, describes how monaural earbuds were used with portable radios up through the 1970s. While binaural headphones became popular among home listeners interested in a high-fidelity audio experience or when loudspeakers were inappropriate, the use of monaural earbuds with portable radios spoke to a media culture of "respectful listening."[39] Practices of radio use at this time emphasized the user's coexistence with public space—of "listening without bothering anyone," where the use of portable media was intended to co-exist with the external environment.[40] The binaural headphones of the Sony Walkman, in comparison, make the device a point of contention through, as Du Gay et al. describe it, "taking private listening into the public domain."[41] What can be seen as an unacceptable encroachment of the private into the public can also be taken as the listener imposing their own autonomy in the urban environment through a "mobility of the Self," distancing themselves from the urban soundscape through immersion in the Walkman.[42]

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38. Purkarthofer, 62.

39. Heike Weber, "Head Cocoons: A Sensori-Social History of Earphone Use in West Germany, 1950–2010," *The Senses and Society* 5, no. 3 (November 1, 2010): 346, https://doi.org/10.2752/174589210X12753842356089.

40. Weber, 345.

41. Paul Du Gay et al., *Doing Cultural Studies: The Story of the Sony Walkman*, 2nd ed. (Los Angeles, CA: Sage Publications, 2013), 106.

42. Shuhei Hosokawa, "The Walkman Effect," *Popular Music* 4 (1984): 175.

Turcotte and Ball draw upon Foucault's concept of the "heterotopia" or other spaces of crisis or rupture that exist within the real world yet are simultaneously set away and closed off from it by means of certain selectively-permeable boundaries.[43] While their use of Foucault's heterotopia in this example is not entirely correct—especially in light of Purkarthofer and the portable media examples above, where the mediated experience of the city is highly individualized and has no lasting duration beyond that moment—they do explore the notion of the mediated experience of everyday life in a way that productively contributes to a definition or understanding of mobile media. They make the claim that "all transportation is local," meaning that mobility (movement through physical space, as with Kakihara and Sørensen's spatial mobility) is just as much about the layers of information that we move through as it is our real-world surroundings.[44] Here "transportation" is framed not just as long-distance travel but of our everyday movements, and the distance itself is rendered irrelevant through through our constant connections with/to the digital networks facilitated by what Turcotte and Ball term "mobile digital network technologies" (MDNTs), which "assert the individual's agency by allowing individuals to feel secure, connected, and in control while moving through spaces."[45] Rather than the fragmentation of social ties that was feared in the era of portable audio media, the networking of MDNTs allows the users to maintain and participate in relationships that no longer depend on or are tied to physical locations of bodies or sites of interaction. In their emphasis on the networked nature of MDNTs, Turcotte and Ball offer an additional, highly useful way we might define and conceptualize mobile media: they note that "unlike previous social media forms, such

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43. Michel Foucault, "Of Other Spaces," trans. Jay Miskowiec, *Diacritics* 16, no. 1 (April 1, 1986): 22–27, https://doi.org/10.2307/464648.

44. Joseph F. Turcotte and M. Len Ball, "'All Transportation Is Local': Mobile-Digital-Networked-Technologies and Networked Orientations," *Transfers: Interdisciplinary Journal of Mobility Studies* 3, no. 1 (2013): 121–2, https://doi.org/10.3167/trans.2013.030109.

45. Turcotte and Ball, 123.

as the book which did not allow for reciprocal communication, these networks allow social

interactions to transpire in 'real-time,' peripheral to physical interactions in public space."[46]

While this definition is complicated somewhat by recent technological advances in portable

media—everything from game consoles to standalone media players to e-readers have some

form of Internet connectivity—it does point to one more potential way to distinguish portable

from mobile media: we could say that one of the overwhelmingly primary or intended functions

of mobile media is to facilitate communication (in a variety of mediated forms).

As should be clear by this point, much of the existing research on mobile media takes a

sociological or anthropological approach to studying the phenomenon, as exemplified by the

focus on social interaction. Ling counts the mobile phone among "social mediation

technologies," and points out how mobile media doesn't just function in a vacuum: "the use of

social mediation technologies is not simply a matter of personal choice; it is in general an

assumed part of social interaction."[47] Ling argues that the mobile phone is similar to the

mechanical clock and the automobile in that they have all had significant effects on social

practices through their ubiquity—as these technologies become further embedded in society, they

generate "reciprocal expectations" that other members of society will rely on them as well: the

clock to be on time for meetings or events, the car to guarantee transportation to distant

locations, and the mobile phone as a means of "microcoordination," the iterative modification of

social arrangements thanks to the immediacy of mobile communication.[48] Important to the

discussion of Japanese mobile media and the uptake of the keitai denwa in Chapter 4, Ling

points out that a technology of social mediation must first develop a "critical mass"—that is,

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46. Turcotte and Ball, 126.

47. Ling, *Taken for Grantedness*, 7.

48. Ling, 9–10.

having progressed from individual hobbyist use or experimentation to being taken up by more

people in a general audience. This critical mass takes the technology from an individual use and

transforms it into a social necessity, where people who fail to adopt/adapt to this new technology

may be excluded from social circles or considered a burden on the group, etc.[49]

While there exists a significant amount of literature on the social effects of mobile media

(or increasingly, social media as synonymous with mobile media, which makes interesting

suggestions as to the current role of mobile media today as potentially subordinate to social

media platforms), the property of 'mobility' itself is not always explicitly defined or explored.

For the purposes of this dissertation, though, the scholarship explored above allows us to

cultivate a working definition of 'mobility' to be employed in the genealogical investigation of

the keitai era. First, mobility is comprised of spatial, temporal, and contextual aspects, allowing

interactions to take place without regard to physical location, time (both in terms of time of day

and as discrete versus overlapping activities), or the 'format' the interaction takes (SMS, voice or

video call, messenger app, etc.). Mobile media devices are light enough to be carried on the body

with little to no additional effort, and can come to be seen as intimate extensions of the body

itself rather than separate, discrete tools. Mobile media is used in a way that alters our perception

of and relationship with physical space, overlaying our immediate physical location with

networks of data that provide information or facilitate communication. Finally, by virtue of their

mobility, mobile media impose social expectations on us in terms of their presence and use in

conducting social interactions; mobile media are connected not simply to the Internet or other

informational networks, but they connect us to other members of society as well.

The scholarship used in producing this definition of mobility in this section all draws

from different eras of mobile media scholarship which take different examples of

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49. Ling, 24–5.

mobile/portable media as their objects of inquiry: the portable computer, the portable game

console, portable stereo, and finally the mobile phone. This points to one additional defining

property of contemporary mobile media, and one that ties into genealogy as method in this

dissertation: remediation.

<u>Remediation as Genealogy in Mobile Media</u>

As one way of attending to the descents that occurred in this history of mobile media,

Bolter and Grusin offer the concept of "remediation," described as "the representation of one

medium in another," which is "a defining characteristic of new digital media."[50] The process of

remediation can work in a number of ways: by simply reproducing or re-presenting older media;

by emphasizing the difference between the old and the new; by trying to refashion older media

while still marking its presence; or through "trying to absorb the older medium entirely, so that

the discontinuities between the two are minimized."[51] Steve Jobs's infamous announcement of

the iPhone at the 2007 MacWorld Expo and his description of the iPhone as comprising an iPod,

a phone, and an Internet communications device is an almost too-perfect example of the

remediations that produced the smartphone.[52] Even in the smartphone of today—which in some

senses is as vastly different from the iPhone of 2007 as the iPhone was to the keitai denwa, the

traces of the media it is descended from cannot be entirely erased. Even as the iPhone attempts to

fully erase the respective iPod, phone, and Internet communications devices as a new convergent

device, Bolter and Grusin argue that "the very act of remediation, however, ensures the older

medium cannot be entirely effaced; the new medium remains dependent on the older one in

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50. Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, Mass: MIT Press, 2003), 45.

51. Bolter and Grusin, 45–7.

52. "Steve Jobs Introduces iPhone in 2007," 2011, https://www.youtube.com/watch?v=MnrJzXM7a6o.

acknowledged or unacknowledged ways."[53] The dependencies the iPhone relies on for its

functionality are hardly unacknowledged (a dual debt to previous technologies is carried in its

name alone), yet everything about the device itself—its hardware and software, the cultural

discourses that surround it—would prefer that the iPhone erase both the telephone and the iPod.

Bolter and Grusin characterize remediation as being defined by two characteristics,

immediacy and hypermediacy. Immediacy is represented in the desire to erase all traces of

mediation so that the boundaries between a medium and what it claims to represent—the 'real'—

are rendered completely transparent.[54] Hypermediacy is the overwhelming plurality of media,

especially in the case of digital media, where multiple different forms are enlisted to create the

desired impact—think of the contemporary website which draws on plain text, photographs, one

or more video streams, etc. In contrast to immediacy, hypermediacy makes explicit the mediation

of the content we are consuming.[55] In the "double logic of remediation," immediacy and

hypermediacy rely on each other—the immediate impact of media is achieved by the reliance on

multiple competing media forms, while hypermedia strives for immediacy through its curation of

media forms for the most spontaneous-seeming impact.[56]

While Bolter and Grusin's work shows its age in the wide-eyed ways in which the new

digital media of the 1990s are discussed, remediation offers a complementary theoretical

orientation to the genealogical method in its refusal to privilege a linear narrative of

technological history. Through remediation new media forms constantly call back to older media,

and extant older media can attempt to refashion themselves in the more immediate image of

newer media. Alper, quoting Wortman (1985), notes how the term 'mobile' is borrowed from

53. Bolter and Grusin, *Remediation*, 47.

54. Bolter and Grusin, 30.

55. Bolter and Grusin, 34.

56. Bolter and Grusin, 4–6.

radio history to "distinguish hardware that can easily be carried from place to place and easily plugged in and used."[57] While a somewhat superficial example, this makes the case that even using the term *mobile media* in the context of feature or smartphones itself remediates the concept of 'mobility' that may have been established much earlier in the history of a different medium. This cyclical borrowing and refashioning from past media (and past media attempting to do so from the present/future) is in line with a media-genealogical approach emphasizing a number of descents which surface briefly and are subsumed again, or which finally emerge in that moment of conflict and are recognized for however long that dominance remains.

While this dissertation is arrayed around the central axis of the keitai denwa, I don't wish to suggest that it represents the whole of mobile media during its time of emergence, just as it is a grave oversight to imply that today's smartphone represents the whole of contemporary mobile media. The 1990s and early 2000s were an especially fruitful time in a genealogy of mobile media; while all forms of mobile phones were engaging in negotiations over what sorts of features and uses the mobile phone could take, there was a thriving ecosystem of other devices testing the limits of mobile communication, work, and leisure. Many of these technologies can be said to have 'failed' in a purely economic sense—they were somewhat limited in their lifespans overall, though some produced short- or long-term dynasties of product lines from their parent companies and a short persistence of new models based on minor or major iterations of successful features. Whether extant or extinct, many of the devices at this time in some sense had features that were reabsorbed/remediated in newer, later developments in mobile media. This dissertation will attend to some of these moments of remediation as a significant part of the descents and emergences that media genealogy seeks to make visible.

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57. Alper, "Portables, Luggables, and Transportables," 331.

Conclusion

Benjamin Nicoll's *Minor Platforms in Videogame History* is a media-archaeological examination of what Nicoll terms "minor platforms," a term used "not to imply insignificance, but rather to describe a set of objects, subjects, and spaces that are, for various reasons, ancillary to conventional narratives of videogame history."[58] While the keitai denwa is probably not considered "historically minor" in the same vein of the platforms that Nicoll examines, the argument can be made that it is generally excluded from most mainstream histories of modern computing in general, and in histories of mobile media it remains an under-examined object largely due to the "other-ness" of its Japanese origins and the largely Anglo-European orientation of most mobile media studies. In this chapter I discussed the theoretical/analytical approach of media genealogy and the new media theory of remediation, which will help to frame the remainder of the dissertation. I also reviewed applicable scholarship on mobile media for the purpose of developing a working definition of 'mobility' which defines and situates the objects which are the focus of this work. The continuing dissertation aims to address the same questions posed by Nicoll as a rationale for the choice of platforms in his work and for how they can be approached as objects of study: "What can be gained by going against the dominant narratives of videogame history? What does a history of minor platforms reveal that standardized accounts of technological development do not? And what kinds of archives can be deployed for analysing minor media histories?"[59] The basic topics are, of course, different—minor videogame platforms and geographically-isolated mobile phone technologies—but the questions and their applicable approaches remain valid.

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58. Nicoll, *Minor Platforms in Videogame History*, 13.

59. Nicoll, 17.

The next chapter will trace the conditions of possibility for the emergence—that allowed for the emergence—of the keitai denwa in the 1990s through a survey of the changing economic, social, and political landscape in Japan in the later part of the 20 century, especially with regards to information and communications technologies. The peak and collapse of Japan's "bubble economy" forms the economic background of this period, with its period of great social affluence contributing to social expectations of and demand for modern, high-technology living. The chapter will discuss three attributes that laid the technological, political, and social foundations for the emergence of the keitai in the late 20 century. The first is Japan's redevelopment of its telecommunications infrastructure following World War II, and how the initial public monopoly and later privatization of the national telephone carrier produced a competitive market for the development of telephone services. The second attribute draws from science and technology studies in Japan to produce an outline of the general social attitudes towards technology in the late postwar era and examine the role of scientific research in the government and private sectors. The final attribute concerns recent scholarship in the field of Internet histories which attempts to decentralize familiar Euro-American narratives of Internet development (with their focus on Cold War technologies such as ARPANET etc.) and instead attends to the different cultural and geographic factors that drove Internet diffusion and adoption in different ways across the world. The development of information and communication technologies in Japan was marked by the dual tension of trying to meet the needs of the domestic business and recreational markets while also negotiating adoption of, or adaptation to, emerging global platforms and networks. These adaptations and localizations of global technologies for the specific Japanese market and business expectations, along with the structural features of the domestic

telecommunications industry and existing attitudes towards high technology, helped to create the

conditions of possibility for the emergence of the keitai denwa.

Chapter 2.

Conditions of Possibility: Information and Communications Technologies in Late 20ᵗʰ Century Japan

<u>Introduction</u>

In Robert Zemeckis's science-fiction movie trilogy *Back to the Future*, an eccentric inventor/mad scientist archetype, Emmett "Doc" Brown (Christopher Lloyd), creates a time machine in the form of a 1981 DMC DeLorean automobile which he and the films' teenage protagonist Marty McFly (Michael J. Fox) use to travel between their home year 1985 and various dates in the 19, 20, and 21 centuries. In the trilogy's third installment, *Back to the Future Part III*, an accident with the DeLorean traps Marty alone in the year 1955, and he must enlist the help of 1955 Doc Brown to repair the DeLorean's damaged electronics using contemporary parts. In a scene where they attempt to diagnose the nature of the problem, Doc peers through a magnifying glass at an electronic chip extracted from one of the car's components. "No wonder this circuit failed," he scoffs. "It says 'Made in Japan'." Marty laughs and shakes his head. "What do you mean, Doc? All the best stuff is made in Japan," he says matter-of-factly. Doc gazes into the distance, pondering this fantastical notion: "Unbelievable."[60]

While this minor bit of dialog likely elicited a knowing chuckle from audiences in 1990 who were familiar with the high-tech and high-quality connotations of "Made in Japan" discourse and 'branding', it also serves to perfectly illustrate the shift in both the material reality and the international perception (and reception) of Japan in the second half of the 20 century. Japan of 1955 was just three years past the end of its occupation by the US-led Allied Powers following the end of World War II. The country was still extremely impoverished and reeling from the destruction of Allied bombing campaigns that left many major cities completely

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60. *Back to the Future Part III*, DVD (Universal Pictures, 1990).

devastated. Japan of 1955 was beginning the track to a rapid post-war modernization (though its

"economic miracle" was still some years off), but was also confronting its own role in the post-

war world, as a former imperial power now as an occupied quasi-colony, held up (with little of

its own input in the matter) as the prime example of an American experiment in international

democratization. The Japan of 1985 was at the peak of a post-war asset price bubble—a truly

"unbelievable" progression from the nation's condition 40 years previously. But the bubble

collapsed shortly after the film's release in 1991, leading to a period of economic stagnation

referred to as the "Lost Decade"[61] and later as the "Lost Decades" encompassing the 2000s and

even the 2010s. However, even during this period of economic and social turmoil, the imaginary

of 'high-tech Japan' persisted through much of the world; despite the general economic

conditions many of Japan's consumer electronics industries continued to produce devices

targeting Japanese audiences which became the envy of much of the rest of the world, whether

through their intrinsic qualities or functionality, or through the enduring cultural stereotypes of

Japan as the futuristic Other.

<u>"All the Best Stuff is Made in Japan:" Discourses on Japanese ICTs</u>

Before the idea that "all the best stuff is made in Japan" could become a pop-culture

axiom, the popular representation of Japanese technology, at least in the US, passed through a

much less complimentary era. From the 1970s, the Ministry of International Trade and Industry

(MITI, now succeeded by the Ministry of Economy, Trade and Industry, METI) wanted to make

Japan's economy internationally competitive, but recognized that certain kinds of manufacturing

could potentially be done more cheaply in other developing nations. MITI decided that

electronics and advanced industrial manufacturing would be the area in which Japan stood the

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61. Fumio Hayashi and Edward C Prescott, "The 1990s in Japan: A Lost Decade," *Review of Economic Dynamics* 5, no. 1 (January 1, 2002): 206–35, https://doi.org/10.1006/redy.2001.0149.

best chance of international success, and the state invested heavily in manufacturing of

automated machinery and industrial robotics. More importantly, MITI also provided substantial

investment and support for microelectronics research and development.[62] Japanese corporations

began producing integrated circuits in the mid-1960s to compete with the United States in

developing consumer audiovisual goods such as televisions and radios, and sales of Japanese-

made goods in these areas passed sales of those made in the United States by the middle of the

1970s.[63]

   The Japanese state's significant support for and investment in its growing high-

technology industries eventually sparked a wave of panic among competing US industries, and

inspired a lucrative publishing genre of books that attempted to explain Japan's sudden economic

rise, the danger it posed to US dominance of these industries, and what must be done about it.

This genre spanned the 1980s and even extended into the early 1990s, and combined hysterical

proclamations about Japan's plan for economic world dominance with comparative analysis of

US and Japanese industries and business practices. A 1981 report by the Datapro Research

Corporation on Japanese minicomputers promised "the first unbiased objective report on

Japanese Computers [sic] ever published in English" on its cover.[64] In the introduction, however,

the report laments that IBM's recent announcement of the IBM Personal Computer and the IBM

PC-compatible standard that would go on to define personal computing specifications even today

had "throw[n] open the world's computer markets to the Japanese" and that with the availability

of the IBM PC specifications as an open standard, "the Japanese must have celebrated all

62. Shigeru Nakayama, *Science, Technology and Society in Postwar Japan* (London: Kegan Paul International, 1991), 164.

63. Nakayama, 163.

64. Datapro Research Corporation, *All about Japanese Computers* (Chicago, IL: McGraw-Hill, 1981).

night."[65] While the actual report on the various minicomputer models thankfully sticks to a much more objective description of the different models and their features, the introduction is full of editorial commentary framing "the Japanese" as a sinister external force determined to pry open and dominate American's technology economy at any cost.

One hardly needs to read past the titles of these kinds of books to understand their discursive framing of these issues, but the prefaces leave no doubt as to the authors' ideological orientation. Feigenbaum and McCorduck's *The Fifth Generation: Artificial Intelligence and Japan's Computer Challenge to the World* ostensibly covers the Fifth Generation Computer Systems Project, a MITI-led research project that attempted to develop a new generation of general-purpose computers which would utilize AI-based natural language processing as the interface. The intent was that the systems could be accessed and controlled by any user—not just those already proficient in the conventions of computer use—through standard human languages.[66] Feigenbaum and McCorduck however saw something much more sinister in this project: "the Japanese have seen gold on distant hills and have begun to move out. Japanese planners view the computer industry as vital to their nation's economic future and have audaciously made it a national goal to become number one in this industry by the latter half of the 1990s. They aim not only to dominate the traditional forms of the computer industry but to establish a 'knowledge industry' in which knowledge itself will be a salable commodity like food and oil."[67] This paragraph alone overflows with implications to unpack. The imagery of "gold on distant hills" calls back to the frenzied push to stake claims for hopefully-lucrative gold mines in

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65. Datapro Research Corporation, 1.

66. Hideo Aiso, "The Fifth Generation Computer Systems Project," *Future Generation Computer Systems* 4, no. 3 (October 1, 1988): 159–75, https://doi.org/10.1016/0167-739X(88)90001-5.

67. Edward A. Feigenbaum and Pamela McCorduck, *The Fifth Generation: Artificial Intelligence and Japan's Computer Challenge to the World* (Reading, Mass.: Addison-Wesley, 1983), 2.

the mid-19 century American West; this could also suggest the exploitative and environmentally-catastrophic nature of industrialized mining for gold and other precious metals that developed later, and possibly the violent and often genocidal interactions between miners and Native inhabitants of the gold-bearing regions.

Comparisons to familiar moments in American history (and the implications for what would have happened had things turned out differently) abound in this genre. Davidson writes that "for the Japanese, the information technology sector offers a vehicle to achieve their manifest destiny," and that the Fifth Generation Computer Systems Project is "equivalent to the American moon shot, and the country is funneling national resources and energies into information technology with single-minded zeal and dedication."[68] "Manifest destiny" evokes the mandate of continued westward expansion of the United States across the north American continent in several stages of American history (and the attendant subjugation/genocide of the Native inhabitants of the land), and of course the "moon shot" imagery is clear in its implications of Cold War politics, scientific progress as (barely veiled) proxy for armed conflict, and the wholesale mobilization of the national economy for a political project.

The above examples are at least slightly more creative in their allusions to sites of conflict within American history. Forester writes of Japanese industry "launching coordinated attacks on overseas markets—especially the US," a framing which hardly fails to evoke the coordinated attacks on Pearl Harbor and other targets in east and southeast Asia on December 8, 1941.[69] Unlike that day which would live in infamy, Forester tempers his grim warning with at least the promise of understanding and combating the coming threat: "Japan is about to overtake

68. William H. Davidson, *The Amazing Race: Winning the Technorivalry with Japan* (New York, NY: John Wiley & Sons, 1984), vii–viii.

69. Tom Forester, *Silicon Samurai: How Japan Conquered the World's IT Industry* (Cambridge, Mass.: Blackwell Business, 1993), x.

the US to become No. 1 in information technology, the key strategic technology of our times. This book tells the story of how the Japanese did it…"[70] The book is apparently set up like a journalistic exposé, a dramatic reveal of a criminal act: it was the butler in the parlor, the Japanese in the IT sector. *This* is how the Japanese did it. Davidson draws from even further back in history, noting that since the Meiji Restoration in the mid–1800s, Japan has "sought a position of leadership, pride, and prestige in the Western world," and arguing that "by gaining preeminence in information technology," Japan is finally able to realize this centuries-old goal.[71] If so, this would be an incredible achievement—contemporary nations are barely able to play a long game of working towards a unified national goal in the span of a decade, much less follow these plans over the course of contemporary modernity.

These books sound their respective alarms by recounting the growth of Japanese consumer technologies on the global stage in the post-war era. For Feigenbaum and McCorduck, the prospect of Japanese dominance in the computing industry would be just the latest in a string of incursions into other industries:

> We now regret our complacency in other technologies. Who in the 1960s took seriously the Japanese initiative in small cars? Who in 1970 took seriously the Japanese national goal to become number one in consumer electronics in ten years? (Have you seen an American VCR that isn't Japanese on the inside?) In 1972, when the Japanese had yet to produce their first commercial microelectronic chip but announced their plans in this vital "made in America" technology, who would have thought that in ten years they would have half of the world's market for the most advanced memory chips? Are we about to blow it again? The consequences of complacency…will be devastating to the economic health of our most important industry.[72]

Forester deploys the imagery of a predator quietly, patiently making its way "up the food chain," posing a disruption to an implied natural order in its refusal to know its place:

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70. Forester, ix.

71. Davidson, *The Amazing Race*, vii.

72. Feigenbaum and McCorduck, *The Fifth Generation*, 2.

Starting four decades ago with transistor radios and televisions, the Japanese had by the 1970s come to dominate audio, video, and most other areas of consumer electronics. In the 1980s, Japanese companies targeted and swiftly captured leadership of the vitally important semiconductor industry. Since then, the Japanese have steadily moved up the so-called technology "food chain," quietly building market share in laptop computers, workstations, mainframe computers, supercomputers, and software. Along the way, they have gained a stranglehold over key areas of advanced manufacturing technology such as automated machine tools, robots, and flexible manufacturing systems.[73]

Success in high technology industries is framed exclusively as a zero-sum game: either America dominates on the world stage, or Japan controls everything and America is demoted to the status of a peripheral nation, existing only in Japan's shadow. Forester warns that "the entire high-tech sector…is at risk from Japanese domination" and that without a focused effort to "[learn] the lesson of Japan's high-tech business strategy and [change] course, there is a grave danger that America and Europe could become little more than industrial museums—and Japan's economic triumph will be complete."[74] Davidson reiterates that there is only one acceptable outcome in this economic competition, and offers that "[i]f the United States is to retain its world leadership in [industrial endeavors], it must dominate those sectors that are critical for success."[75] But the most hysterical tone is set by Feigenbaum and McCorduck, who close their preface with the warning that "the stakes are high. In the trade wars, this may be the crucial challenge. Will we rise to it? If not, we may consign our nation to the role of the first great postindustrial agrarian society."[76]

The real-world anxieties of Japan's sudden economic success in the high technology sectors are reflected in contemporary popular entertainment of the era, though with a notably different stance (though still often lacking in nuance) on the phenomenon. While certain media

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73. Forester, *Silicon Samurai*, ix–x.

74. Forester, x.

75. Davidson, *The Amazing Race*, vii.

76. Feigenbaum and McCorduck, *The Fifth Generation*, 3.

perpetuated the negative portrayal of Japanese industry to often racist extremes, such as Michael

Crichton's 1992 novel *Rising Sun* and its 1993 film adaptation, the general tone was much more

celebratory, possibly as a result of the increasing prominence of Japanese consumer electronics

in the consumer space. The contradictions between longstanding narratives of the exotic Orient

(wherein Japan and China, as well as other east Asian nations, were often portrayed

interchangeably) and the recent concerns with Japanese economic growth combined to produce a

phenomenon that Morley and Robins describe as "techno-Orientalism," wherein "these

postmodern [new media and communication] technologies become structured into the discourse

of Orientalism." [77] But rather than a unidirectional 'Western' gaze that produces an imaginary

Japan, techno-Orientalism sees a much more porous combination of popular culture depictions *of*

Japan (*Neuromancer*, *Blade Runner,* much of the cyberpunk sci-fi genre) and *from* Japan (otaku

culture, Japanese cyberpunk science fiction such as *Akira*, *Ghost in the Shell*, etc.) in ways that

make it difficult to separate the Orientalist gaze from domestically-produced reflections on

economy, culture, and nation. Before later descending into a pastiche filled with empty signifiers,

the cyberpunk science fiction genre provided a critique of the increasingly global nature of

neoliberal capitalism in its vision of a future in which Japanese corporations had achieved the

sort of worldwide cultural dominance and recognition previously afforded to names like Nike,

McDonald's, or Coca-Cola. Popular Japanese science fiction works like *Akira* and *Ghost in the*

Shell that had achieved international popularity seemed to mesh comfortably with the overall

cyberpunk politics and aesthetics, though Bolton, Csicsery-Ronay Jr., and Tatsumi note that

"Japanese science fiction texts have frequently been double coded, evoking Japanese national

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77. David Morley and Kevin Robins, "Techno-Orientalism: Japan Panic," in *Spaces of Identity: Global
    Media, Electronic Landscapes and Cultural Boundaries* (New York, NY: Routledge, 1995), 169–70.

concerns and popular myths while resonating strongly with foreign audiences."[78] As a result, the techno-Orientalist imaginary of 'Japan' is seemingly reinforced through domestic production of media that support these perceptions—'even Japan sees itself in this way!'—while the Japanese production and reception of these media are engaged in their own independent processes of meaning-making.

This section provides a brief overview of the complex and contradictory portrayals of Japan in the American popular consciousness in the last decades of the 1900s, not as analysis of these portrayals themselves (which is likely to be found in greater detail and rigor in other disciplines) but to draw attention to the actually-existing nature of these contemporary discourses, as simply one contribution to the discursive formation of 'Japanese high technology' in the later 20 century. And as this chapter will later show, Japan's economic policies regarding high technology were less aimed at the sort of post-war retribution seen in so many of the panicked accounts above, and more concerned with rebuilding domestic industries in an economy that had been thoroughly transformed by the experience of the war and the Occupation-era changes to the nature of domestic science and technology, and with cultivating a technological independence in an era where Japan's accelerated modernity was initially driven by foreign technologies that were often culturally and linguistically incompatible.

These shifting discourses of 'high-tech Japan' are part of what this chapter discusses as the conditions of possibility of the keitai denwa: the particular configurations of political and economic systems, technological developments, and social and cultural attitudes that allowed this particular technology to emerge in its particular way in Japan in the 1990s. This is not to

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78. Christopher Bolton, Istvan Csicsery-Ronay Jr., and Takayuki Tatsumi, "Introduction," in *Robot Ghosts and Wired Dreams: Japanese Science Fiction from Origins to Anime,* ed. Christopher Bolton, Istvan Csicsery-Ronay Jr., and Takayuki Tatsumi (Minneapolis, MN: University of Minnesota Press, 2007), vii–xxii.

argue that any of these structures or technologies would have inevitably produced the keitai

denwa, or that it was the inevitable result of these configurations. Rather, the configurations

produced an environment (*épistémè*) where it was possible to think of that which would become

the keitai, which was then able later to emerge as a discrete socio-technical artifact. And while

the overlapping, rhizomatic inputs of these configurations produced the conditions of possibility,

this argument should not be read as implying that the keitai denwa could ONLY have been

developed in Japan, or that there is some sort of Japanese techno-exceptionalism which enabled

this device to only emerge there, but rather that the historical and material conditions of Japan at

this time made it possible for the mobile phone to assume the specific historical-discursive form

of the keitai denwa.

This chapter argues that three primary attributes contributed to the conditions of

possibility of the keitai denwa. The first is the configuration of the domestic telecommunications

industry itself through the second half of the 20 century to the 1990s. Japan did not escape the

global push towards the deregulation and privatization of state-owned enterprises that began to

gain momentum in the 1970s, and the transformation of Nippon Telephone and Telegraph from

state-owned telecommunications monopoly to private corporation nominally opened the

country's telecommunications market to both domestic competition from other service providers

and to foreign interactions in terms of investment, standard-setting, and licensing. The resulting

political-economic environment enabled the growth of Japan's commercial telecommunications

industry and allowed for the emergence of competing carriers that made up the mobile phone

market.

The second attribute comprises the overall cultural attitudes and relationships towards

technology that characterize post-war Japan, as prime components of the country's post-war

national identity, and the global narratives which portrayed Japan's complete recovery from its wartime devastation as an "economic miracle" (and as part of a larger—and very paternalistic-sounding "Asian miracle"). State-led attempts to rebuild Japan's industrial economy following the Allied Occupation and the close partnerships between academic research, corporate R&D, and state policy all worked together to shape discourses of and attitudes toward technology as a significant aspect of national identity.

Finally, the last attribute looks at the state of information and computing technologies in Japan in the last decades of the 20 century. The development and use of mainframe and personal computers in Japan occurred along a different trajectory than that of the US, which saw the IBM-compatible personal computer (and to a lesser extent, the Apple II and then the Macintosh line) as the dominant model in consumer computing. The Japanese computing industry, and cultural attitudes towards computers, were shaped by different forces than those which were present in the United States and the personal computer acquired different meanings and expectations as to how it would function and what its uses would be. As in the experience of the United States, there was also robust experimentation in the realm of portable computing that sought to transplant certain features and functionality of the desktop computer into a mobile (or at least portable) form. Japan's experience of the Internet is also marked by a different historical timeline, standards, and diffusions of technology than the American experience as described in e.g. Abbate[79] and which is often assumed to be universal.

These three attributes were instrumental in creating the expectations for how information and communications technologies were experienced and what they could do in late 20 century Japan. The political-economic structures of the telecommunications industry, cultural attitudes towards computing and high technology, and the localized affordances of personal computers

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79. Janet Abbate, *Inventing the Internet* (Cambridge, MA: MIT Press, 1999).

and the experience of the Internet all created a social and technological landscape that made it possible for the keitai denwa to emerge as it did in the 1990s.

<center>"Asia as Method" in Computing Histories</center>

In analyzing these three areas, this chapter will draw from Yoshimi Takeuchi's concept of "Asia as method," particularly in the second and third sections as a means of centering the Japanese experience of information and communications technologies as a methodological (epistemological) approach. Takeuchi's concept addresses the experience of modernity and modernization in Asian nations, and the tendency to conceptualize them in terms of comparisons with "the West."[80] An example is the introduction of various foreign technologies during the Meiji Period (1868–1912) which is marked by, among other things, increasing trends towards 'Westernization' following the opening of Japan to foreign trade after several hundred years of relative isolation. Speaking of the importation of various industrial technologies during this time, Takeuchi writes that "Japan's incorporation of western technology was such that it viewed this latter as a mere finished product; hence it utterly failed to grasp the scientific spirit that produces this technology."[81] While the assertion that it is necessary to understand the "scientific spirit" behind a particular technology is problematic, it is also important to acknowledge the differences in histories of technology and how they affect cultural attitudes. Much of the early history of Japanese computing, for example, revolved around the adaptation of hardware and software designed entirely around the Roman alphabet to the Japanese language, but to frame this in terms of Japanese industries having to 'catch up' to Western developments implies the problematic assertion that the techno-social conditions of 'the West' represent a normative path of modernity, and the problematic rejection of alternative paths to modernity. Chen, reflecting on the legacy of

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80. Yoshimi Takeuchi, "Asia as Method," in *What Is Modernity?: Writings of Takeuchi Yoshimi*, trans. Richard Calichman (New York, NY: Columbia University Press, 2005), 156.

81. Takeuchi, 162.

Takeuchi's "Asia as method," more explicitly points out that the perception of "modernization" of Asian nations in the late 19 centuries was characterized exclusively by comparison to the United States or Europe as the standards of modernity.[82]

The point of "Asia as method" is that "we must not always compare Japan's case with that of the advanced nations of the West, as had traditionally been done."[83] Takeuchi refers to the writings of John Dewey on Japan and China after his visits to both countries; while Dewey was initially impressed by the extent of Japan's apparent modernization and repulsed by the extent to which China appeared to be lagging behind, he gradually changed his opinion on both and noted that external appearances were not reflective of the internal structures and stability that were the actual signifiers of European-style modernity. Dewey's writing warned that if Japan's modernity remained only at the surface level, "Japan would almost certainly come to ruin," which Takeuchi takes to have come to pass through Japan's ultimate defeat in World War II.[84] Less directly, Takeuchi also refers to the Indian poet Tagore's admonition that Japan, in pursuit of Western-style modernity, should not attempt to imitate the militarism and colonial adventurism of Western nations, a warning that went unheeded in Japan's colonial advances on the Asian mainland in the decade preceding the war.

While the concept of "Asia as method" at first glance would seem mostly relevant in studies of global histories or politics, it has also been taken up by some practitioners of science and technology studies (STS) as a way of de-centering Western theories of science and technology. Takeuchi's "Asia as method" above proposes new understandings of political and historical modernity through the acknowledgment of the agency of Asian nations, instead of

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82. Kuan-Hsing Chen, "Takeuchi Yoshimi's 1960 'Asia as Method' Lecture," *Inter-Asia Cultural Studies* 13, no. 2 (June 1, 2012): 319, https://doi.org/10.1080/14649373.2012.662937.

83. Takeuchi, "Asia as Method," 156.

84. Takeuchi, 154.

through a framework that privileges the Euro-American experiences of modernity. Of more direct relation to this dissertation project, "Asia as method" through the lens of STS allows for a genealogy of mobile media that doesn't take Western—or more specifically, Anglo-centric— notions of technological progress for granted as a natural, normal starting point.

Warwick Anderson states that this perspective in STS allows for "an Asia that is good to think with, and think from, rather than a fixed, hegemonic geographical region or essential civilizational entity—Asia as method, not Asia as self-evident cultural value."[85] This means that, rather than a wholesale rejection of Western-oriented STS, "Asia as method" in STS allows acknowledgment of the multiplicity of ways of understanding technological history and its relation to society, especially within a framework that does not take for granted technological progress as simply received wisdom from the West. Lin and Law note that concepts of "Asia," "Japan," or "Japanese technology" are knowledge spaces produced through Western modes and practices of knowing that emerge from the assemblage of institutions (modes of production, knowledge producers and audiences, systems of circulation) and representations of the world (through various social theories)[86] In viewing "Japanese technology" through the frameworks of "developing nations" or "technological latecomers" etc., normative knowledge spaces are produced which exclude the possibilities of descents, emergences, of thinking media-genealogically about "Japanese technology." The diffusion view of technological innovation assumes no essential differences in culture and frames a linear development of technoscience as "simultaneously socially and economically essential and empirically visible. The West becomes

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85. Warwick Anderson, "Asia as Method in Science and Technology Studies," *East Asian Science, Technology and Society* 6, no. 4 (November 1, 2012): 448, https://doi.org/10.1215/18752160-1572849.

86. Wen-yuan Lin and John Law, "We Have Never Been Latecomers!? Making Knowledge Spaces for East Asian Technosocial Practices," *East Asian Science, Technology and Society* 9, no. 2 (June 1, 2015): 119–20, https://doi.org/10.1215/18752160-2883872.

the desirable model and forerunner. It sets the standard that the non-West should shape itself

into."[87] "Asia as method" pushes back against this standard, and the remainder of this chapter

examines the development of localized information and communications technologies in spite of

the overwhelming influence of the English language in the production and distribution of ICTs in

the late 20 century. In focusing on the conditions of possibility within in Japan that produced the

keitai denwa, this chapter will "[highlight] the specificity and importance of local mechanisms,

and therefore the fact that explanations also belong to a locality,"[88] or in other words, show that

the conditions that produced the keitai denwa are almost entirely rooted in domestic Japanese

developments, despite the Anglocentric assumptions that underlie any histories of contemporary

information and communications technologies.

<u>From State Monopoly to Open Infrastructures: The 20 Century Telecommunications Industry</u>

One of the most direct factors which produced the conditions of possibility that allowed

the keitai denwa to emerge and flourish in a particular moment in Japanese history is the state of

the telecommunications industry in the late 20 century. NTT DoCoMo's i-mode service is

arguably the turning point where the mobile phone began to be imagined as a content distribution

platform instead of exclusively a two-way communication device, so it is important to see how

the industry structure and state regulations facilitated the entry of a telecommunications carrier

into markets for content delivery.

Telecommunications in Japan began as a state-owned monopoly in the Meiji period

(1868–-1912), initially managed under the Ministry of Industry which operated from 1870 to

1885 and was involved in the adoption of a number of foreign technologies at the time, including

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87. Lin and Law, 120.

88. Lin and Law, 121.

the installation of the first national telegraph network.[89] The Ministry of Communications was

formed in 1885 and took over the management of telecommunications, among other affairs, from

the Ministry of Industry, but telephone service was not introduced until 1889 and until the early

20 century calling was limited to local areas, in contrast with the telegraph's national

infrastructure.[90] Yang notes the vital role that telecommunication infrastructure played in Japan's

imperial expansion of the 1920s and 1930s, allowing for the coordination of both military action

in and administrative control of the vast territories in Asia that Japan had invaded in the prelude

to the Second World War.[91] Following the defeat of the Empire of Japan in 1945, much of the

domestic infrastructure had been destroyed during the war, and administration of

telecommunications passed through a number of transient stages during the Allied occupation.[92]

In 1952 the Nippon Telegraph and Telephone Public Corporation (NTTPC) was created

as a state-owned monopoly overseeing domestic communications.[93] There was a post-war

rationale to this decision that ran beyond the simple continuity of state ownership of

telecommunications services from the pre-war period. Rebuilding the national infrastructure was

considered an essential project, and the deployment of POTS [94] was thought of as a universal

requirement for citizens in rural areas as well as urban ones.[95] While in the United States,

89. Tessa Morris-Suzuki, *The Technological Transformation of Japan: From the Seventeenth to the Twenty-First Century* (Cambridge ; New York: Cambridge University Press, 1994), 73.

90. Daqing Yang, *Technology of Empire: Telecommunications and Japanese Expansion in Asia, 1883-1945* (Cambridge, Mass.: Harvard Univ. Asia Center, 2010), 28–9.

91. Yang, 8.

92. Sumiko Asai, "Changes in the Interface and Industry Structure," in *Japanese Telecommunications: Market and Policy in Transition*, ed. Ruth Taplin and Masako Wakui (New York: Routledge, 2006), 19.

93. Yoshiro Takano, "Nippon Telegraph and Telephone Privatization Study: Experience of Japan and Lessons for Developing Countries," World Bank Discussion Papers (Washington, DC: The World Bank, 1992), 1.

94. Colloquially, "plain old telephone service."

95. Asai, "Interface and Industry Structure," 20.

telephone service was provided by a private monopoly under Bell System, state ownership in Japan was justified by the fears that private companies would lack the overall resources to build out service to the extent required, and service to rural areas would have been neglected or under-developed because they weren't seen as profitable.[96] While domestic telephone service was provided under the state-owned NTTPC, international communications services such as long-distance calling were managed by Kokusai Denshin Denwa (KDD), a private entity established in 1953.[97]

Beginning in the later 1970s, a number of factors led to calls for the privatization of NTTPC. Following years of constant annual growth, Japan's economy began to decline in 1973 and 1974 (with the 1973 oil crisis playing a factor), and the government began investigating possibilities for reducing public deficits. Proponents of NTTPC's privatization argued it would allow the company to better meet the changing needs of users as well as increase the company's efficiency through the reduction of personnel costs, reduction in bureaucratic overhead, etc.—in other words, the same general arguments used whenever the case is made for the privatization of public or state-owned organizations. However, one important point is that with the development and proliferation of semiconductor technology in the 1970s, the cost of entry into the industry was significantly lower. One of the strongest arguments in favor of telecommunications services as state-owned monopolies were that only the government could provide the funding and resources to deploy service at the intended scale, but the greater availability and affordability of specialized components significantly weakened that argument.[98]

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96. Asai, 20.

97. Takano, "NTT Privatization Study," 3.

98. Takano, 5.

Another factor was the broader, global trend into the 1980s of general deregulation of public or state-owned industries as part of the "globalization of finance, corporate governance, and trade."[99] The spread of advanced information and communications technologies facilitated the global transformation and interconnection of areas that were previously bounded by national borders, but with the unanticipated result of increasing international pressure on nations or industries that did not eagerly join the world system. NTTPC worked closely with domestic hardware manufacturers NEC, Fujitsu, Hitachi, and Oki Electric in the development of networking hardware, creating a substantial public/private partnership that nonetheless posed problems in the new global order, as well as initially laying the foundation for competition within Japan's telecommunications industry. NTTPC's partnership with these manufacturers resulted in significant research and development, but the domestic focus meant the infrastructure and hardware was incompatible with international products. This in turn produced trade imbalances, higher prices for interconnection with or adapting technologies to the Japanese infrastructure, and ultimately the accusations of Japanese 'unfairness' that animated many of the discourses on Japanese high-technology businesses as discussed earlier in the chapter.[100] Funk uses the term *gaiatsu* (外圧, outside or foreign pressure) to describe the international pressure on Japanese firms to globalize (which implied the deregulation or privatization of state-owned enterprises to facilitate greater flexibility), but notes that this *gaiatsu* was also used by Japanese politicians as a means to "strengthen domestic agendas."[101] Engaging with international markets and technologies was necessary to further competition within Japan's domestic markets, and

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99. Jeffrey L Funk, "The Mobile Phone Industry: A Microcosm of Deregulation, Globalization, and Technological Change in the Japanese Economy," in *Japanese Telecommunications: Market and Policy in Transition*, ed. Ruth Taplin and Masako Wakui (New York: Routledge, 2006), 65.

100. Asai, "Interface and Industry Structure," 20–21.

101. Funk, "The Mobile Phone Industry: A Microcosm of Deregulation, Globalization, and Technological Change in the Japanese Economy," 65.

deregulation necessary to sever the state's role in managing telecommunications services and infrastructure and guarantee the presumably necessary flexibility and agility that a more *lassaiz faire* approach would ostensibly provide.

In April 1985, the NTT Public Corporation was privatized and became the NTT Corporation through the 1984 Act on Nippon Telegraph and Telephone Corporation (colloquially, the "NTT Corporation Law"). The NTT Corporation Law mandated the dissolution of the NTT Public Corporation and the formation of the Nippon Telephone and Telegraph Corporation, which was ostensibly a joint-stock company that managed the shares of the two regional NTT divisions, Nippon Telegraph and Telephone East Corporation (NTT East) and Nippon Telegraph and Telephone West Corporation (NTT West).[102] In practice, this didn't actually result in significant changes to the actual size and scale of the company itself. While privatization and deregulation had been under discussion for some time, separate factors ultimately came together to produce the sustained and necessary pressure for privatization. New service subscription rates dropped, reflecting the completion of much of the post-war reconstruction of infrastructure and the availability of service to the majority of the nation. At the same time, there was increasing evidence that many subscribers were looking for a greater range in service types and costs. As discussed above, the semiconductor revolution provided increasing sophistication and availability of new communications technologies and significantly lower costs, all of which made the previous rationale for a "natural monopoly" of the state less compelling. And the general global trends, also mentioned above, towards the privatization and deregulation of public services grew stronger under the growing neoliberal ideology that demanded smaller

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102. Ministry of Internal Affairs and Communications, "Act on Nippon Telegraph and Telephone Corporation," Pub. L. No. 85, 37 (1984), https://www.japaneselawtranslation.go.jp/en/laws/view/3768 art. 1 sec. 1.

government.[103] During this time period in Japan, the previously state-owned Japan Railways was privatized and split into the three separate companies of JR East, JR West, and JR Hokkaido. In the ICT sector, state-owned British Telecom was also privatized at this time.[104]

The Telecommunications Business Act of 1984 was enacted with the purpose of "ensuring the proper and reasonable operation of telecommunications services and promoting fair competition in consideration of the public nature of telecommunications business, thereby ensuring the sound development of telecommunications and making the lives of the people more convenient, and improving public welfare."[105] It included a number of provisions requiring telecommunications companies to accept interconnection requests from other companies (as long as they were using compatible interfaces) and prohibited opaque, unfair, or inconsistent pricing for these services [106] More importantly, the Telecommunications Business Act changed the structure of Japan's telecommunications industry from monopolies on domestic (NTT) and international (KDD) operations, and instead established categories of Type I and Type II for carriers. Type I carriers would install and own networks and other infrastructure, and Type II carriers would not operate their own networks but instead lease the infrastructure from Type I carriers and provide their own 'value-added' services across the networks.[107] The Act on Nippon Telegraph and Telephone Corporation (the "NTT Law") was enacted concurrently with the Telecommunications Business Act and further spelled out NTT's new responsibilities and

103. Asai, "Interface and Industry Structure," 21.

104. In the case of America, the previous Bell Telephone empire under AT&T was forcibly broken up into smaller regional Bells in 1982, but this was the result of state-mandated antitrust action. The American telephone system, in contrast, had never been a public service or good, and always operated under private ownership, and a *de-facto* monopoly until the Bell breakup.

105. Ministry of Internal Affairs and Communications, "Telecommunications Business Act," Pub. L. No. 86, 343 (1984), https://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Resources/laws/TBL/TBL-index.html, ch. 1 art. 1.

106. Ministry of Internal Affairs and Communications, ch.2 sec.3.

107. Takano, "NTT Privatization Study," 14.

obligations in the new telecommunications landscape, and to somewhat dilute its power as the

former incumbent monopoly. Article 3 of the NTT Law states that the new NTT Corporation

> must endeavor to contribute to the innovative advancement and development of
> telecommunications in Japan by promoting research on telecommunications technologies
> and disseminating the results of research given the fact that telecommunications will play
> a vital role in social and economic progress in future years, and thereby to promote the
> public welfare.[108]

In other words, NTT was—and still is—mandated to continue an active research and

development program and make the results available for use by potential competitors, under the

rationale that it is more important that these advances benefit the general public rather than allow

an individual corporation to gain a competitive advantage. Other provisions of the NTT Law

aimed at fostering greater competition included changing the schedule of tariffs and fees for

interconnection to networks owned by Type I carriers. Tariffs were required to be set on the basis

of actual operating costs, clearly described, and could not discriminate against carriers.[109] These

new regulatory changes allowed for the emergence of new common carriers (NCCs) which could

provide cheaper services in the areas of long-distance or cellular service than NTT can, given the

additional regulatory burdens on NTT from the NTT Law and the Business Act.[110] Some of the

NCCs that emerged in this time period include Daini Denden Inc. (DDI) and Japan Telecom,

both of which would eventually play significant roles in the development of mobile media in

Japan. While there have been further changes in its corporate structure as well as amendments to

the legislation governing telecommunications businesses in the intervening years, the

privatization of NTT and subsequent state intervention in forcing NTT to open its infrastructure

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108. Ministry of Internal Affairs and Communications, Act on Nippon Telegraph and Telephone
    Corporation, art. 3.

109. Takano, "NTT Privatization Study," 23.

110. Takano, 57.

to competing services helped form the initial telecommunications landscape that enabled the emergence of the keitai denwa.

<p align="center">The Role of Science and Technology in Japanese Public Life</p>

While the shape of the Japanese telecommunications industry certainly provides an economic, regulatory, and infrastructural base for the development of mobile media, it is also necessary to attend to the superstructural aspects of media technology use and adoption—namely, how high technology is represented in everyday life. But rather than something that springs fully formed into the public consciousness, attitudes towards technology are also the result of numerous interlocking processes and experiences that collectively shape how technology is perceived, what role it occupies in everyday life, and who it is ostensibly for. Attitudes are shaped through media representations, of course, but state policies and initiatives concerning science and technology also play a role, especially in the ways in which science and technology tie into expressions or ideals of citizenship and national identity.

As discussed previously, the experience of science and technology is strongly connected to concepts of the appearance of 'modernity', at least from a Western perspective, and the Japanese experience is no different. The history of borrowing and importing foreign technologies, usually with a military imperative, had been an important aspect of government policy since the 19 century, where a strong, outward facing military was considered critical to national security.[111] During the Meiji Restoration of the late 19 century when Japan undertook a rapid 'Western-style' modernization, the slogan "rich nation, strong army" came into vogue, and science and technology were largely seen as means to a military end. This time period saw the construction of factories for the purposes of creating weapons and other wartime material, and

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111. Morris Low, Shigeru Nakayama, and Hitoshi Yoshioka, *Science, Technology and Society in Contemporary Japan* (Cambridge: Cambridge University Press, 1999), 1.

foreign engineers were hired to supervise the operations of the factories. Technology transfers often played roles in these agreements, echoing Takeuchi's previous comments about the practice of importing developed technologies without much understanding of the "spirit" in which they were developed.[112]

Low writes that "the form and content of science and technology are governed by class relations and power hierarchies in society, and…projects which are promoted by the government tend to serve the interests of the dominant groups in society," which illustrates the significant difference between the state approaches towards science and technology before World War II (military growth and modernization, national material self-sufficiency through colonial expansion) and after (economic recovery following the Occupation).[113] The Occupation government placed significant restrictions on scientific research to ensure that there were no continuing projects with military applications; certain fields such as nuclear or aeronautical engineering were forbidden entirely.[114] University departments which specialized in these fields were able to pivot to related fields with more explicitly civilian applications such as applied physics or automotive and railway engineering, which forecast the success of Japanese industries in these fields later in the 20 century.[115]

Scientific research in the post-war era was characterized by the distinction between basic research (fundamental research being conducted in academic or state-funded labs, with results published in scientific journals) and applied research (industrial applications and commercial products building off of basic research in private or corporate labs).[116] But the dominant interests

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112. Low, Nakayama, and Yoshioka, 2.

113. Low, Nakayama, and Yoshioka, 3.

114. Nakayama, *Science, Technology and Society in Postwar Japan*, 89.

115. Nakayama, 90.

116. Low, Nakayama, and Yoshioka, *Science, Technology and Society in Contemporary Japan*, 5.

in society mentioned by Low above were more oriented towards economic growth, and as a

result trends favored the privatized, applied research. Basic research was seen as less important,

which produced a feedback loop of reduced funding for basic research in universities, leading to

greater marginalization through diminished perception of its importance, and so on.[117] Basic

research in universities faced other forms of political opposition as well. Leftist student groups in

the 1960s and '70s were strongly opposed to what was seen as capitalist encroachment on

academic freedom or to the possible eventual use of academic research in military applications.[118]

Concern about Japanese war crimes and wartime abuses of scientific knowledge, such as those of

the infamous Unit 731 of the Imperial Japanese Army which conducted chemical and biological

experiments on prisoners—mostly Chinese—in Manchukuo, also contributed to a general

reluctance towards scientific research that was connected to public or state funding.[119]

As public attitudes towards the role that science and technology would play in post-war

society were being established from a political and economic standpoint, there was also an

ongoing ideological formation that connected national identity with the economic orientation

towards high technology sectors. Shun'ya Yoshimi states that, in contrast with the later techno-

Orientalist discourses discussed earlier in this chapter, internally-driven techno-nationalistic

discourses which connect the success of Japanese industries with innate features of Japanese

identity have existed since the 1960s.[120] Yoshimi argues that "the popular image of electric

appliances is one of the most important symbols for confirming Japanese technological

117. Low, Nakayama, and Yoshioka, 19–20.

118. Nakayama, *Science, Technology and Society in Postwar Japan*, 78.

119. Morris-Suzuki, *The Technological Transformation of Japan*, 156.

120. Shunya Yoshimi, "'Made in Japan': The Cultural Politics of 'home Electrification' in Postwar Japan," *Media, Culture & Society* 21, no. 2 (March 1999): 151, https://doi.org/10.1177/016344399021002002.

capabilities and economic success in the postwar period,"[121] and over the course of the second half of the 20 century these symbols shift from being an integral part of the construction of a new post-war national identity to playing an equally important role in the representation of 'Japan' internationally. In the 1950s, home electrification and the appliances that it enabled were seen as symbols of modernity, largely through their connotations of the 'West' in which technology is somewhat synonymous with modernity. Yoshimi refers to the *sanshu no jingi* (三種の神器), or "three sacred treasures," which have traditionally referred to the Japanese imperial regalia comprised of a sacred sword, mirror, and jewel/bead, but which took on new colloquial meaning in the 1950s as the washing machine, refrigerator, and the black and white television.[122] Possession of the original "three sacred treasures" served as a means of authenticating the rule of the Emperor, and ownership of the new "three sacred treasures" of home electrification in the 1950s indicate, first, the middle-class economic status necessary to afford those appliances, but also served to authenticate the households who possessed them as "modern families."[123]

Yoshimi also notes the role that advertising played in shaping the image of these consumer technologies. In the 1950s, the use and ownership of electronic goods signified "modernity" created through an "American way of life" that was brought about by the ownership and use of modern electrical appliances. In the 1960s, discourses emerged in advertising that sought to portray Japanese products as globally competitive, with many advertisements making the claim that somehow "Japanese culture" was responsible for the production of such highly-regarded products. Yoshimi offers the example of advertisements for Matsushita televisions that claim that traditional Japanese craftsmanship is responsible for the high quality of their images

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121. Yoshimi, 152.

122. Yoshimi, 155.

123. Yoshimi, 156.

and design, even as the advertisements note the technology was initially American in origin.[124]

What is interesting about these discourses—Yoshimi refers to them as "image politics"—is that

they make claims to the global recognition for the quality and craftsmanship of Japanese

electronic goods even *before* Japan had actually earned that reputation in the 1970s and 1980s.

However, this politics of representation was so strongly established in the domestic milieu—the

construction of a national identity that includes a cultural tendency towards the production of

high-quality goods—that it easily spread in the global popular consciousness in the later part of

the 20 century as Japanese products became increasingly available worldwide, and "more and

more people became eager to explain the origin of Japanese technological ability with inherent

qualities of Japanese culture."[125] DuGay et al. also observe this phenomenon in their classic study

of the Sony Walkman, arguing that despite the popular narratives of the Walkman as the product

of "Japanese design" (complete with Orientalist references to the aesthetics of traditional

tableware and the compact size as essentially 'Japanese' properties), Sony's previously

successful transistor radios borrowed heavily from American radio designs, and its 35mm

cameras were similarly indebted to the designs of those manufactured by the German corporation

Leica.[126] The narratives of 'traditional culture' that supposedly permeate Japanese consumer

goods are just as much the result of ideologies that have worked to shape both Japanese self-

identity and Japan's global representation in the post-war decades.

Attitudes towards science and technology in everyday life are the result of numerous

factors: historical processes, state policies, industry objectives, and even advertising culture.

Despite the simplified portrayal of Japanese industry as simply borrowing foreign technologies

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124. Yoshimi, 162.

125. Yoshimi, 163.

126. Du Gay et al., *Doing Cultural Studies*, 64–66.

with no regard for the "spirit" of their development, as Dewey claimed, the shaping of both Japanese attitudes towards technology and the assemblage known as 'Japanese technology' are hardly the result of simple, linear processes of appropriation. The presence of discourses such as 'Japanese technology', 'Japanese design', or 'traditional Japanese culture' are all the result of social processes that in turn shape the meaning of artifacts produced within these intersecting strata.

Localizations and Adaptations in Information and Communications Technologies

Since the 'opening' of Japan to trade with the 'Western' world in the mid-1800s, Japanese industry has been accused of simply importing and then imitating many new technologies. Historians of science and technology in that era can likely offer a much more nuanced view of those particular claims, but we only need to look at the development of information and communications technologies in Japan in the second half of the 20 century as an example that the adoption of foreign technologies is often marked by much more active processes of adaptation and localization, rather than simply passive reception of technologies from the 'advanced' West.

With most of the research and development of computing in the post-war era taking place in American corporate laboratories or in initiatives funded by the military, the English language was of course the *de facto* language used in development and in interfaces, with the Roman alphabet-based QWERTY keyboard a primary means of input. For English-speaking users, using the QWERTY keyboard as a means of interfacing with computers was hardly a new development, as that same keyboard was previously present on manual and then electric typewriters, so any difficulty in adapting to this input method would likely come from the novelty of interacting with the computer itself. For users whose native alphabets use entirely different letters, or who use writing systems with entirely different scripts, the problem is much

greater, in that the representation of text within early computers was incapable of displaying characters beyond those used in [American] English, in an example of what Mark McLelland calls the "hidden and persistent biases in early computer communication."[127] The 7-bit ASCII (American Standard Code for Information Interchange) encoding developed in the 1960s was a 7-bit code, which could store 128 characters in total. The first 32 character spaces featured non-printing control characters such as space, page up, enter, etc., and the remaining 96 spaces were used by letters (upper and lowercase), numbers 0–9, and basic English punctuation marks. ASCII was later extended to 8 bits which offered an additional 128 characters that supported many additional accented letters, such as occur in languages such as Spanish or German.[128] This left computers from the 1960s onward entirely incapable of displaying text in Chinese, Japanese, or Korean (CJK), with their thousands of individual logograms. The Japanese language itself is comprised of two syllabaries, hiragana and katakana, each with 47 separate characters, as well as kanji, a Chinese-derived script with over 2000 characters designated for everyday use.

This initial incompatibility had a number of practical and ideological effects. The language barrier embedded into computing devices was difficult enough, but most Japanese users had not previously had the experience of using a keyboard even on a typewriter, owing again to the thousands of individual logograms in daily written use in the Japanese language. The electronic word processor (*wāpuro*), a device that falls somewhere between a typewriter and a full computer running word processing software, was the first device that experimented with a means of inputting Japanese text using a QWERTY keyboard. Users were required to type the

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127. Mark McLelland, "Early Challenges to Multilingualism on the Internet: The Case of Han Character-Based Scripts," *Internet Histories* 1, no. 1–2 (January 2, 2017): 120, https://doi.org/10.1080/24701475.2017.1280889.

128. McLelland, 120.

phonetic sounds of the characters using Roman letters, then select the correct character[129] with a

dedicated conversion key.[130] Shigeru Nakayama describes the electronic word processor as a

"double revolution;" whereas many users in America were somewhat familiar with the typewriter

before the introduction to the computer and had become adapted to moving from printed writing

to typed writing before experiencing the "revolution" of electronic communication, Japanese

users would have experienced a much more jarring leap straight from printed writing and

communication to electronic means, without the intermediate step of typewritten

communication.[131] While wāpuro conversion enabled the use of QWERTY keyboards to input

Japanese text—albeit in a relatively cumbersome manner—this still required some amount of

English learning to identify the romanized equivalents of Japanese sounds. Nakayama points out

that training on the QWERTY keyboard often doesn't happen until high school, which introduces

a delay in familiarization with computing devices compared to users in countries with writing

systems based on the Roman alphabet.[132]

This linguistic hurdle to the adoption of computing technologies made local uptake of

largely imported information and computing technologies difficult enough, but it also posed a

significant barrier for the international communication practices enabled by the Internet.

Nakayama describes the QWERTY keyboard as a "bottleneck for Japanese seeking to access the

Internet,"[133], while Toru Nishigaki asks in 1998 if "ordinary Japanese can become active

129. There are a significant number of homophones in the Japanese language—for example, hiragana む, katakana ム, and kanji 無 and 夢 can all be pronounced "mu"—requiring the user to cycle through a number of options to select the appropriate character for the intended word or phrase.

130. Mark McLelland, "Early Computer Networks in Japan, 1984-1994," in *The Routledge Companion to Global Internet Histories*, ed. Gerard Goggin and Mark McLelland (New York, NY: Routledge, 2017), 173.

131. Shigeru Nakayama, "From PC to Mobile Internet—Overcoming the Digital Divide in Japan," *Asian Journal of Social Science* 30, no. 2 (2002): 240.

132. Nakayama, 240.

133. Nakayama, 241.

participants" in the "global electronic community" promised by the Internet, given the significant

barriers to access and technical literacy.[134] Nishigaki in particular is concerned with the political

implications of a supposedly 'global' network being dominated by a single language. It is not

simply that the Internet requires some degree of English fluency to participate in global

communication, but on a more fundamental level "information technologies cannot be discussed

independently from the power that dictates the mode of communication. Compiling a dictionary,

for instance, is simultaneously an exercise of power as well as a cultural action, in that it sets the

rules on the standard use of each word or phrase."[135] Nishigaki writes than this dynamic is not

entirely new or unique to information technologies, as similar dynamics have played out in the

introduction of previous mass media technologies such as radio and television.

Even though the introduction of information and computing technologies in Japan came

through imported American technologies and standards, this does not mean that the Japanese

experience of ICTs has been wholly oriented around the passive use of received technologies.

The development of Japanese input methods for QWERTY keyboards is one example of the

active processes of adaptation at work; a more significant one is the Fifth-Generation Computer

Systems Project. Launched in 1982, the project was managed by the Institute for New

Generation Computer Technology, a research group under the Ministry of International Trade

and Industry (MITI), and was comprised of researchers and administrators from top Japanese

universities such as the University of Tokyo and Keio University, as well as from private

research laboratories at companies like Fujitsu, Hitachi, NEC, Matsushita, Mitsubishi, Toshiba,

Oki, Sharp, and NTT.[136] One of the primary aims of the FGCSP was to develop natural language

interfaces for information processing, but it is also notable for its goal of using Japanese as a

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134. Toru Nishigaki, "A Global Electronic Community: From the Fifth-Generation Computer to the
       Internet," *Social Science Japan Journal* 1, no. 2 (1998): 218.

135. Nishigaki, 227.

native interface language—in other words, to develop a localized interface outside of the

Anglophone paradigm that dominated the computing world up to that point.[137] But even within

these attempts at developing a natively-Japanese computer interface, the primacy of English as

the language of computing is difficult to escape. Natural language interfaces in AI research draw

from Noam Chomsky's theory of a "universal grammar" that underlies all human languages, but

attempts at constructing a "universal language" for AI interfaces still build off of English rules in

establishing their so-called 'universal' concepts.[138] According to Nishigaki, the FGCSP was a

failure in that it did not achieve all of its stated goals of producing an intelligent, natural

language interface for information processing (though many of the results produced by the

project have since gone on to have applications in the development of parallel computing), but it

remains notable as a project conducted at such a massive level of private and public partnership

with the intent to develop a computing platform that used Japanese as a primary input and

programming interface, rather than make attempts to adapt Japanese to more limited English-

language systems.

Perhaps another sign of the Anglocentrism that permeates computing technology is the

assumption that the QWERTY keyboard—or a keyboard-like peripheral—is the most necessary

or efficient means of interfacing with computers in the first place. Nakayama laments that

Japanese industry has been "strong in developing the non-keyboard area of the IT revolution:

namely audio-visual media, cartoons, video cassette recorders, fax machines, console games, etc.

[, but] they have been weak in the development of software that relies on the use of

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136. Hiroyuki Odagiri, Yoshiaki Nakamura, and Minoru Shibuya, "Research Consortia as a Vehicle for Basic Research: The Case of a Fifth Generation Computer Project in Japan," *Research Policy* 26, no. 2 (May 1, 1997): 191–207, https://doi.org/10.1016/S0048-7333(97)00008-5.

137. Nishigaki, "A Global Electronic Community," 220.

138. Nishigaki, 224.

keyboards."[139] The mobile phone fits among the other examples of "the non-keyboard area of the

IT revolution" that are the strengths of Japanese manufacturing, but it also offers a new way of

thinking about interfacing with ICTs beyond the use of the standard keyboard. In the early 1990s,

the *pokeberu* ("pocket bell," or pager) became popular in youth culture, and allowed users to

send numeric messages from landline telephones to pager users, where the numerals could either

be converted into Japanese characters to spell out short messages (fig. 2.1), or used on their own

as an early form of online slang.[140],[141]

Figure 2.1: Pager with numerals-to-Japanese conversion chart.
Source unknown.

The first keitai denwa service was launched in 1992 by NTT DoCoMo, using the

Personal Digital Cellular (PDC) standard as a successor to its less-popular car phone service. The

competing PHS (Personal Handyphone System) standard was introduced in 1995.[142] Despite the

significantly reduced 10-key keypad present in most mobile phones, they became popular for

short message and email communication, with Nakayama remarking that young people used the

phones more for sending and receiving emails than for traditional voice calling. Nakayama

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139. Nakayama, "From PC to Mobile Internet—Overcoming the Digital Divide in Japan," 240.

140. Nakayama, 240.

141. Nakayama uses the example of the number 39; the numbers 3 and 9 are pronounced *san* and *kyū* respectively and together make *sankyū*, or the Japanese pronunciation of English "thank you." Another example is the number 3476, with the individual numbers pronounced *san yon nana roku* and read as *sayonara* (obviously with a little adaptation).

142. Nakayama, "From PC to Mobile Internet—Overcoming the Digital Divide in Japan," 241–2.

recounts a story of Bill Gates visiting Japan (it is unclear whether this was witnessed by Nakayama himself; no sources are provided) and being asked his opinion on the future of mobile phones. Gates was dismissive of the small screen size and said that "the future of the Internet rested with the PC."[143] As with the keyboard, the assumption is that a traditional personal computer is necessary for optimal use of the Internet, which results in technologies that don't fit within that computing paradigm to be overlooked, and thus excluded entirely from histories of the Internet. NTT DoCoMo's i-mode service was developed with the pager and mobile phone-savvy youth subcultures in mind, and attempted to adapt the experience of the Internet to the mobile phone and the users that were already familiar with it.[144] In this way, the Internet became popularized in Japan not through the imported, 'Western' approach to the Internet through the keyboard-driven use of the PC, but through an arguably more limited or compromised experience—in terms of input method, screen size, and data throughput—that was nonetheless significantly more popular with users who had developed their own localized practices and subcultures around the technology.

<div align="center">Conclusion</div>

This chapter provided a broad overview of the techno-social conditions in Japan in the second half of the 20 century that produced the conditions of possibility that allowed the keitai denwa to emerge with its particular characteristics. The telecommunications industry in Japan developed after the war as a state-owned monopoly with the goal of providing universal telephone service to the nation, and was then privatized and forced to open its infrastructure to competition once that initial goal had been met and technological advances made the rationale for monopoly ownership less compelling. Post-war attitudes towards the role of science and

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143. Nakayama, 243.

144. Nakayama, 243.

technology in everyday life placed little emphasis on the basic research conducted by universities and were wary of the role that academic science had played in the militarization of Japan in the first half of the 20 century. At the same time, state policy under the Ministry of International Trade and Industry emphasized electronic and advanced industrial manufacturing as industries in which Japan could be globally competitive, which placed greater emphasis on the applied research being conducted in corporate research laboratories. On a more domestic level, home appliances began to be seen as signifiers of a Western-style modernity, producing cultural associations between domestic technologies and 'modern living'.

Japan's economic growth in the industrial and consumer goods sectors gave rise to complicated global networks of discourse that produced an image of 'Japan'. The Japan of advanced manufacturing and electronics industries was a vengeful titan intent on toppling American dominance in a number of industries, while the Japan of high technology consumer goods transformed "Made in Japan" into a global signifier of quality (and later, conspicuous consumer cool). All of these discourses sought their origins in some essential aspect of Japanese culture which naturally predisposed the nation to success in these areas; produced domestically and repeated internationally, these discourses were both techno-nationalistic and techno-Orientalist at the same time.

Much of Japan's history with computing revolved around attempts at adapting English-language interfaces and hardware to the Japanese language, requiring significant compromises or modifications, especially for those users who were not familiar with English. The Fifth-Generation Computer Systems Project represented an attempt at developing high-performance computing interfaces that weren't limited by the languages used by either the developers or the end users; the project was ultimately unsuccessful in its goals, but does serve to illustrate how

deeply the English language—even in its assumptions of the universality of linguistic constructs —has become embedded in the field of computing. The introduction of the keitai denwa and its uptake as a fashion accessory for youth culture begins to challenge the dominant American assumption that the personal computing platform is inseparable from the experience of the Internet.

To reiterate a point from the beginning of the chapter, I don't wish to argue in any way that these conditions were exclusively responsible for the emergence of the keitai, that they are exclusively Japanese, or that I have come anywhere close to exhaustively discussing them. However, these conditions all contributed to the creation of a structural framework that made it *possible* for the keitai denwa to emerge. These conditions also had a significant effect on how this technological artifact was presented (by carriers and manufacturers) and received (by consumers and the technology industry), which will be illustrated in greater detail in Chapter 4.

The following chapter will begin by discussing the intentional use of the term *keitai* over "mobile phone" for this dissertation, and the term's function as a discursive formation that delineates the keitai from other mobile communications media. The chapter will also provide a methodological discussion on the selection and analysis of documents for historical research, as well as an introduction of the actual sources used. Chapter 4 will proceed with an analysis of print media from 1997–2007 to show the changing representation of the keitai through this period, and the discourses that emerged around the meaning of mobile media in this time.

Chapter 3.

Formations: Defining "Keitai" and the Analysis of Documents

<u>Introduction</u>

Lisa Gitelman points out the inherent "slipperiness" of media as historical subjects because "media…of any generation tend to become naturalized; they start to seem inevitable and then transparent, or transparent and then inevitable."[145] In other words, the novelty of emergent media forms, and the effects, ruptures, and negotiations facilitated by their emergence, is often obscured by the weight of history that quickly makes the strange, familiar. To study historical media today is in some sense to study a settled question, to attend not to the historical processes which produced that media form or the relations it initially bore to contemporary media but to a sort of immaculately-conceived object which has always-already existed in the particular form that is chosen for study. This is not true exclusively for media being studied in a historical context, either. Even as we live through changes that media undergo, we tend to acclimatize ourselves to ones that become familiar through necessity (workplace information and communications technologies) or social convention (technologies of social mediation) and despite an initial period of temporal novelty, they eventually "[disappear] from our sense of what is remarkable,"[146] as Richard Ling writes about the mobile phone's growing ubiquity in the late 2000s and early 2010s.

The mobile phone—particularly the smartphone—enjoys this status of naturalized invisibility today; Adam Greenfield writes that "we use it so often that we don't see it clearly; it appeared in our lives so suddenly and totally that the scale and force of the changes it has

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145. Gitelman, "Media, Materiality, and the Measure of the Digital, Or, The Case of Sheet Music and the Problem of Piano Rolls," 199.

146. Ling, *Taken for Grantedness*, vii.

occasioned have largely receded from conscious awareness."[147] Yet this naturalized invisibility, this "taken-for-grantedness" is the present result of processes of negotiation that have been in progress for over two decades at this point. The following chapter draws from contemporary representations of the keitai denwa in this period (1997–2007) to show the changing status of the keitai as it transformed from a business appliance to an everyday artifact of mediation/communication which is capable of disappearing from our conscious awareness or being taken for granted. Parallel to this popularization is also the slow convergence of various mobile media technologies into the feature phone as it assumes more and more features that previously belonged to other mobile media technologies, to the point that the feature phone of 2007 has largely supplanted many other individual devices.

This is not, of course, to suggest that these other forms of mobile media—handheld computers, personal digital assistants, even mobile phones that utilized the PHS standard— disappeared entirely at some discrete point in time, but rather that they were appearing with less frequency and with less momentum behind them by the end of this decade. At the same time, the specific affordances of the keitai denwa begin to be seen as necessary and important aspects of the concept of 'mobile media' as a whole, with the result that other information and communications technologies that are still 'portable' are no longer considered 'mobile'. For example, the laptop is no longer considered 'mobile' media, in contrast to the period of indeterminacy in the 1980s when designations like 'mobile', 'portable', and other terms were used fairly interchangeably to describe a number of different formal characteristics.[148]

These next two chapters will show that the form and meaning of mobile media, as represented by the keitai denwa, was hardly a settled affair in the years leading up to the

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147. Greenfield, "Smartphone: The Networking of the Self," 19.

148. Alper, "Portables, Luggables, and Transportables."

emergence of the modern smartphone. The period preceding that time (and even past, to a lesser extent) was marked by a significant amount of negotiation of what mobile media could do and for whom, and this is reflected in the design of mobile handsets, the services offered, and most importantly, how mobile media technologies were represented to the public. In this chapter, I first define the term *keitai denwa* as a discursive formation that represents not only a specific technological artifact—as the term has been used in the preceding two chapters—but as a set of statements referring to a combination of a particular category of technical device/artifact (and its attendant infrastructural underpinnings), cultural imaginaries, and user practices and expectations. Next, I will present a theoretical and methodological justification for the documentary sources used in this analysis, including a discussion of the limitations that were encountered during the research and writing of this dissertation. Finally, in Chapter 4 I will discuss the selected contemporary media in terms of how it contributes to the discursive formation of *keitai denwa* and the negotiation of the concept of 'mobile media' in this time period.

<p style="text-align:center">Keitai as Discursive Formation</p>

Kenkyusha's New Japanese-English dictionary defines the word "keitai" (携帯) as "carrying on one's person" (in adjective form) or to "carry [bring, take] something with one; have something [on, about with] one; have something [on, about] one's person."[149] "Denwa" (電話) is simply "a telephone, a phone."[150] The full phrase "keitai denwa" (携帯電話) then is literally a phone that one carries on their person, brings with them, etc. This definition is similar to the use of "mobile phone" in English. In the latter part of the period covered in this dissertation, the

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149. Watanabe Toshio, Edmund R. Skrzypczak, and Paul Snowden. *Kenkyusha's New Japanese-English Dictionary*. 5th ed. (2003), s.v. "keitai."

150. Watanabe Toshio, Edmund R. Skrzypczak, and Paul Snowden. *Kenkyusha's New Japanese-English Dictionary*. 5th ed. (2003), s.v. "denwa."

phrase "keitai denwa" (and the use of kanji to write it: 携帯電話) gradually disappears from

common use in favor of the shorter "keitai," which in the written Japanese undergoes a

transformation from the kanji logograph 携帯 to the katakana syllabary, where it is represented as

ケータイ with the pronunciation unchanged and implying a more casual or colloquial usage.

While less common in American English, this is analogous to the shortening of 'mobile phone' to

just 'mobile' in British English.[151]

In this dissertation, I have intentionally chosen the consistent use of the terms "keitai

denwa"/"keitai" to describe this object of study rather than rely on English translations of the

phrase, despite the fact that—as illustrated above—there are no problems in directly translating

the term into familiar English. Instead, my use of the transliterated "keitai" is partially inspired

by Misa Matsuda's argument for the use of "keitai" over English equivalents in the sociological

study of mobile phones in Japan:

> We chose to use this colloquial term to make clear our position on cellular phones and
> PHS: they are not "new technologies/media introduced from the outside" but rather
> "technologies/media that come to be embedded in society." To study keitai rather than the
> cellular phone, mobile phone, or mobile communications media means examining these
> devices as they are embedded within a particular society we call Japan, and by extension
> to examine Japan as a society with keitai.[152]

Matsuda notes, as I have in previous chapters, that the usage of this particular term does not and

should not imply that the social phenomena which the keitai is embedded in are at all unique to

Japan. However, to study "the mobile phone in Japan" is to study both "the mobile phone" and

"the mobile phone as a social artifact used in Japan." This was much of the focus of the previous

chapter, which provided notes towards an understanding of the social conditions, with regards to

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151. *OED Online*, s.v. "mobile," accessed May 23rd, 2023, https://www.oed.com/view/Entry/120487?
    result=4&rskey=8CsIsn&

152. Misa Matsuda, "Discourses of Keitai in Japan," in *Personal, Portable, Pedestrian: Mobile Phones in
    Japanese Life,* ed. Mizuko Itō, Misa Matsuda, and Daisuke Okabe (Cambridge, MA: MIT Press,
    2006), 20.

communications technologies, into which the mobile phone emerged *in Japan.* In connection

with Matsuda's argument, I also intentionally use "keitai" in following Chapter 2's

methodological framework of "Asia as method"—studying the keitai denwa as an artifact

produced, used, and made sense of in a Japanese context, rather than situating it as either a

foreign-produced artifact which was adopted by Japanese users, or as some sort of an affect-less

'global' phenomenon that may be studied in Japan the same as anywhere else.[153]

"Words and Things"

In *The Archaeology of Knowledge,* Michel Foucault offers several hypotheses concerning

the relationship between statements and the objects they purport to define. One hypothesis that

Foucault explores and then subsequently rejects is that "statements different in form, and

dispersed in time, form a group if they refer to one and the same object."[154] In Foucault's

example, statements within the field of psychopathology are used to define the object called

"madness." In a similar way, it would be possible to collect statements from the period of this

dissertation that are used to define the object of the "keitai denwa"—statements dealing with the

'phone' that is "mobile/portable/carried on one's person" as defined above. However, Foucault

rejects this preliminary hypothesis because it implies defining an object by somehow looking

into the object itself (defining "madness" by "interrogating the being of madness itself,"[155]) and

assuming all statements about "madness" are referring to the same thing and not, as Foucault

finds, different objects constituted within the fields of medicine, the law, policing, etc.

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153. The implication here, that all media and communication technologies are used, conceptualized, and
    carry the same meanings regardless of where they are found, often obscures and normalizes what are
    frequently American origins of cultural artifacts or technologies (see for example Ch. 2's discussion
    of Japanese adaptations of the personal computer, which assumed English as the primary user
    interface language), and the dangers of universalizing a technology so clearly rooted in an
    Anglophone paradigm.

154. Michel Foucault, *The Archaeology of Knowledge: And the Discourse on Language* (New York, NY:
    Vintage, 1982), 35.

155. Foucault, 35.

As an alternative hypothesis, Foucault offers that perhaps the unity of discourses on an object should not be dependent on the existence of that object itself, but instead on the rules that define and shape the object, and that separate the object from others like it, and which allow for the object to emerge separately from other objects in particular contexts.[156] This attention to the rules that govern the emergence of an object, define how it is separated and dispersed from other objects (and the divisions within its own definition) are eventually articulated as a "discursive formation:"

> Whenever one can describe, between a number of statements, such a system of dispersion, whenever, between objects, types of statement, concepts, or thematic choices, one can define a regularity (an order, correlations, positions and functionings, transformations), we will say, for the sake of convenience, that we are dealing with a *discursive formation*…The conditions to which the elements of this division (objects, mode of statement, concepts, thematic choices) are subjected we shall call the *rules of formation*. The rules of formation are conditions of existence (but also of coexistence, maintenance, modification, and disappearance) in a given discursive division. [157]

This dissertation treats the keitai denwa and, to a lesser extent, 'mobile media' as discursive formations—concepts and objects defined in some way by statements that differentiate them from other concepts and objects. Chapter 1 discussed the construction of the concept of 'mobile media' and how certain mobile media technologies became excluded from that concept despite their inherent properties of mobility. This chapter further discusses the discursive formation of the keitai denwa and the statements that function as rules of formation that describe it, but also the ways in which the object of these statements has shifted, changed, and narrowed over the dissertation's time period.

PHS and the Keitai Denwa

This chapter has already identified one of these discursive divisions in Matsuda's argument above for using "keitai denwa" instead of 'mobile phone', which sets the Japanese

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156. Foucault, 36.

157. Foucault, 41–2.

experience of the mobile phone aside from those which may occur in the rest of the world (no

matter how similar these particular experiences may be on their own.) Another division, which

will be used in this chapter, is that between mobile phones using the PHS (Personal Handy-

phone System) wireless standard, and the keitai denwa as discrete technologies. While Matsuda

makes no distinction between the two and explicitly states that her use of the term "keitai"

encompasses both PHS and PDC (unless there is a technical reason to refer to PHS separately),[158]

this dissertation intentionally considers PHS-based phones as a separate technological artifact

from the keitai denwa. There are a number of historical and methodological reasons for this.

While PHS and keitai handsets looked and functioned in similar ways, the underlying

infrastructures and functionalities were radically different.

PHS service started in Japan in 1995 and had more than 7 million subscribers by 1997.[159]

The PHS system was essentially an extension of existing ISDN technologies, which allowed

PHS phones to function in the home as a cordless telephone, in the context of private branch

exchange (PBX) extensions within a business setting, and in 'walkie-talkie' mode with direct

connection between two specific handsets.[160]. PHS handsets could also function as data terminals

with a potential 32 kbps (kilobits per second) throughput (64 kbps with later revisions to

standards in 1997).[161] As will be shown later in the next chapter in the analysis of some of the

magazine advertisements in the late 1990s, the use of PHS handsets as wireless modems for

laptop computers was a feature that was strongly emphasized. Since it essentially made use of

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158. Matsuda, "Discourses of Keitai in Japan," 20–1.

159. *Personal Handyphone System Guidebook*, 4th ed. (Tokyo, Japan: PHS MoU Group, 2008), 8, https://www.xgpforum.com/new_XGP/doc/White%20Paper/PHSGuidebook_4th.pdf.

160. *Personal Handyphone System Guidebook*, 13–4.

161. *Personal Handyphone System Guidebook*, 30.

existing phone networks, costs of PHS service were also significantly lower than competing

keitai services.[162]

Despite its head start on PDC-based keitai data services and lower cost, PHS had a

number of detrimental aspects that served to shepherd users to the competing keitai standard

instead. Because of the shorter range of PHS cell stations, coverage could be inconsistent in

comparison to the longer broadcast range of cellular phone antennas. The PHS MoU Group

admits that an early "lack of methodology about area construction" in initial development of

PHS infrastructure contributed to the perception of poor or inconsistent service quality.[163] In

addition, the early handoff between base stations when a user was traveling could not function at

high speeds, meaning that PHS phones were generally unusable in cars or on trains.

From a technical standpoint, the PHS represents a very different mobile media

technology than the keitai, but it also clearly operates as a separate discursive formation, despite

Matsuda's conflation of the two. This separation also seems to be borne out in representations of

the PHS in Japanese media. In the magazines analyzed in Chapter 4, advertisements for PHS

handsets and services appear frequently in 1997–1999, but become less common in the following

years as the advertising focus shifts mainly to the PDC/3G services provided by DoCoMo,

KDD/KDDI, J-Phone, etc. The PHS standard continued for a surprisingly long time; despite the

success of its i-mode service, NTT DoCoMo actually offered PHS services through early 2008,[164]

and the remaining PHS carrier, Softbank Mobile (which provided PHS service under its Y!

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162. Kenji Kohiyama, "A Decade in the Development of Mobile Communications in Japan (1993-2002)," in *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, ed. Mizuko Itō, Misa Matsuda, and Daisuke Okabe (Cambridge, MA: MIT Press, 2006), 65.

163. *Personal Handyphone System Guidebook*, 8.

164. "DoCoMo to Exit PHS Following Drop in Subscribers," Press Release, CommsUpdate, January 7, 2008, https://www.commsupdate.com/articles/2008/01/07/docomo-to-exit-phs-following-drop-in-subscribers/.

Mobile brand), ended general services in mid-2020.[165]. In an illustrated 25-year history of the

PHS standard following the final end of services in January 2021, Y!Mobile characterized the

competition between PHS and keitai as similar to the *sengoku jidai* (戦国時代), or Japan's

"warring states era/period" of the 15–17 centuries that is historically characterized by frequent

civil wars (fig. 3.1).[166]

Figure 3.1: Yahoo! Mobile, "PHS
vs. keitai, plunging into civil war
[of the warring states period]!"
2021, accessed August 20, 2023,
https://www.ymobile.jp/sp/goodbye
phs.

From a standpoint of media genealogy, PHS poses a fascinating question of *what if*.

Similar to the format wars between the VHS and Betamax standards, or the LaserDisc and DVD

optical media, separating PHS from the keitai denwa offers a potential inquiry into an alternative

media history. Given the PHS's early shortcomings, which were corrected to some extent later in

its lifespan, how might the meaning of mobile media—at least, in the sense that the term still

points to the mobile phone—be different today? Of course, any answer to that question would be

purely speculative, but simply exploring the aspects of taken-for-granted everyday life that

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165. "SoftBank Announces PHS Switch-off in July 2020," Press Release, CommsUpdate, April 20, 2018,
https://www.commsupdate.com/articles/2018/04/20/softbank-announces-phs-switch-off-in-july-2020/.

166. "PHS 25-nen shi (PHS25 年史)," Y!mobile, accessed April 11, 2023,
https://www.ymobile.jp/sp/goodbyephs.

would change significantly if the technological infrastructure of PHS had emerged as the popular standard would be a fruitful avenue for future media genealogy research. As it stands, the PHS is one of those parallel emergences that are generally forgotten or unremembered in linear histories of media technologies, mainly because it was much easier to represent a clear, unbroken lineage between the cellular infrastructures supporting the keitai denwa and the smartphones of today. It is also through these distinctions and differences that the PHS comprises a separate discursive formation from the keitai denwa itself.

<p align="center">Analysis of Documents</p>

This chapter takes as its main objects of analysis a variety of documents—mainly magazines, but also some newspapers and promotional flyers or catalogs. These all fall under the larger descriptive category of "documentary sources" as described by John Scott, who defines a document as "in its most general sense…a written text."[167] This definition is not limited to specific media forms or formats (or type of publication, whether they are digital or analog), and Scott perhaps inadvertently stands McLuhan on his head in arguing that documents "may be regarded as physically embodied texts, where the containment of the text is the primary purpose of the physical medium." In addition to providing a working definition of "documents," Scott also provides four important criteria for the evaluation of documents: *authenticity*, *credibility*, *representativeness*, and *meaning*.[168] *Authenticity* is perhaps the most straightforward of these, asking whether sources are what they claim to be and have not been fabricated or misrepresented. *Credibility* asks whether a source, having been determined to be authentic, is accurate in the information it conveys and does not contain either unintentional errors or knowing distortions (as in the case of parody, for example). *Representativeness* asks to what

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167. John Scott, *A Matter of Record: Documentary Sources in Social Research* (Cambridge, UK: Polity Press, 1990), 12.

168. Scott, 6.

extent a particular source can claim to represent common trends or practices—a general purpose

magazine or daily newspaper, for example, will likely be a more accurate reflection of everyday

practices among the general public than a specialized magazine or newsletter aimed at a group of

hobbyists. And finally, *meaning* is the determination of to what extent a source can be accurately

interpreted—is the scholar able to understand its general context, the ideas or practices that it

illustrates or points to in the way it is designed?[169]

The sources used in the following chapter are various issues from the magazines *Shūkan*

Asahi, Shūkan ASCII, Dime, and *Nikkei Trendy*; the 'mooks' *i-mode Best* and *i-mode Jōhō Site*

1200; and the newspaper *Yomiuri Shinbun*. Specifically, the chapter will look predominately at

advertising for keitai denwa carriers, services, and devices within these sources, which will be

explained in more detail below.

The *Shūkan Asahi* was a weekly news magazine published by Asahi Shinbun

Publications, the parent company of the *Asahi Shinbun*, one of Japan's five major newspapers.

Shūkan Asahi began publication in 1922 and announced in January of 2023 that it would be

ending its print publication in may of that year, with the company focusing more on digital

publications.[170] The magazine covered a variety of national topics, including politics, cultural

criticism, and even featured short fiction and non-fiction, in many ways similar to the *New*

Yorker. The entire print run of the *Shūkan Asahi* was available for 1997 to 2007, and issues from

February, March, November, and December were selected for the chapter.

Shūkan ASCII is a weekly magazine published by Kadokawa ASCII Research

Laboratories, Inc. that covers general topics related to consumer computing and other

information technologies. It has been in publication since 1997, when it evolved from a previous

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169. Scott, 6–8.

170. "Japanese Weekly News Magazine with 100-Year History to Shut Down," *The Japan Times*, January 19, 2023, https://www.japantimes.co.jp/news/2023/01/19/national/shukan-asahi-ends/.

publication called *EYE・COM*, which also covered consumer technologies from the late 1970s such as Japanese personal computers, game systems, and hardware word processors.[171] Two issues of *Shūkan ASCII* were available for analysis: July 12, 2005 and March 20, 2007.

Dime is a monthly magazine targeted at businesspeople that covers general topics related to technology and business innovations, etc.[172] It is published by Shōgakukan, a publishing house founded in 1922 that publishes a wide range of print material including magazines, children's books, manga, fiction and nonfiction, etc.[173] The June 19, 1997 issue of *Dime* was analyzed for Chapter 4.

Nikkei Trendy is a monthly magazine described on its cover as an "trendy informational magazine that stimulates personal lifestyles" (*koujin seikatsu wo shigekisuru ryūkō jōhōshi*, 個人生活を刺激する流行情報誌), and as the description suggests, covers contemporary popular trends with a focus on consumer goods and electronics. It was published by Nikkei Home Publishing Company, which has since merged with Nikkei Business Publications (Nikkei BP), both subsidiaries under the Nihon Keizai Shinbunsha, a major publisher of print media including the *Nihon Keizai Shinbun* ("Japan Economic Newspaper").[174] The March 2004 issue of *Nikkei Trendy* was reviewed for the chapter.

I-mode Best and *i-mode Jōhō Site 1200* are examples of *mooks*, a common print publication in Japan that "physically resembles a magazine in content and format, but are

171. "EYE・COM soukangou = Shukan ASCII no moto mo koukai na no da!! (EYE・COM 創刊号=週刊アスキーの元も公開なのだっ!!)," 週刊アスキー, August 30, 2017, https://weekly.ascii.jp/elem/000/001/539/1539536/.

172. "DIME | Zasshi (雑誌)," 小学館, accessed June 8, 2023, https://www.shogakukan.co.jp/magazines/series/087000.

173. "Enkaku・Rekishi | Kaishajouhou (沿革・歴史 | 会社情報)," Shōgakukan, accessed June 8, 2023, https://www.shogakukan.co.jp/company/history.

174. "Nikkei no ayumi (日経のあゆみ)," Nihon Keizai Shinbunsha, accessed June 8, 2023, http://www.nikkei.co.jp/nikkeiinfo/corporate/history/.

designed to stay on the shelves much longer than an issue of a weekly or monthly magazine,

somewhat like a book."[175] Mooks are typically focused on a single topic, but tend towards deep

coverage suitable for enthusiasts of the topic. *i-Mode Best* was published by Bestsellers Co. Ltd.,

a print publisher covering a broad range of topics including "entertainment, culture, social

science, practical guides, essays, sports, and subcultures."[176] Incorporated in 1986, Bestsellers

Co. previously published a number of magazines in the areas of men's entertainment, fashion,

general topics/information, and specialty topics (such as keitai denwa information) but currently

appears to have ceased publication of print magazines in favor of BEST TiMES, an online news

and entertainment portal. *i-mode Jōhō Site 1200* was published by SoftBank Publishing

(presently SB Creative), the publishing arm of multinational investment company SoftBank

Group.[177] SoftBank was initially established in the 1980s as a software publisher before

expanding into a wide range of technology-related magazine publishing as well as investing into

various technology ventures, including acquiring cellular providers J-Phone and Vodaphone

Japan in a series of acquisitions and mergers.[178] The present SoftBank Corp. is one of Japan's

three major mobile service providers (along with NTT DoCoMo and KDDI/au).

 The *Yomiuri Shinbun* is one of Japan's main daily newspapers and one of the largest

newspapers in the world, with a weekly circulation of over 7 million as of August 2022.[179] The

175. Juro Osawa, "Meet Japan's 'Brand Mooks': Half-Magazine, Half-Book, All Hit," *Wall Street Journal*, October 20, 2010, sec. Japan Real Time, https://blogs.wsj.com/japanrealtime/2010/10/20/meet-japans-brand-mooks-half-magazine-half-book-all-hit/.

176. "Company Overview (会社概要)," Bestsellers Co., Ltd., accessed June 8, 2023, https://www.bestsellers.co.jp/company.

177. "Corporate History," SB Creative Corp., accessed June 8, 2023, https://www.softbankcr.co.jp/en/info/history/.

178. "History," SoftBank, accessed June 8, 2023, https://www.softbank.jp/en/corp/aboutus/profile/history/.

179. "Yomiuri Shinbun 2022-23 Media Data (読売新聞 2022 ー 23 メディアデータ)" (Yomiuri Shinbun Company, August 2022), https://adv.yomiuri.co.jp/mediadata/files/mediadata2022-23.pdf.

University of Oregon Library holdings contain collected volumes of all issues from 1958 to 1996, one year before the period covered in this dissertation. Two collected volumes covering February and March 1999 were obtained through inter-library loan. This time period covers the launch of the i-mode content platform, a significant event in the history of the keitai denwa.

These sources were selected for the wide range of intended audiences that they would serve, from general audiences looking for a broad range of news coverage and who may not be specifically interested in technology news (*Yomiuri Shinbun, Shūkan Asahi*); readers with a broad interest in information and communications technologies (*Shūkan ASCII, Nikkei Trendy*); and readers looking for in-depth coverage of keitai denwa features and uses through mooks (*i-mode Best, i-mode Jōhō Site 1200*), even if those specific mooks only cover one particular content platform. The publications all fulfill Scott's criteria for authenticity and credibility, as they are all published by major, mainstream publishing companies that are generally known to provide accurate coverage of their subjects. The range of publications was selected to ensure that they were representative of the print media of this time period, as exclusively relying on, for example, technology publications could provide a different perspective on the discourses of the period than a daily newspaper for general readership.

Print Media and Cultural Formation

The chapter's approach was somewhat informed by the work of two scholars within the field of game studies, both of whom analyze the role of print media—specifically, magazines— in shaping material cultures, and both of whom draw from the work of Pinch and Bjiker in studying the trajectories of how new media become established. Writing about the emergence of video games in America in the late 1970s through late 1980s, Michael Z. Newman argues that like all new media forms, video games initially emerged into a period of "interpretive

flexibility," where the meanings of this new media were under negotiation until "a process of closure establishes a clearer identity, making some uses dominant while others become more marginal or are cast aside."[180] Newman also draws from Bolter and Grusin's concept of *remediation* (see Ch. 1) to argue that early video games called back to existing media technologies in their form and ways of functioning, which offered early users one way of making sense of the new technologies, but that print media—magazines dedicated to coverage of video games—were instrumental in the formation and representation of cultural meanings of video games, including who they were for and how they were meant to be played.

Graeme Kirkpatrick looks at the formation of 'gaming culture' in the context of computer games in the United Kingdom, and takes a similar approach and rationale to Newman. Like Newman, Kirkpatrick takes a social-constructivist approach to the formation of new media, and provides a similar argument that the early years of the computer in the UK—which included games among their many potential uses—comprised a similar period of indeterminacy where the questions of what computers could be used for, by whom, and in what ways were similarly unsettled.[181] Magazines dedicated to computers—and to computer games—not only represented potential uses (and audiences) to the general British public, but were also instrumental in developing standards of evaluation—of the quality of hardware and software in whether they fulfilled their stated purposes, and to what extent.[182]

Although from different geographical areas and addressing slightly different time periods, both of these scholars are engaged in mapping an early stage of the larger discursive formation

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180. Michael Z. Newman, *Atari Age: The Emergence of Video Games in America* (Cambridge, MA: MIT Press, 2017), 2.

181. Graeme Kirkpatrick, *The Formation of Gaming Culture: UK Gaming Magazines, 1981-1995* (Palgrave Pivot, 2015), 12.

182. Kirkpatrick, 13–4.

that has become 'video games' and 'gaming culture'. The magazines that they focus on are not only engaged in the work of settling these periods of indeterminacy of a new medium, but they also statements of dispersion, as Foucault describes, that serve to set 'video games' or 'computer games' apart from other forms of games and play, other uses of the computer, that separate their particular cultures from other cultures of computer or general technology enthusiasts.

Media Representation and Advertising

Print media are significant for Newman and Kirkpatrick—and in the context of this dissertation—because of their role in establishing the meaning of these new media. DuGay et al. write that "partly, we give things meaning by the way we *represent* them, and the principal means of representation in culture is language."[183] Here, "language" is not simply speech or text, but "*any* system of representation—photography, painting, speech, writing, imaging through technology, drawing—which allows us to use signs and symbols to represent or *re-present* whatever exists in the world in terms of a meaningful concept, image, or idea."[184] Chapter 4 focuses primarily on advertising because of the ways it communicates meaning through its representation of both signifying practices (how can/should this technology be used?) and aspirational identities in the ads themselves. Advertising's primary focus is to create demand for goods and services that eventually lead to sales (or the production of audiences/the audience commodity, in some arguments[185]), but it is also a "cultural practice because, in order to sell, it must first appeal; and in order to appeal, it must engage with the *meanings* which the product has accumulated and it must try to construct an *identification* between us—the consumers—and

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183. Du Gay et al., *Doing Cultural Studies*, 7.

184. Du Gay et al., 7.

185. Dallas Smythe, "On the Audience Commodity and Its Work," in *Media and Cultural Studies: Keywords*, ed. Meenakshi Gigi Durham and Douglas M. Kellner, 2nd ed. (Malden, MA: Blackwell Publishing, 2009), 230–55.

those meanings."[186] Advertising is the main focus of the textual materials in the chapter because, despite the distortions or exaggerations frequently used as rhetorical devices in the construction of advertising images, it also creates suggestions as to *how* we should be using the keitai denwa, and the lifestyle we should clearly aspire to in order to become "the 'sort of person who buys and uses this kind of thing'."[187]

Limitations

The following chapter was meant to have a very different form when the dissertation was initially proposed prior to the COVID-19 pandemic. I had intended to secure research funding through the Fulbright U.S. Scholar Program or a Japan Foundation Japanese Studies Fellowship to enable me to travel to Japan to access a wide variety of documents in institutional archives I was familiar with, such as the National Diet Library and the Ōya Soichi Bunko, a private library dedicated to popular culture magazines. I intended to work with faculty in the University of Tokyo's Graduate School of Interdisciplinary Information Studies, where I previously earned my master's degree and where I would have access to the holdings of the University of Tokyo general library as well as the help of faculty who could potentially point me to other archives or repositories which could contribute to my research. The idea was to gain access to as wide a range of magazines, newspapers, and other publications addressing or connected to the keitai denwa in my chosen time period so as to present as broad a view as possible of the discourses of "keitai" as they existed.

The COVID-19 pandemic quickly made this plan infeasible, first on account of general travel prohibitions (and specifically, the Japanese government's strict control of foreign citizens entering the country in the first two years of the pandemic) and then due to family

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186. Du Gay et al., *Doing Cultural Studies*, 20.

187. Du Gay et al., 21.

considerations. I had to attempt to gather whatever materials I was able to, through the methods I

had at hand: local library holdings, inter-library loans, and personal acquisitions of materials. In

many cases I was aware of the existence of potentially relevant periodicals or other publications

but did not know exactly what the content was or where the keitai denwa may be featured in a

particular issue; given the cost and delivery time of inter-library loan requests (as well as the

uncertainty of whether a particular request would be fulfilled), it was necessary to be strategic in

requesting only publications where I had a good chance of finding relevant information.

I was ultimately only able to obtain two collected volumes of the *Yomiuri Shinbun* which

compiled all of the issues of the newspaper published in February and March 1999; a number of

other requests for additional volumes were canceled for lack of availability at partner institutions.

I used a proxy shipping service to purchase a small number of individual magazine issues from

the Yahoo! Japan Auctions online auction service; while this allowed access to some documents

that I otherwise could not have obtained, the selection was limited to the issues that were put up

for auction at that exact time. General online searches yielded an inconsistent number/amount of

other sources, most specifically at the Internet Archive, which included a large number of

scanned manuals for individual phone models and a number of television commercials recorded

and uploaded by individual users (though without much included metadata as to when the

commercials aired beyond the year such as the channel, the time slot, etc.).

The amount and variety of documentary sources that were accessible during the writing

of the chapter were not ideal in terms of providing a thorough, chronological coverage of the

time period in question through multiple sources. For example, only having access to one or two

issues of most of the magazines does not paint a complete portrait of their coverage over the

entire period. However, the discourses present in the available materials do paint a fairly

consistent picture of the genealogical transformations of mobile media during this time, and given that they meet with Scott's criteria for evaluating documentary sources discussed above, it is unlikely that a larger and broader selection of sources would suggest a significantly different story. The fact also remains that the documents analyzed here do represent actually-existing discourses from the time period, which on their own are worthy of analysis from a genealogical perspective as they still leave one record of the transformations, emergences, ruptures, and remediations that characterized this period.

<u>Conclusion</u>

The purpose of this chapter was to introduce the methodological approaches for the following chapter's analysis of documents. First, I discussed the intentional use of the terms "keitai" or "keitai denwa" instead of the English equivalent 'mobile phone' as a means of calling attention to the specific Japanese context of this phenomena. In referring to the Japanese term, I am not implying that the experience of mobile media is somehow unique or exclusive to Japan, but rather that the social and structural contexts (the latter described in part in the previous chapter) of Japan frame the experience *in Japan* differently than it would be in the United States, etc. The term "keitai" was also explored as a discursive formation, a set of statements used to delineate the keitai from the similar PHS technology, which is different enough in its function and usage to necessitate being treated as a separate phenomenon.

I then discussed the materials used in Chapter 4 to illustrate the changing representations of keitai through the dissertation's selected period. John Scott's criteria for evaluating documents were used to argue for the authenticity, credibility, representativeness, and meaning of the documents used. The chapter also drew from the work of two games scholars, Graeme Kirkpatrick and Michael Z. Newman, who argue for the role that print media (specifically,

magazines) play in the development of communities, and more importantly in contributing to the processes of negotiation by which the meanings of media are established. As advertisements comprise the majority of the material addressed in the following chapter, the commentary from DuGay et al. on advertising's role in engaging with meaning and communicating aspirational values through representation was useful as an interpretive tool.

The following chapter will analyze a selection of print media from 1997–2007 to identify the changing discourses and representation of the keitai denwa through this time. Comprising largely of advertisements, the material is divided into four distinct periods where the discourses of keitai reflect the changing meaning and expectations of mobile media technologies. 1997 and 1998 show significant experimentation with the form factors that mobile media can take, and PHS devices are strongly represented during this time period. NTT DoCoMo is also engaged in a long-running advertising campaign that emphasizes the role its communications infrastructures play in supporting the logistics of everyday life. 1999–2001 is marked most prominently by the release of DoCoMo's i-mode service, and while there were still some experiments in different form factors or broader functionality, the keitai's shape and general expectations seemed to have solidified in this time. Print media during this period offered in-depth information on keitai features and i-mode websites geared towards non-technical users who nonetheless were interested in exploring this new technology. 2002 through 2004 encompass the release of 3G mobile service, but aside from this significant technical upgrade there is little of note in terms of major developments in keitai forms or expected uses; most of the promoted features seem to be small, incremental upgrades on specific carriers or models. DoCoMo launches a new advertisement campaign during these years which will carry on at least through the end of this dissertation period; the campaign focuses on the role that keitai (DoCoMo's handsets and

service, in particular) play in bringing together multiple generations of the same family who seemed to have difficulty connecting before their keitai use gave them something in common. And finally, 2005–2007 show the keitai as a relatively established technology, with significant small feature variations to appeal to a wide variety of consumers, campaigns promoting proper etiquette when using keitai in public, and simplified handset designs for older users who may want the convenience and connectivity of a keitai denwa but are not interested in the myriad other affordances. In this period we also see the emergence of a few early smartphones represented in the selected media. Taken as a whole, this period shows a progression from relatively unsettled early years when a variety of potential expectations and practices were still promoted, to the later period where the negotiations as to the meaning of keitai in Japanese society had been largely settled.

Emergence: Discourses of *Keitai*, 1997–2007

<u>Analysis (Discourses of Keitai)</u>

1997–1998: Competing Standards and Ideas of "Mobile Media"

The 1990s were filled with a diversity of mobile media technologies, all of which had different approaches to the concept of 'mobility'. U.S. Robotics released the first model in its Palm Pilot (initially, just called "Pilot") series of personal digital assistants (PDA) in 1996, a device that promised to remediate a number of analog office technologies including the calculator, calendar, and the beloved Rolodex. Its mobile form factor—and the much-touted feature of being able read and compose emails on the device and sync them with one's computer when they returned to the office—was part of the growing emphasis on mobile technologies extending both the physical and temporal range of 'the office', as discussed by Kakihara and Sørensen in their exploration of the mobility of labor with new information and communications technologies.[188]

This period, represented through the documentary source material, is characterized by a significant diversity of mobile media form factors. Of particular note are the prominent advertisements for convergent phones with PDA-like features such as large LCD screens with touch or pen input. The Toshiba Genio (fig. 4.1) offered a number of business applications in its PDA form factor, including e-mail, an address book, a calendar, and note taking function (including handwritten notes). In addition, it PHS connectivity allowed users to make phone calls, send faxes, and even browse the Internet wirelessly (with a service plan from a dial-up provider.) The Panasonic Pinocchio (fig. 4.2) advertises similar functionality, also pointing out

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188. Kakihara and Sørensen, "Mobility."

that the device can be used in a multitasking manner, allowing users to check their schedule or

take notes while in the middle of a phone call.

Figure 4.1: Toshiba Genio (advertisement), *Dime*, June 19, 1997, 60.

Figure 4.2: Panasonic Pinocchio (advertisement), *Shūkan Asahi*, Feb. 28, 1997, 11.

Both of these ads emphasize the intended business uses of these devices, but the

Pinocchio in particular is presented as "really, the office that can fit in your pocket." Both

devices are not described explicitly as mobile phones, but as "personal communicators" or

"pocket communicators" that include mobile phone (*PHS denwa*) functionality among their other

features. These two devices offer an excellent example of mobile media that was not yet

subordinated to the form and functionality of the mobile phone.

The form factors of the actual keitai and PHS handsets at the time were barely

indistinguishable from the handset to a cordless home phone system—they tended to a familiar

bar shape, with a three or four-line LCD display and a familiar 12-key dial pad (figs. 4.3,4.4).

Figure 4.3: Toshiba, "Toshiba no Keitai" (advertisement), *Dime,* June 19, 1997, 28.

Figure 4.4: Feature of various PHS handset models, *Dime,* June 19. 1997, 107.

Especially in 1997, the mobile phones (and PHS models in particular) emphasized the feature that would allow them to be used for data transmission when attached to a computer. While many of the bar-style phones would simply connect to a laptop with a special cable, some designs integrated a PCMCIA/PC-Card (a popular standard for attaching peripherals to laptop computers) connector with the phone itself, as can be seen on the rightmost model in fig. 4.4. A sponsored advertisement for Toshiba's Data Carrots PHS almost emphasizes its data transmission features (sending faxes, networking, Internet browsing) more than its traditional phone functionality (fig. 4.5).

The Kyocera DataScope DS-320 PHS handset (fig. 4.6) takes the kitchen-sink approach to many of the above features and functionalities—it provides PDA-like information management functionality, mobile email, a physical keypad, a PCMCIA card interface for use as a laptop modem, *and* PHS phone functionality. Again, the actual phone aspect is listed as just

one of the device's many features, and the advertising copy emphasizes the mobile mail viewer

most prominently with a photograph of a couple in a rowboat, presumably on a date, though the

man is clearly preoccupied with the DataScope in his hands as the woman does the rowing.

"Mail, anywhere" reads the top caption, while the bottom states, "Your easy mail viewer."

 As an interesting example of the diversity of mobile media in 1997, this year represents

the only time that the pager would be featured in any prominent fashion (with the exception of a

single advertisement in the *Yomiuri Shinbun* in 1999). A combination pager/PDA device is

featured on the cover of the June 19 issue of *Dime* (fig. 4.7) and is given a brief overview of its

features in the magazine's shopping section. A two-page spread from NTT DoCoMo (fig. 4.8)

also advertises a pager with the ability to receive short news clips and email, with the

advertisement showing a businessman in various amusement park-like rides, with the captions

"Even though I look like this, I'm still getting news/receiving email."

Figure 4.5: Toshiba Data Carrots PHS handset overview. *Dime*, June 19, 1997, 66–7.

Figure 4.6: Kyocera, "Dokodemo mēru," (advertisement), *Shūkan Asahi,* December 5, 1997, 104–5.

Figure 4.7: Cover of *Dime,* June 19, 1997.

Figure 4.8: NTT DoCoMo, "Kou mietemo, denshi mēru jushinshiteiru" (advertisement), *Dime*, June 19, 1997, 88–9.

Advertisements for NTT and NTT DoCoMo services appear in almost every issue of

Shūkan Asahi used in this dissertation, and the location and format of their advertisements says

something about the company's prominence—or, if nothing else, its advertising budget. The

majority of *Shūkan Asahi*'s pages are printed in black and white, on newsprint-like paper, with

the exception of a few pages immediately adjacent to the front and back covers, and a 4 or 6 page

spread at the center of the magazine which are in full-color, on glossy thick stock. While some of

the color pages at the beginning of an issue are sometimes devoted to travel articles which

feature color photography, most of the external pages are for advertising high-value products or

services: luxury watches cars, cigarettes, domestic whisky, or Japan Airlines. The center color

section and back pages are also for advertising, though for less 'flashy' products such as various

medicines, book releases, and real estate or home renovation services. NTT and NTT DoCoMo

ads are always two pages and in full color, and were generally in the central color spread on most

Shūkan Asahi issues through 2001, after which they would sometimes appear in the color pages at the front of the issue, but never at the back. Few other ICT companies ran full-color ads in the *Shūkan Asahi,* and none of them did two page spreads with the frequency of NTT.

With the exception of the pager featured in fig. 4.8, most NTT advertisements in the initial years didn't so much advertise products or services as they contributed to producing narratives *about* NTT and its role in Japanese society. Two early advertisements in *Shūkan Asahi* in 1997 focused on the company's role as facilitator of the new information age, with all of the utopian enthusiasm that surrounded discourses about the Internet in the late 1990s. One advertisement proclaims that "the network becomes a gigantic library" (fig. 4.9) and describes how the new digital revolution represents the same sort of paradigm shift as the emergence of Johannes Gutenberg's printing press (facilitated, of course, by NTT's communications infrastructure).

Another advertisement (fig. 4.10) draws on Marshall McLuhan's oft-cited metaphor of the global village that was frequently deployed in the early years of the Internet. Here, the advertisement speaks in broad strokes about NTT's collaboration with companies in Silicon Valley and with Stanford University on broad research initiatives centered around the emerging potential of global communications. The ad functions less as a means of promoting a product or service than it does to frame NTT's role in the new information age. And while McLuhan enjoyed some small amount of popular celebrity in the 1960s, it's somewhat impressive that one of his metaphors would be deployed in a popular news magazine in Japan in the 1990s—clearly with the assumption that the concept of the "global village" might be familiar to some readers.

Figure 4.9: NTT, "The network becomes a gigantic library" (advertisement), *Shūkan Asahi*, February 14, 1997, 80–1.

Figure 4.10: NTT, "Global village" (advertisement), *Shūkan Asahi*, February 21, 1997, 26–7.

Beyond the early months of 1997, there was a shift in the focus of NTT advertisements: while NTT ads continued to appear in nearly each weekly issue of *Shūkan Asahi,* ads for the larger NTT corporation (as shown above), were replaced with ads promoting the DoCoMo mobile division instead. The DoCoMo ads relied on less dramatic and grandiose imagery than the Gutenberg revolution or the global village, but they also eschewed the promotion of consumer products or services in favor of showing the many vital roles that DoCoMo services and infrastructure can play in society. One advertisement discusses the use of DoCoMo satellite phone services in relaying data used by scientists in monitoring volcanic and earthquake activity to predict future eruptions (fig. 4.11). Another features the role of DoCoMo satellite phone networks in transmitting video and other data to ornithologists studying albatross colonies in remote locations (fig. 4.12). The aim of the advertisements is clear: NTT DoCoMo infrastructure is vital to research in the natural sciences.

Figure 4.11: NTT DoCoMo satellite phone network used in volcano monitoring (advertisement), *Shūkan Asahi,* December 05, 1997, 144–5.

Figure 4.12: NTT DoCoMo, "Satellite phones solve the mystery? The little-known ecology of the albatross," *Shūkan Asahi*, March 06, 1998, 122–3.

Through the mid-2000s, many DoCoMo advertisements also offered more technical announcements of the applied research being conducted by DoCoMo into mobile technologies. Figure 4.13 announces DoCoMo's research into the "next [third] generation keitai denwa" with details on the development of wide-band CDMA cellular networks. This development is characterized by the question of what sort of functionality users might want from their phones (beyond voice calls), with various multimedia applications being a driving force behind the development of new video transmission codecs and other features. Another advertisement focuses specifically on the MPEG-4 video codec and its use in delivering smooth video transmissions over data networks (fig. 4.14)—a technical topic one would expect to find in a more specialized hobbyist magazine instead of a general-audience weekly publication.

Figure 4.13: NTT DoCoMo next-generation cellphone development (advertisement), *Shūkan Asahi*, March 07, 1997, 102–3.
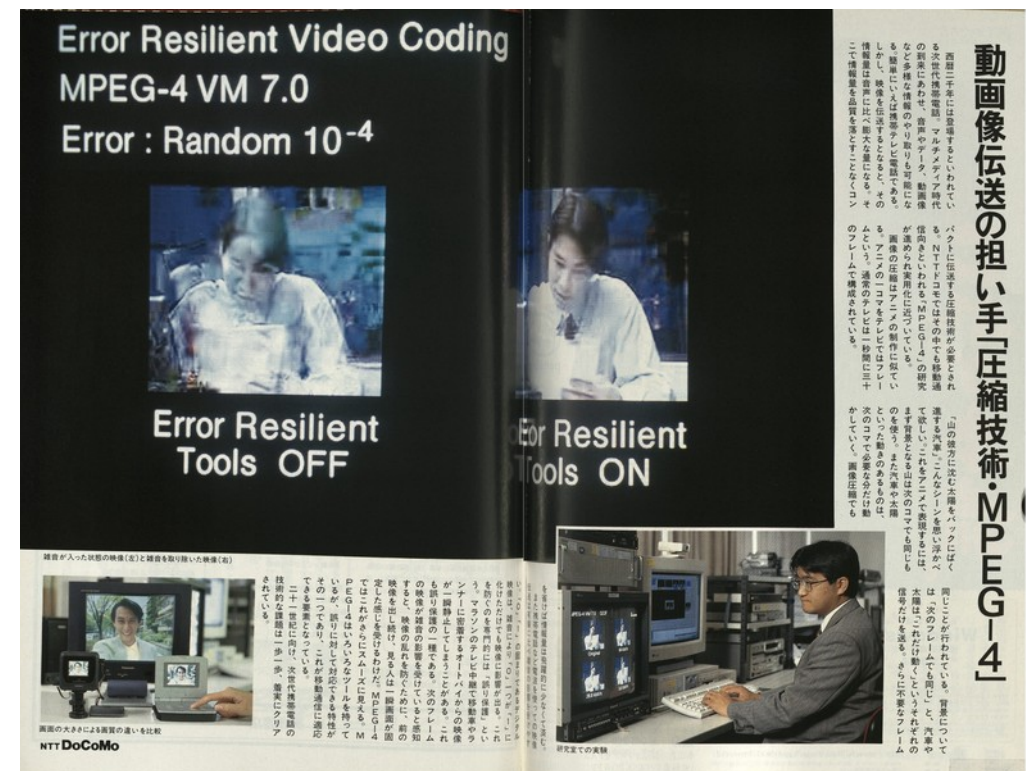
Figure 4.14: NTT DoCoMo's work with the MPEG-4 video codec (advertisement), *Shūkan Asahi*, December 19, 1997, 146–7.

NTT played a significant role in facilitating the communications infrastructure for the

1998 Winter Olympic Games, hosted in Japan's Nagano prefecture. A February 1998 DoCoMo

ad describes DoCoMo's role in providing network services both for internal organizational

communications as well as assisting both domestic and international news media in their news

broadcasts (fig. 4.15). In the following issue, a NTT ad shows the "world's smallest wristwatch

PHS" unit as a device that looks like something "seen in a science-fiction movie watched as a

child" but in reality is being used to support communications during the Olympic games. It's

unclear whether this device is available to the general consumer public, but the advertisement

goes into significant detail about the technical specifications for this particular device, including

the use of long-life lithium-ion batteries and the engineering of the internal antenna (fig. 4.16).

Both advertisements contribute to the narrative of NTT's services as part of the invisible

infrastructure that makes all of the hi-tech aspects of everyday life possible.

Figure 4.15: NTT DoCoMo facilitating network logistics for the 1998 Nagano Olympics
(advertisement), *Shūkan Asahi,* February 06, 1998, 146–7.

Figure 4.16: Wristwatch-style PHS phone from NTT (advertisement), *Shūkan Asahi*, February 13, 1998, 132–3.

Of particular note in this time period is the emergence of a discourse that contributes to the general cultural understanding of *how* the keitai denwa is to be used in public. Beginning at least with the Kyocera DataScope advertisement in the December 5, 1997 issue of *Shūkan Asahi* (fig.), an icon of a stylized heart circling a mobile phone handset appears in every successive advertisement for specific mobile phones and services, along with the short phrase "bring/carry [*keitai*] your manners with you" ("*manā mo isshoni keitai shimashō*," fig. 4.17). This campaign was and is part of the ongoing negotiation of the role of the keitai in public spaces that emerged in the mid-1990s, with the frequent annoyance of people taking calls in public (and on trains in particular) as well as the interruption of ringtones that announced incoming calls or messages.[189] Vibrating motors that signaled an incoming call or message allowed phones to be put into "silent

189. Mizuko Itō and Daisuke Okabe, "Keitai in Public Transportation," in *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, ed. Mizuko Itō, Misa Matsuda, and Daisuke Okabe (Cambridge, MA: MIT Press, 2006), 212–3.

mode" (in Japanese, *manā mōdo* or "manner mode"), combined with the rise of SMS and email

messaging in the late 1990s and awareness campaigns instituted by train companies eventually

led to a change in social norms that framed voice communication in public spaces as

inconsiderate, while text-based communication was and continues to be generally acceptable.[190]
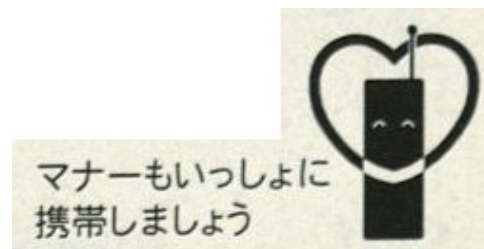
Figure 4.17: "Bring/carry your manners with you."

1999–2001: i-mode Introduction and Popularization

Two notable changes occurred during these three years. First, despite its initial popularity

(especially for its data transmission features as emphasized in above advertisements, which made

it popular among business users), PHS use declined significantly, while subscribers to various

keitai services increased. A *Yomiuri Shinbun* article from February 6 cites a report from the

Ministry of Posts and Telecommunications that stated the total number of subscribers to PHS and

keitai services increased by 667,000 by the end of January 1999, for a total of 45,645,000

nationwide subscribers. However, the breakdown tells a slightly different story: while keitai

services added an additional 790,000 subscribers for a nationwide total of 39,788,000 in January,

PHS subscriptions actually declined by 123,000, to a total of 5,857,000. The report states that

this was the 16 consecutive month of decline among PHS subscribers.[191] Another article in the

Yomiuri a month later, on March 6th, cites a follow-up report from the MPT showing that the

total number of nationwide keitai subscribers had surpassed 40 million. PHS subscriptions

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190. Itō and Okabe, 207.

191. "Keitai・PHS fukyūritsu 36% (携帯・PHS 普及率 36%)," *Yomiuri Shinbun*, February 6, 1999, Yomiuri Shinbun Shukusatsuban.

continued to decline for a 17 consecutive month to 5,783,000 subscribers, down from the peak of 7,680,000 in September, 1997.[192]

The second, and potentially more notable change, came with the release of NTT DoCoMo's i-mode content platform. Launching in February 1999, i-mode allowed users to subscribe to various types of content, such as news and weather reports; purchase tickets to events or pay bills; play games; and communicate with other users through e-mail services, all in a way that was heavily curated to appeal to the average user who was likely not an experienced technophile. While existing phones offered the ability to browse the Internet—in the form in which it existed in the late 1990s—i-mode phones offered a more consciously-designed version of the Internet and its potential services that appealed to non-technophiles and in some ways offered services beyond what was available on the Internet itself. DoCoMo invested a significant amount of resources not only into the development of the platform but into its publication, as indicated by a two-page spread in the *Yomiuri Shinbun* advertising the various services provided by i-mode and featuring television actress Hirosue Ryoko, who would feature regularly in DoCoMo's i-mode advertising (fig. 4.18). The advertisement's tag line—"hanasu keitai kara, tsukau keitai he. 'i-mōdo' honjitsu tōjō" ("from a phone for talking, to a phone for using. i-mode arrives today")—emphasizes the intended aim of the i-mode platform to extend the functionality of the keitai beyond mere talking.

The two-page spread occupied by the i-mode advertisement is somewhat unusual in that most advertisement for mobile carriers or handsets in the *Yomiuri* only occupied a single full page or a half-page, and advertisements for services or plans certainly did not take that amount of space in the paper. Following the i-mode announcement only two pages later, an

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192. "'Keitai' kanyū 4000 man dai toppa (「携帯」加入 4000 万台突破)," *Yomiuri Shinbun*, March 6, 1999, Yomiuri Shinbun Shukusatsuban.

advertisement for the Fujitsu F501i Hyper handset (prominently displaying its compatibility with i-mode services) is only a single full page, by comparison (fig. 4.19).

Figure 4.18: NTT DoCoMo, "Hanasu keitai kara, tsukau keitai he. 'i-mōdo' honjitsu tōjō" (advertisement), *Yomiuri Shinbun*, February 22, 1999, 20–1.

While in hindsight it is tempting to give greater prominence to i-mode advertisements and news, given its role in the popularization of the keitai denwa, it is also important to note the continuing release and promotion of other mobile devices and services in this time before i-mode and similar content platforms became the dominant model. At the same time of the i-mode launch, an article in the "Multimedia" section of the *Yomiuri Shinbun* covered the Tegacky, a mobile device developed by Toshiba that was billed as a "telephone that does not make calls." More specifically, PHS carrier DDI Pocket observed that the exchange of mail messages was starting to account for close to half of the communications between users, and decided to launch

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a device dedicated solely to the sending of messages.[193] A little larger than a pager, Tegacky

featured a LCD touch screen that allowed users to write messages by hand using a stylus and

then send them to others. Despite the article's report of moderately quick sales, it's not hard to

see how such a device would have a difficult time achieving popular adoption—the novel

messaging system would of course be accessible only to other users of the same device, and its

use of the PHS standard as subscribers continued to decline meant that the device would

unfortunately hold limited future potential.

Figure 4.19: Fujitsu F501i Hyper i-
mode handset (advertisement),
Yomiuri Shinbun, February 22, 1999,
23.

An IDO and DDI Cellular advertisement in the *Yomiuri* a week earlier announced the

carriers' upcoming transition to the digital cdmaOne standard (fig. 4.20); while many carriers

(including DoCoMo) offered both PHS and cellular services to take advantage of the established

PHS user base while at the same time expanding into newer technologies, the waning popularity

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193. "Kigaru Ni Mēru 'Moji Dake Denwa' (気軽にメール「文字だけ電話」)," *Yomiuri Shinbun,* March
    31, 1999, sec. Multimedia, Yomiuri Shinbun Shukusatsuban.

of PHS was clear. Despite the decline in the number of subscribers, however, PHS still held an

important role in the mobile ecosystem through its data transmission capabilities, which at this

time had become an established component of PHS service. A DoCoMo advertisement in a

February 1999 issue of *Shūkan Asahi* features the food company Kagome (known for its tomato

and other fruit juices) and its adoption of the PHS system for its internal phone networks,

allowing receptionists to route calls to employees even if they were physically not at their desks.

In addition, employees making sales trips are able to use email and PHS data transmission to

look up information for potential customers as though they were in the company office

(fig. 4.21).

Figure 4.20: IDO and DDI Cellular
announcement of upcoming cdmaOne service
(advertisement), Yomiuri Shinbun, March 24,
1999, 16.

Figure 4.21: NTT DoCoMo ad featuring the food company Kagome, which used a PHS system for internal communications and to connect traveling sales representatives (advertisement), *Shūkan Asahi*, February 05, 1999, 58–9.

Through 1999, advertisements indicate continuing experiments in both the form that mobile media could take, as well as the general functionality that a mobile phone could provide. A Panasonic advertisement in a March 1999 issue of the *Yomiuri* for the Digital Mova P207 Hyper phone handset promotes the phone's voice operation for dialing and other functionality using a picture of a stereotypical genie emerging from a lamp to say "Master, issue your command by voice instead of [using] buttons" (fig. 4.22).

Some manufacturers recognized that the features that were becoming associated with keitai and PHS handsets—most notably, email service—appealed to many customers who may not yet have or be interested in fully adopting the keitai technology. An advertisement for a Sony telephone/answering machine model attempts to bridge this gap by bringing email service to a more familiar domestic technology (fig. 4.23). The SPP-E777 series of answering machines

works in conjunction with a KDDI email service subscription ("Alpha Email") to allow

consumers to read and compose emails on the answering machine base station as well as the

wireless handset. The advertisement notes the wide range of compatibility with other devices—

mail can be exchanged with both computers and keitai or PHS handsets—and allows connecting

laptop computers for data transmission use as well. The domestic focus of this advertisement is

clear from the ad composition: a woman relaxes on a couch with a glass of juice, holding the

wireless handset. A vacuum cleaner, the only other part of the home featured, rests against the

couch—she's clearly taking a break from cleaning. The tagline reads, "Mama's IT revolution

begins with the telephone" (mama no IT kakumei wa, denwa kara hajimaru). The vacuum

cleaner as well as the use of "mama" (sometimes a form of address to one's mother, but also as a

generic synonym for a housewife) leave no question as to the intended audience for this

particular device and service.

Figure 4.22: Panasonic, "Goshujin-
sama, botan no kawari ni boisu de go-
meirei wo" (advertisement), *Yomiuri
Shinbun*, March 9, 1999, 36.

Figure 4.23: KDDI, Sony SPP-E777 answering machine unit with KDDI α-Email service (advertisement), *Shūkan Asahi*, December 29, 2000, 18–9.

A two-page spread in the *Yomiuri* advertising a variety of devices from electronics manufacturer Sharp (fig. 4.24) is possibly the best illustration of the diversity of mobile and semi-mobile devices at the time, and plurality of usage expectations that influenced the development of different form factors and features. A lineup of people in different roles or professions (a young boy in soccer club, a school-aged girl, parents, older people, a white-collar worker, a chef) are all shown holding placards stating what they want to use email services for, and on what kind of devices: "I want to be able to get in touch with my mom by [e]mail!", "I want to send photos and mail!", "I want to read mail and receive faxes on the same device!" The bottom of the advertisement features a wide range of devices in response to each of these needs, from keitai, to a cordless home phone with a large screen featuring all-in-one email, Internet, and fax viewing, to entries in Sharp's Zaurus line of PDAs. The ad's tagline, "Email culture for each person" ("hitori hitori ni 'mēru bunka' wo") and the focus on a range of different devices (even if

some of them have a significant overlap in their features) stands in contrast to the convergent

trajectory that the keitai would begin to take with the collapse of many of these individual

features into a relatively standardized form factor and usage practices.

Figure 4.24: Sharp, "Email culture for each person," (advertisement), *Yomiuri Shinbun*,
February 21, 1999, 20–1.

This turning point around the millennium also marks the last time that PDAs appear in

advertising promotions. The convergence of PDA and PHS handsets in devices featured in 1997

and 1998 was almost absent in the materials reviewed covering 1999–2001; non-phone devices

were generally standalone PDAs with no built-in wireless connectivity features, such as the

various Sharp Zaurus models in Figure and the Palm OS-based Handspring Visor, which

appeared in a single ad in the *Shūkan Asahi* and is notable for being one of the few mobile

devices in any of these documents that was not made in Japan (fig. 4.25). PDAs will occasionally

appear in device reviews in specialist magazines, but for the general audiences of publications

like *Shūkan Asahi*, the keitai has become the primary form of mobile media promoted in those

issues. The shift is likely due to the growing set of features provided by keitai handsets:

PDA/phone hybrids emphasized their mobile office features such as email access and storage of

contacts, both of which had become standard features in keitai services. While the ability to

access the Internet that most PHS-based PDA handsets promoted seems at first to be a major

feature, given the development of the Internet in the late 1990s and early 2000s—and especially

its adoption within Japan—the promise of Internet access may have been less of an essential

feature, especially with the release of i-mode and other mobile-specific content platforms in

1999. Fax remained an essential business communication tool—and continued to be so, even

beyond the 2000s—but it's possible the actual ability to send faxes on the go wasn't an essential

feature of the mobile office.

Figure 4.25: Handspring Visor
(advertisement), *Shūkan Asahi*,
March 9, 2001, 96.

While i-mode received significant promotion in the *Yomiuri* at the time of its release, it is

interesting to note that the coverage in the *Shūkan Asahi* generally did not focus on the i-mode

service at all. DoCoMo advertisements continued to emphasize the role that NTT played in the

development and management of public services and infrastructure, including the use of

DoCoMo networks to allow first responders to transmit disaster images back to the dispatch

offices (fig. 4.26)and facilitating emergency communications services following earthquakes or

other natural disasters (fig. 4.27). While many of DoCoMo's advertisements contribute to its

image of helping to support and manage vital social communications infrastructures, a smaller

number of advertisements also feature the role its technologies and services play in the support

of business logistics. As with the previous ad detailing the Kagome company's integration of

PHS technology in its offices, another DoCoMo ad features the fried croquette chain Korochan

and the company's use of the i-mode service to coordinate ingredient orders from wholesalers

and collect sales and other data more efficiently from individual shops (fig. 4.28).

Figure 4.26: NTT DoCoMo, uploading images of a disaster scene to the fire department
dispatch office (advertisement), Shūkan Asahi, February 9, 2001, 94–5.

Figure 4.27: NTT DoCoMo, mobile communications base station established in Yamanashi Prefecture (advertisement), *Shūkan Asahi*, February 23, 2001, 18–9.

Figure 4.28: NTT DoCoMo, Korochan company's use of i-mode in business operations (advertisement), *Shūkan Asahi*, December 14, 2001, 18–9.

Though general consumer magazines focusing on popular trends and technology such as *Dime* had been covering keitai models and features for some time, the growing popularity of keitai denwa in general and the i-mode service in particular spurred the publication of magazines and mooks specifically dedicated to this growing techno-social phenomena. *I-mode Jōhō Saito 1200* (i-mode Information Site 1200) is one example of this genre, a mook aimed at a general and non-technical audience that provides reviews and information about specific phone models and features and, as the title implies, capsule reviews of 1200 i-mode websites categorized by different topics such as local area information, shopping, entertainment, etc. Part of Softbank Publishing's Keitai Best series, which covers keitai in general, *i-mode Jōhō Saito 1200* is specifically concerned with i-mode compatible devices from DoCoMo and services on the i-mode platform. I-mode spokesmodel Hirosue Ryoko is featured prominently on the cover of vol. 3 (fig. 4.29) and in the handset review/buying guide feature at the start of the magazine, implying a connection between the magazine and NTT DoCoMo's services for which Hirosue regularly features in i-mode ads (fig. 4.30).

Figure 4.29: Cover, *i-mode Jōhō Saito 1200*, vol. 3, January 2001.

Figure 4.30: "i-mode keitai buying guide", i-mode Jōhō Saito 1200, vol. 3, January 2001, 12–3.

Despite the deep focus on this technological device, the publication is aimed at general audiences, rather than enthusiasts who may already be familiar with the in-depth operation of keitai and other mobile devices. The buying guide at the start of the issue explains the differences between different model tiers, and the reviews of the individual handsets offer detailed descriptions of the handset's physical affordances such as the various keypad buttons as well as walkthroughs of basic operations such as adding contact information entries to the address book (fig. 4.31). Reviews of phone handsets also highlight manufacturer-specific features, such as the scrolling jog dial and Memory Stick add-on slot in the Sony SO502iWM Hyper (fig. 4.32).

The reviews for the titular 1200 websites take the form of small capsule reviews organized into categories such as i-mode/keitai specific information, shopping, travel, meetups, etc. The reviews provide short write-ups of the sites and include the URL, an image of the site's homepage, and a number of icons indicating the various content or features offered by the site

(see fig. 4.33). Similar to the World Wide Web or Internet 'yellow pages' books and CD

collections that appeared in the United States in the late 1990s and early 2000s, these reviews

were useful in guiding users to web content in an era where deep web search such as that

provided by Google was still in its infancy, and most of the resources for discovering websites

were directories such as Yahoo.

Figure 4.31: Feature overview and walkthrough of the NEC N502it handset, *i-mode Jōhō Saito 1200,* vol. 3, January 2001, 20–1.

Figure 4.32: Model-specific features of the Sony SO502iWM, *i-mode Jōhō Saito 1200*, vol. 3, January 2001, 14–5.

Figure 4.33: A selection of websites offering information on specific activities or resources within a city or region, *i-mode Jōhō Saito 1200*, vol. 3, January 2001, 68–9.

2002–2004: Standardization and Convergence

From 1997 through 2001, the keitai denwa underwent a progression from a largely

business-oriented device—either replicating traditional office affordances for the worker on the

go, or used as a data interface for a laptop computer to enable email communications, connection

to company servers, etc.—to a general-purpose consumer device with considerable appeal to the

general user, as indicated in magazines such as *i-mode Jōhō Saito 1200*. From 2002–2004, the

transition was significantly less dramatic: the keitai was already becoming established as a

popular technology, and the print sources from this time period reflects this in their focus on

either reinforcing the popular (and pedestrian) nature of the keitai, or restating its role as a part of

vital contemporary technological infrastructure.

Of particular note is the changing nature of NTT DoCoMo's advertising campaigns in the

Shūkan Asahi. While nearly every issue surveyed from 1997-2001 featured a prominent

DoCoMo advertisement highlighting the company's role in essential technological

infrastructures, this campaign would fade out in early 2002 as DoCoMo's approach changed. The

focus of DoCoMo advertisements in early 2002 also shifts from the emphasis on technological

infrastructure—and technical details that may be somewhat beyond the knowledge or interest of

the average reader—to showcasing new technologies that are more relevant to the individual.

One advertisement promotes DoCoMo's new FOMA (Freedom of Mobile Multimedia Access)

third-generation mobile service by highlighting its capacity for streaming live video. Using as its

example an international preschool, the ad notes that the preschool has been streaming live

footage of the classroom setting for parents to check on their children, but the service was

initially only offered in a format that was only accessible from a desktop computer, which many

of the parents did not own. By taking advantage of DoCoMo servers that process streamed video

into a format and resolution accessible through FOMA handsets, the preschool is now able to ensure that parents are able to participate in classroom observations using only their keitai ("Are you being a good child?," fig. 4.34).

The higher bandwidth of the FOMA service is also emphasized in an advertisement for computer-guided tours of Tokyo's Shinjuku Gyoen National Garden, which rely on GPS systems —and of course, the mobile data connection provided by a DoCoMo PCMCIA modem card (fig. 4.35). The 384 kbps data speeds that FOMA offers are significant upgrades from the 32 and 64 kbps connectivity that was a major selling point of PHS handsets and mobile interfaces just a few years earlier.

Figure 4.34: NTT DoCoMo's FOMA service allows the streaming of live video. *Shūkan Asahi*, February 22, 2002, 18–9.

Figure 4.35: NTT DoCoMo, wireless computer-guided tours in the Shinjuku Gyoen using the FOMA network, *Shūkan Asahi*, February 8, 2002, 18–9.

By 2003, DoCoMo advertisements in the *Shūkan Asahi* would change entirely from the technological focus on network features to more consumer-facing applications and partnerships with other companies. The "Mobile Report" campaign is presented in an advertorial style and 'reports' on the ways that mobile technologies—specifically, i-mode services—are being used by different companies or organizations. In contrast to the previous focus on communications infrastructure in the previous long-running advertising campaign, here the focus is more on the consumer or private individual, where i-mode can be used to purchase movie or other event tickets through the Pia ticketing service (fig. 4.36) or used to search for and then locate books within the holdings at the Academy Hills professional library in the Roppongi Hills complex (fig. 4.37). These advertisements simultaneously promote the partner organizations NTT's is featuring, as well as serve to advertise potentially new and unused features of the i-mode platform itself to consumers who may not yet be familiar with them. The shift in emphasis from

the underlying infrastructure of everyday life to the individual experience of everyday life arguably presents a shift in NTT's advertising focus, from what its services can do for society to what its services can do for the individual. This focus will continue in future DoCoMo advertisements, while the ones highlighting the industrial or public applications of NTT technologies are largely absent.

By the end of 2004, NTT would begin a new advertising campaign for DoCoMo services, under the tagline "家♥族" (*ie rabu* [love] *zoku,* or something like "home, love, family")[194]. The advertisements focus on several generations of a family, connecting through the use of their (DoCoMo) keitai. Fig. 4.38 features Teruko, ranked 8 worldwide in master's swimming, and her granddaughter Yu, who was on the 8 place nationally-ranked tennis team as a high schooler. They joke about being united in taking 8 in their respective pursuits, and the advertisement emphasizes how each thinks the other is "cool" and their shared dislike of losing. In a small area towards the bottom, the ad shows the keitai models used by Teruko and Yu, and below that a small picture of some color options for the FOMA らくらくホン (*rakuraku hon,* or "easy phone"), a model with simplified features and operation advertised to senior citizens for whom the features of standard keitai models are presumed to be too complex. The family story and connections are prominently featured; the DoCoMo keitai which facilitates these connections sits in the background as invisible infrastructure.

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194. There's a bit of a pun present in this tagline. The kanji character 家 (*ie*) by itself means house or home, and 族 (*zoku*) is a tribe, family, or group (for example, it is used to denote groups of elements in the periodic table as well). The word 家族 (*kazoku*), minus the heart icon, refers to one's immediate family. Separating the two kanji with the heart icon creates a different meaning when the characters are read individually, yet the reader will obviously grasp the meaning of the compound of both characters as well.

Figure 4.36: NTT DoCoMo, using an i-mode phone to purchase movie tickets through the Pia ticketing agency, *Shūkan Asahi*, December 5, 2003, 106–7.

Figure 4.37: NTT DoCoMo, searching for and locating books in the Academy Hills library through i-mode search services, *Shūkan Asahi*, February 6, 2004, 95–6.

Figure 4.38: NTT DoCoMo's "Ie♥Zoku" advertising campaign, *Shūkan Asahi*, December 24, 2004,2–3.

This advertisement campaign continues on at least through 2007, and continues the shift in NTT DoCoMo's advertising approach. From the early years of this time period, DoCoMo (and the parent NTT corporation as well) conspicuously called attention to the communications infrastructure it had developed, framing its research and development efforts in terms of technologies that may not have any direct appeal or relevance to the consumer, but facilitate or contribute to society in general (managing communications for the Olympic games, enabling scientific research of remote places, supporting disaster response teams, etc.). Following the launch of i-mode, the keitai began to be seen as more than just an extension of a household appliance or office equipment—this had certainly previously been true for early adopters and the technologically-savvy, but the accessibility and appeal of the i-mode platform turned the keitai into a desirable accessory even as the technological infrastructure that made it possible proceeded to dematerialize. But so to does the keitai itself in "Ie♥Zoku" campaign, with its focus

on family connections. The keitai (or the DoCoMo service, in any case) is still present in the way

it facilitates these connections, but the exact model or features are hardly important—the

handsets used by the subjects of the advertisement are almost too small for an unfamiliar reader

to identify specific features, and there's nothing in the advertisement that suggests particular

usage practices.

If DoCoMo's advertisements have the keitai itself fading into the background, the

coverage in hobbyist magazines continues to emphasize a dizzying array of handset models and

features. The specialist mook *i-mode Best* mirrors the approach of *i-mode Jōhō Saito 1200* in

presenting in-depth coverage of the features of individual models and their distinguishing

characteristics. In contrast to the business-focused orientation of keitai promotion in previous

years, these ads are entirely from the perspective of features that appeal to the consumer, and are

in general largely disconnected from the core functionality of a mobile communications device.

The review of NEC's FOMA N900i handset emphasizes the different color options available; its

reduced size compared to previous models and the curved shape the handset takes when opened;

an external monochrome "sub-display" screen that can provide time and signal information at a

glance or display information on incoming calls or messages; the use of a miniSD card for

storing data; and the availability of the famous *Dragon Quest* role-playing game as a built-in

application (fig. 4.39). Mitsubishi's FOMA D900i handset is also available in two color

variations and includes other features such as an external color screen; a front-facing camera

built into the hinge of the phone, using a Fujinon brand lens from Fujifilm with a 1.92 megapixel

sensor;[195] the use of Sony's Memory Stick PRO Duo flash memory format for data storage; and

the ability to connect the phone to a television to view photos and videos (fig. 4.40).

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195. The inclusion of sensors and lenses from established camera manufacturers continues to be a
     premium feature advertised in smartphones today.

Figure 4.39: Feature review of the NEC FOMA N900i, *i-mode Best*, June 2004, 14–5.

Figure 4.40: The Mitsubishi FOMA D900i, *i-mode Best*, June 2004, 20–1.

While the emphasis on these features wouldn't necessarily be out of place in the context

of promotional materials produced by handset manufacturers, the mook also provides detailed

comparisons among 900i-series handsets (and with each model's predecessor in the 505iS series)

that feature physical dimensions, storage available for saved contacts and i-mode apps, available

ringtone options, and more. The comparisons also make note of the main screen type and number

of colors along with any sub-screens, hardware features unique to a particular model, and any

pre-installed applications such as games or TV remote control interfaces that use the phone's

infrared sensor (fig. 4.41). In addition to these general feature overviews, *i-mode Best* also

provides detailed walkthroughs of the different functions of the reviewed phones, such as email

operation. Figure 4.42 illustrates a comparison of the email capabilities such as the storage for

sent and received messages, the number of folders for sorting messages, the possibilities for the

use of emoji or colored text, etc., as well as the additional features unique to each particular

handset.

The intended general audience is reinforced in the choice of human models used

throughout the articles in *i-mode Best*. In these reviews, two young women in business suits are

shown interacting with the different phone models and portrayed as giving commentary on the

easy-to-use features. The simple black suits with white blouses or undershirts call to mind the

"recruit suit," the austere and monochromatic outfits worn by college students and recent

graduates as they undertake *shūshoku katsudō* ("job hunting," *shūkatsu* for short).[196] *Shūkatsu*

generally begins in the spring when the Japanese academic year ends, and is marked by

companies holding massive recruitment fairs which (hopefully) will lead to individual interviews

for aspiring applicants later in the fall. The nondescript, standardized recruit suit is usually worn

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196. Satoko Nakagawa, "Suiting the Times: The History and Future of Japan's Recruitment Fashion,"
    Mainichi Daily News, June 25, 2019,
    https://mainichi.jp/english/articles/20190625/p2a/00m/0fe/008000c.

for the *shūkatsu* process and potentially in the first few months of employment (after which point

the new employee is expected to transition to more standardized business attire). The use of

models with the signifying details of early adulthood in *i-mode Best* reinforces the mook's

intended general audience: after moving beyond the exclusively business connotations of its

early years the keitai enjoyed overwhelming popularity in youth demographics. That the models

are presented female can also be read in the context of general stereotypes of technology and

gender (especially in early 2000s Japan), where more enthusiast or advanced users would be

presumed to be male. The audience targeted by *i-mode Best* is clearly the technology novice who

nonetheless is a heavy keitai user and is interested in in-depth information that enhances

everyday use.

Figure 4.41: Comparisons among different models of 900i-series i-mode keitai, *i-mode Best*, June 2004, 24–5.

Figure 4.42: Email features of 900i-series phones, *i-mode Best*, June 2004, 28–9.

Popular trends magazine *Nikkei Trendy* features similar comparative coverage of features, though it is not limited simply to i-mode phones. In the April 2004 issue, a feature entitled "Dai 3 sedai ga shuyaku ni naru! Keitai denwa jitsuryoku tesuto" ("The third generation takes the leading role! Keitai denwa proficiency test") explores the third-generation mobile technology offerings from Japan's three major carriers: DoCoMo's FOMA, KDDI/au's 1x WIN, and Vodaphone's Vodaphone Global Standard (VGS). In addition to providing comparisons between the three services with regards to data speeds, plan details, and mail message sizes, the magazine also details new features that are major selling points of third-generation phones, such as the accuracy of "naviwalk" GPS navigation tools (an early predecessor of today's Google or Apple Maps) or how phones with high-grade cameras stack up against a contemporary FujiFilm Finepix F420 digital camera with regards to color saturation, performance in low-light settings,

and macro photography (fig. 4.43)[197]. An article titled "Shuryū no katachi ni aete hantai 'tanin to chigau' 'tsukaiyasui' wo jitsugen" ("Going against mainstream forms by being 'different from others' and 'easy-to-use'") shows—if it wasn't already clear—the extent to which the keitai has become normalized as an everyday fashion accessory. The article shows off a number of handsets notable not so much for their functions or features, but for their unconventional designs (fig. 4.44). The Kyocera W11K sports a glossy finish in red, white, or black that was inspired by automotive detailing, and its angular, beveled edges certainly provide a different shape than most clamshell-style phones (though the article's mention of the feeling of a peeled potato run under water as an inspiration for the shape certainly does lose a bit of the trendy appeal). Sony's A5404S features a two-tone design intended to evoke the "high-quality" designs of consumer electronics in the 1970s and the hinge is designed to let the phone sit open on a desktop for hands-free movie watching or other content viewing. The A1402S features detachable faceplates in a number of metallic colors and flashy prints to allow the user to customize their phone beyond a limited choice in body colors. And the Sanyo Infobar is a striking candy bar-style design with glossy body colors and beveled buttons that resemble tiles for a tactile feel.[198] While these are just a handful of models on KDDI's au service, the attention paid to the aesthetic qualities of these particular handsets, as a means of distinguishing them from the 'mainstream' models, further reinforces the keitai's role as a consumable product, when the distinguishing characteristics of purely superficial design elements begin to become as important—or more so —than the functional utility of the devices.

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197. "Dai 3 sedai ga shuyaku ni naru! Keitai denwa jitsuryoku tesuto (第３世代が主役になる！携帯電話実力テスト)," *Nikkei Trendy (日経トレンディ)*, April 2004.

198. "Shuryū no katachi ni aete hantai 'tanin to chigau' 'tsukaiyasui' wo jitsugen (主流の形にあえて反対「他人と違う」「使いやすい」を実現)," *Nikkei Trendy (日経トレンディ)*, April 2004.

Figure 4.43: Comparison of GPS navigation features and camera quality among selected 3G keitai models, *Nikkei Trendy*, April 2004, 32–3.

Figure 4.44: Keitai sporting unconventional designs "outside of the mainstream," *Nikkei Trendy*, April 2004, 228–9.

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Lest it seem that the keitai has entirely lost its roots as a business tool, a DoCoMo advertisement for the FOMA F880iES handset series offers a reminder of its use in the business world. A suited executive sits at his desk in his office high above the city, barking a command into his phone: "Okay, let's do it" (fig. 4.45). The FOMA F880iES handset offers the ability to record and send voicemail responses to text messages, allowing the busy executive to remain "effective in the fast-paced business scene." One of the advertisement's taglines offers a pointed rebuttal to the design-forward handsets featured previously, stating "Watashi no keitai wa, otona no FOMA desu" ("My keitai is an adult's FOMA [phone]"), not-so-subtly implying a difference from users who prioritize aesthetic qualities over basic functionality. Interestingly, a small detail in the ad notes that this model is part of the FOMA Rakuraku Phone line of easy-to-use devices marketed towards older users who desire a phone with more basic features; perhaps the executive isn't as on the cutting edge of the "fast-paced business scene" as the ad initially implies.

Figure 4.45: NTT DoCoMo, "My keitai is an adult's FOMA [phone]" (advertisement), *Shūkan Asahi*, December 31, 2004, 18–9.

2005–2007: Public Manners, Late Majority, and Early Smartphones

The trends in advertising and magazine coverage in the previous period (2002–2004)

showed a continuing transition from the unsettled diversity of mobile media in the late 1990s

towards much more standardized forms and usage practices. By 2005, the role that the keitai

played in public life was relatively established, and the representations that appear in print media

were less about convincing consumers about the potential of this technology and more about the

promotion of minor differences that exemplify advertising for consumer goods in a capitalist

society. An article in the magazine *Shūkan ASCII* titled "Omoshiro keitai 10" ("10 Interesting

Keitai") profiles unique handsets from DoCoMo, au, and Vodaphone, but the features discussed

aren't related to the basic operation and functionality discussed in the mooks in the previous

section (fig. 4.46). Instead, the devices are noted for additional features such as the inclusion of a

"full web browser" (able to access regular Internet sites instead of sites written for the i-mode

service), built-in TV tuner, waterproof case, 3.2 megapixel camera, ability to read Microsoft

Office documents, and "osaifu keitai" ("mobile wallet") contactless payment functionality.[199] The

basic features of a keitai denwa—making phone calls, sending messages, storing contact

information—have been rendered invisible because they are, at this point, so unremarkable.

Given the everyday popularity of the keitai, it is to be expected that widespread cultural

practices accompany the ubiquity of the device, not all of them positive. The "keitai manners"

icon that accompanies every keitai ad was mentioned previously, but a 2005 DoCoMo ad in the

Shūkan Asahi addresses what seems to be a significant social issue: people taking calls because

they feel an obligation to the caller. A businessman in a movie theater replies that he has a client

on the phone as a staff member asks him to turn off the power during the screening. A flight

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199. Shima Tooru, "Omoshiro keitai 10 (おもしろケータイ 10)," *Shūkan ASCII (週刊アスキー)*, July 12,
    2005.

attendant asks a woman on an airplane seat to turn off her phone, and the woman replies, "But, my boyfriend…" And another businessman sitting in the reserved seats of a train (ostensibly reserved for the elderly, pregnant women, or people with mobility issues; keitai are supposed to be turned off by the reserved seats) cuts off a train attendant making the same request with "Just a little longer…" (fig. 4.47). The advertisement's tagline is, "We want to be able to say, 'I'm sorry, I can't answer the phone right now' on your behalf," and DoCoMo offers to do this through prerecorded messages that inform the caller that the recipient is in a location where they cannot answer their phone or were requested to turn the power off. The advertisement notes that "it's not enough to say 'remember your manners'" and that DoCoMo should help make it easier to follow social conventions—a technological solution to a social problem, and one that implies some amount of pro-social consideration on the part of the telecommunications company.

Figure 4.46: Unique keitai features such as customizable external LED display, "osaifu keitai," and an early smartphone with touchscreen and WiFi. *Shūkan ASCII*, July 12, 2005, 49.

While the semi-public service announcement about manners appears to be a one-off advertisement, in other issues of *Shūkan Asahi,* DoCoMo continues its previous "Ie♥Zoku" advertisement campaign with ongoing stories of younger generations connecting with their grandparents through mobile media (figs. 4.48 and 4.49). Of note in this series of advertisements is that the grandparents use various models of DoCoMo's Rakuraku Phone lineup, which provides a simplified and safer keitai experience. An advertisement for the "Rakuraku Phone Simple" (*Rakuraku Hon Shinpuru*) features caricatures of older users proclaiming the model's appealing features, such as the large screen that makes it easier to prevent mis-dialing numbers, the ability to block all calls from numbers other than close friends, and a high volume range to better hear a conversation with one's grandchildren (fig. 4.50). The promotion of these particular models and services—both in the straightforward Rakuraku Phone Simple ad as well as in the "Ie♥Zoku" campaign—further emphasizes the role that keitai came to occupy in the past decade as a commonplace facilitator of interpersonal communications. From the perspective of diffusion of innovations theory, the audiences for these ads would likely fall into the later part of the "late majority" category of adoption, if not the "laggards."[200] However, for this group—which generally would not be the target audience for advanced consumer electronics—to be the focus of such sustained advertising campaigns again reinforces the transformation of the keitai into an everyday appliance.

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200. Everett M. Rogers, *Diffusion of Innovations*, 3rd ed. (New York, NY: The Free Press, 1983), 246–7.

Figure 4.47: NTT DoCoMo, public manners campaign (advertisement), *Shūkan Asahi*, December 20, 2005, 12.

Figure 4.48: NTT DoCoMo, "I thought of things I want to ask my grandfather." (advertisement), *Shūkan Asahi*, February 18, 2005, 18–9.

Figure 4.49: NTT DoCoMo, "Here, there is unforgettable scenery, and unforgettable flavors" (advertisement), *Shūkan Asahi*, February 24, 2006, 22–3.

Figure 4.50: DoCoMo's Rakuraku Phone Simple, *Shūkan Asahi*, February 10, 2006, 4.

By the mid-2000s, the keitai had been refined to a relatively stable artifact: its primary

uses (email messaging, phone calling to a lesser extent, accessing content provided by platform

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services) were well established along with their attendant cultural practices (necessitating

advertisements and carrier features encouraging specific modes of public etiquette regarding the

use of keitai, among other things). The mid-2000s on, the overall form factor and expectations

for its use had generally solidified, and new innovations took the form of secondary features

(GPS navigation, contactless payment systems, integrated television tuners, 'full' web browsers,

etc.) that furthered the convergent properties of the keitai (fig. 4.51).

Figure 4.51: Keitai featuring full
web browsers, GPS navigation, TV
tuners, and more. *Shūkan ASCII*,
March 20, 2007, 41.

Many of these new features are ones that we recognize today as integral to the features

offered by smartphones. Even as these new features were being explored, the keitai generally

maintained the same familiar form factor, that of the typical mobile phone handset in clamshell,

slide, or candy-bar styles. During the later part of this dissertation's period, however, there began

to emerge other device form factors referred to as "smartphones" and which generally focused

more on affordances usually associated with the personal computer such as WiFi, 'full' web

browsing, and synchronization with desktop office suites or other programs. Some of these

features had already appeared individually in different keitai models, but the smartphone form

attempted to combine them with a new user interface beyond the standard 10-key touchpad,

either by integrating something like a miniaturized QWERTY keyboard, or, more successfully, a

touch screen. Figure shows the Motorola M1000 as an early example of this, emphasizing the

phone's wireless LAN (WiFi) capabilities as well as the ability to synchronize emails with

Microsoft Outlook, a mainstay of business communications. An advertisement for the EMOBILE

carrier in *Shūkan ASCII* (fig. 4.52) features the Sharp EM-ONE, an early iteration of what is

more recognizably a smartphone, though the advertising copy still refers to it as a *keitai*, or more

specifically, "the keitai's new keitai" ("keitai no shin keitai"). The EM-ONE runs the Windows

Mobile 5 operating system and takes advantage of EMOBILE's new high-speed data network

offering a bandwidth of up to 3.6 megabits per second for an online experience close to that of a

desktop computer. It also features the ability to edit Microsoft Word and Excel documents, and to

view PowerPoint presentations.

While the keitai would remain largely dominant into the second decade of the

millennium, it is interesting to see the emergence in this time period of experiments in

affordances and form factors that we associate with the smartphone today. Through the period of

this dissertation, there have been experiments in other form factors—the PHS/PDA hybrids in the

late 1990s, bold attempts to rethink mobile communication as with the Tegacky—but overall the

cordless telephone-inspired form emerged as the dominant one through this time period. When

the iPhone was released in the United States in 2007 (and Japan in 2008), it was just one of many

competing smartphone approaches that were attempting to unseat the dominant mobile form

factor.

Spring lineup of 36 new keitai models featuring full web browsers, GPS navigation, OneSeg television tuners, and more. Shūkan ASCII, March 20, 2007, 41.

Figure 4.52: EMobile's Sharp EM-ONE, one of the first modern smartphones on a Japanese carrier, *Shūkan ASCII,* March 20, 2007, 22.

Conclusion

The snapshots offered by the sources in this chapter provide a time-lapse look into the changing representations of the keitai denwa—along with its meaning and intended uses—over this time period. In the mid- to late-1990s, 'mobile media' is shown to be a relatively fluid concept that is generally united around some core features meant to extend the affordances of the personal computer. In addition to their primary functionality as mobile phones, the ability of keitai and PHS handsets to be used for data transmission to send and receive email and faxes from a laptop computer featured prominently in early advertisements. In addition, convergent PDA devices like the Toshiba Genio or Panasonic Pinocchio offered features that could cut the laptop computer out of the equation entirely, with the ability to send and receive email, send faxes, store contact details and even browse the Internet. In either case, the intended user was clearly the mobile businessman who needed access to the affordances of the office on the go.

Around the turn of the millennium, the representation of keitai underwent several shifts with regards to what features were being promoted, who the intended user was, and what practices were meant to be associated with the technology. This time period shows the transformation from a business tool to a convergent consumer device that not only absorbed the functions of a number of other discrete devices—camera, portable music player, wired telephone —but also democratized some of the previously 'business-only' features such as email, transforming them into broader tools for everyday communication. The keitai was a device engaged in processes of remediation at a number of different levels, though in a much more compressed fashion than the original formulation of the concept as a means to think through new media. The objects of the keitai's remediation in some cases were barely a decade old (digital cameras, portable music players), and to some extent it was even engaged in a sort of 'double remediation' through absorbing or supplanting previous digital technologies (the PDA, email) that themselves replaced more analog media technologies (the Rolodex, the notepad, inter-office memo systems). Through these transformations and remediations, the keitai denwa also established itself in this time period as a stable discursive formation, setting the device apart from not only the fading PHS technology, but also other discrete or convergent media technologies that it was slowly replacing.

The following chapter will focus on 2007, the concluding year of the period discussed in this dissertation, to address one of the dissertation's core assertions that to understand and build theoretical approaches concerning the contemporary (as of 2023) smartphone, it is essential to understand the history of the keitai and its role in establishing the meaning of mobile media. The chapter will discuss the release of Apple's iPhone smartphone in 2007; while the device today has been instrumental in establishing the present paradigm of 'smartphone as mobile media'

along with handsets using Google's Android operating system, at its release the iPhone was a polished if relatively limited device that lacked many of the features that contributed to the keitai's popularity in Japan. The keitai denwa was present in a number of discourses in America that saw the mobile phones of Japan as significantly more advanced than the handsets and carrier services available at the time in the U.S., and also as emblematic of the techno-orientalist discourses that framed Japan as a nation that was technologically advanced in even most common aspects of society. The emergence of the iPhone functioned as a moment of rupture in these discourses, when some (eventually all, many years later) of the most visible or intriguing features of the keitai denwa became available to American audiences.

Chapter 5.

Closure: From i-mode to iPhone

Introduction

At the 2007 MacWorld exposition on January 9th, 2007, Apple CEO Steve Jobs introduced "three revolutionary products" that Apple had been developing for several years: "a widescreen iPod with touch controls, a revolutionary mobile phone, and a breakthrough Internet communications device." [201] After a few suspenseful moments as Jobs teased the three products, he revealed that they were not three separate devices, but one: the iPhone, Apple's first smartphone. Before highlighting the features of this new product, Jobs proclaimed that "today, Apple is going to reinvent the phone."

Jobs' well-known showmanship clearly plays a part in these hyperbolic claims of a "revolutionary," "breakthrough" device that will "reinvent" the phone, and it would be inaccurate to say that those claims had no influence on the public perception of the iPhone and its legacy. But they were also part of a very intentional process of image-making: Goggin notes that "the iPhone does not present itself as an adaptation: Apple professes to be utterly changing the mobile —at least in its promotional literature," an idea borne out by the representation of the device as such a dramatic break from past mobile phones.[202] Jobs spoke to the present state of mobile phones—particularly, the fragmented smartphone market—in the US during his presentation, with emphasis on the affordances that made most contemporary smartphone models "not so smart" and which the iPhone was prepared to solve through its radical new interface and

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201. *MacWorld Keynote*, 2007, 1, http://archive.org/details/MacWorld-Keynote:25–3:00.

202. Gerard Goggin, "Adapting the Mobile Phone: The IPhone and Its Consumption," *Continuum: Journal of Media & Cultural Studies* 23, no. 2 (April 2009): 233, https://doi.org/10.1080/10304310802710546.

design.[203] Everything about the iPhone's debut emphasizes its dramatic break with the material nature and functionality of the mobile phones as they were experienced in the United States in 2007.

The iPhone may be a strange note to conclude this dissertation on. While it would eventually would go on to become wildly popular in the United States, outselling phones running Microsoft's Windows Mobile operating system in 2009[204] and moving on to a back-and-forth battle with Android handset manufacturers (usually Samsung) to claim the title of most handset units sold throughout the second decade,[205] the iPhone did not actually launch in Japan until 2008.[206] And despite Steve Jobs's claims of the inadequacy of existing mobile devices, this revolutionary, breakthrough smartphone—or indeed, any smartphone, period—would not attain the same popularity in Japan until 2012, four years after its release in the country.[207]

While this dissertation is primarily concerned with the years from 1997 to 2007, the trends of *keitai* and smartphone continue to lead us to the present day, in which the keitai is viewed in the United States as a "failure" (and often conflated with the arguably more dismal experience of the feature phone in the U.S.) and the smartphone has become the dominant

203. *MacWorld Keynote*, 3:28–6:00.

204. Prince McLean, "Canalys: IPhone Outsold All Windows Mobile Phones in Q2 2009," *AppleInsider* (blog), August 21, 2009, https://appleinsider.com/articles/09/08/21/canalys_iphone_outsold_all_windows_mobile_phones_in_q2_2009.

205. "Gartner Says Worldwide Smartphone Sales Declined 5% in Fourth Quarter of 2020," Press Release, Gartner, February 22, 2021, https://www.gartner.com/en/newsroom/press-releases/2021-02-22-4q20-smartphone-market-share-release.

206. Takashi Takebayashi, "Softbank and Apple to Bring IPhone 3G to Japan on July 11," Press Release, Apple, July 9, 2008, https://www.apple.com/newsroom/2008/06/09Softbank-and-Apple-to-Bring-iPhone-3G-to-Japan-on-July-11/.

207. Sarah Radwanick, "In Japan, Smartphones Surpass Feature Phones among Newly Acquired Devices for First Time Ever," Press Release, Comscore, Inc., April 12, 2012, https://www.comscore.com/Insights/Press-Releases/2012/4/1-in-5-Mobile-Phone-Users-in-Japan-Now-Owns-a-Smartphone.

paradigm of 'mobile media'. In reality, the smartphone and keitai managed to coexist for some number of years—in fact, DoCoMo announced in 2019 that it will discontinue i-mode, along with its 3G FOMA service, at the end of March 2026.[208] And despite steadily decreasing numbers with the release of 3G keitai services, Softbank's Y!Mobile PHS service finally ended in January of 2021.[209]

This chapter will conclude the dissertation by addressing the release of the iPhone in 2007 and its relationship to the keitai. The use of the iPhone as an anchoring device for this dissertation is not meant to imply a direct technological continuity between the keitai and the iPhone, nor is it intended to be an analysis of 'the success of the iPhone'. Instead, the iPhone represents a moment of closure—not immediate, and not inevitable or fore-ordained, but as a point of rupture and discontinuity in established discourses of mobile media.

<div align="center">"A Revolutionary Mobile Phone"</div>

During his MacWorld keynote speech, Steve Jobs repeated the phrase "an iPod, a phone, and an internet communicator" to draw attention to the iPhone's convergence of the three discrete technologies (arguably its most compelling feature in its first year before the launch of the App Store). But these phrases also function genealogically, calling back to the technologies from which the iPhone inherited its meaning. The reference to three familiar technologies—the ubiquitous phone, Apple's successful iPod portable media player, and the less-distinct-but-still-imaginable portable communication device (likely most familiar to consumers as a sort of Internet-enabled PDA)—helped to shape expectations as to the possible functionality of the device. It was not, practically-speaking, all that different from numerous other convergent,

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208. "FOMA oyobi i-mōdo no sabisu shūryō ni tsuite (「FOMA」および「i モード」のサービス終了について)," Press Release, NTT Docomo, October 29, 2019, https://www.nttdocomo.co.jp/info/news_release/2019/10/29_00.html.

209. "PHS 25-nen shi (PHS25 年史)."

transitional smartphones on the market, but this framing as the end result of three distinct,

historical lineages situated the device for the audience in a way that was immediately familiar.

This remediation of these familiar technologies, in a single device that promised to transcend the

current miseries of the mobile media experience in the United States, was certainly appealing.

And yet Kim writes of the iPhone's launch in Japan in 2008 that "an inspirational reaction

that was able to be called an 'iPhone boom' never happened in Japan, because the iPhone was

neither fresh nor 'smarter' than keitai they had been carrying around for more than a decade."[210]

Writing in 2017 about Japan's eventual acceptance of the iPhone, Byford states that "there was

no infrared port, the most common way to exchange contact details IRL at the time….The Safari

browser was literally too good—it couldn't load Japanese C-HTML mobile websites or services

like NTT Docomo's i-mode portal, which essentially amounted to a fork of the entire web. The

camera couldn't focus on QR codes, which were frequently used to launch said websites. There

was no Felica NFC for mobile payments. There was no TV tuner."[211] In other words, the iPhone

had no appealing features for those who had taken up the keitai at some point over the past

decade. How then do we reconcile this strange situation, of the more advanced mobile media

eventually fading into obscurity, while the more-hyped but initially less functional device went

on to become a global smash hit?

One explanation that is occasionally offered for the 'failure' of Japanese phones to sweep

the globe is the notion of "Galapagos syndrome." The term first appeared in business

publications in the late 1990s to describe the intensely local specialization of Japanese

information and computing technologies (as a result of the specific adaptations that had to be

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210. Kyounghwa Yonnie Kim, "The Everydayness of Mobile Media in Japan," in *Routledge Handbook of New Media in Asia*, ed. Larissa Hjorth and Olivia Khoo (New York, NY: Routledge, 2016), 446.

211. Sam Byford, "How the IPhone Won over Japan and Gave the World Emoji," *The Verge* (blog), June 29, 2017, https://www.theverge.com/2017/6/29/15892640/iphone-anniversary-japan-success-emoji-history.

made to tailor the foreign-developed devices to Japanese users, as discussed in Chapter 2), in an allusion to the varieties of finches discovered by Charles Darwin in the Galapagos archipelago. The Japanese mobile phone industry was one specific target of this epithet, as early mobile phones were incompatible with most international wireless carriers, and the phones themselves featured specific services through domestic carriers which were not present in developing mobile networks outside of Japan.[212] Especially in the context of the burgeoning popularity of American-developed smartphones, the Japanese mobile phone is often portrayed as a failure on account of the inability to expand to global markets.[213] However, not only does this sort of dismissal presume that Japanese carriers were interested in expanding their reach globally in the first place, it also minimizes the incredible domestic popularity of the keitai, ignoring the decade or so in which Japanese mobile technology was leaps and bounds ahead of mobile development in the rest of the world. In addition, framing of media in terms of success or failure on some arbitrary market is a rubric that is entirely irrelevant to the genealogical project of attending to the development of historical discourses and drawing out the descents and emergences that trouble the linear arrangements of history. While the keitai denwa did not overtake the iPhone on the global stage, it may be best to not frame the two artifacts as if they were in competition at all. The iPhone emerged in response to the state of mobile media in the United States, and successive releases would adopt more expected affordances of mobile media whose relevance or usefulness were first negotiated in the keitai denwa.

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212. Atsushi Akiike and Sotaro Katsumata, "What Was the Galapagos Ke-Tai?," *Annals of Business Administrative Science* 17, no. 5 (October 15, 2018): 227–40, https://doi.org/10.7880/abas.0180912a.

213. Hiroko Tabuchi, "Why Japan's Smartphones Haven't Gone Global," *The New York Times*, July 19, 2009, sec. Technology, https://www.nytimes.com/2009/07/20/technology/20cell.html.

Limitations and Avenues for Future Scholarship

No work of scholarship can—nor should—go without acknowledging the fundamentally incomplete quality that is part of the nature of any academic endeavor. This dissertation not only includes areas whose depth or scope were compromised by contingency (as described somewhat in Chapter 3, the more prominent example) but also threads—perhaps I could call them "lines of flight" in accordance with a more Deleuzian approach that would seem appropriate—that reach out (rhizomatically?) to future directions of research or connections to existing bodies of scholarship. The scope of this dissertation encompassed a variety of subjects across a number of disciplinary fields, all of which would be well-suited to further investigation, especially with greater access to primary sources. One of the largest challenges—and a point to note, in keeping with the orientation of "Asia as method," is that very few of these areas are not studied *at all*; on the contrary, there are likely large bodies of existing works in Japanese on all of these areas. Any claims of "insufficiency" in terms of a scholarly oeuvre should be taken to refer to work in the English language.

As I discussed in Chapter 3, much of the intended scope of this dissertation was limited by access to materials, resulting in a project that was ultimately, in my opinion, compromised as to the potential depth of its investigation. While I believe the arguments put forth in this dissertation remain valid despite the relatively small amount of sources consulted—as contemporary sources, they represent actually-existing discourses regardless of the actual number—a greater number or variety would allow for greater claims as to the representativeness of the materials, as well as provide a much more complete picture of the variety of discourses that may have been circulating at the time.

Chapter 2's focus on the conditions of possibility that produced the keitai denwa offers a number of areas for continued scholarship. The history of the post-war telecommunications industry in Japan was presented in a somewhat brief form by necessity, but a more comprehensive English-language history of state involvement, infrastructure development, and private telecommunications carriers would not only address one of many lacunae in English scholarship on Japanese media, but would also then make possible other avenues of research that could build off of that information. Figure 5.1 shows the development of the Japan's telecommunications industry since the founding of the Nihon Telephone and Telegraph Public Corporation up to the contemporary landscape dominated by the NTT, KDDI, and Softbank Groups (along with recent entry the Rakuten Group). As the density of the image shows, there is significant opportunity for the investigation of the various mergers, acquisitions, and divestitures; the area of "political economy of Japanese telecommunications" would seem to be a wide-open field.

While there is an existing and thorough body of scholarship concerning science and technology in Japan, much of the English language work is largely focused on the postwar development years and the "economic miracle" up through the 1980s; there is little work in English covering the 1990s or later. The growing interest in de-centering the American experience in global Internet studies has led to a greater focus on the Internet experiences of other nations, particularly ones for whom the Latin alphabet is not the primary form of written communication. The history of the Internet in Japan, as with many other countries, is incredibly rich, with the initial development and deployment being done by academic researchers who initially wanted to connect the computer networks of different Japanese universities, and there is a significant amount of historical development that is absent in English narratives.
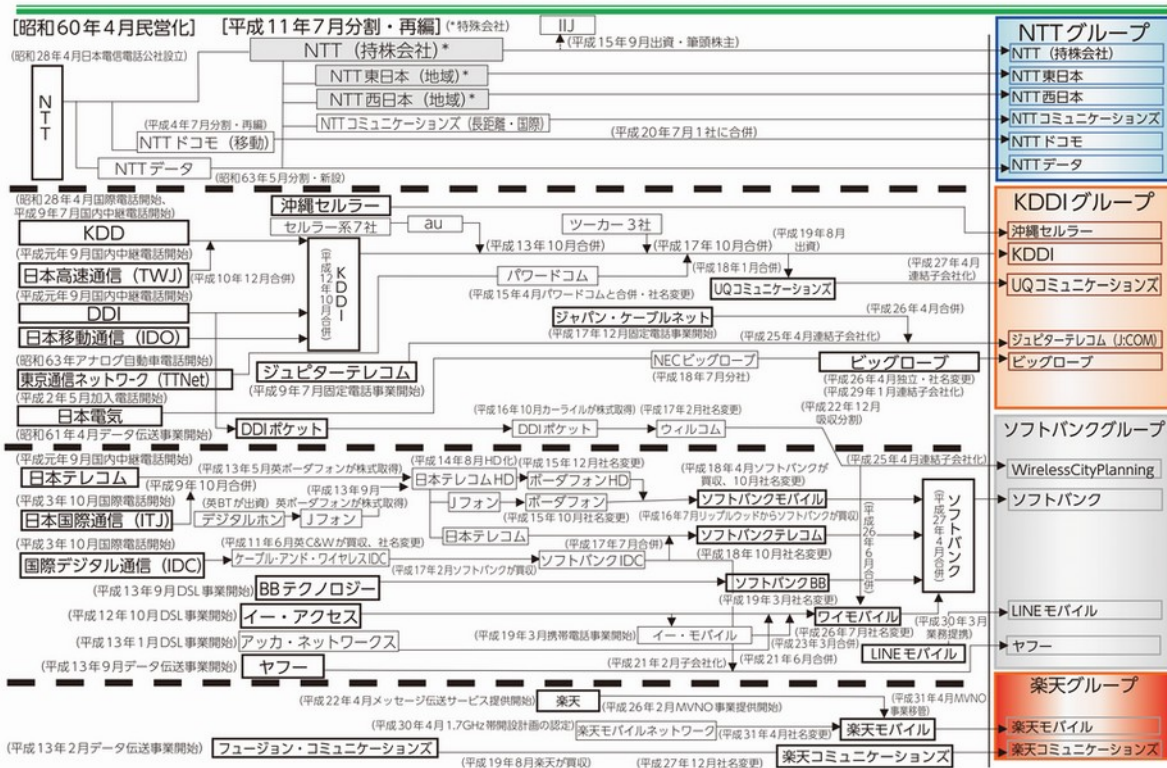
Figure 5.1: "Important changes in the domestic telecommunications industry." Ministry of Internal Affairs and Communications (Sōmushō), accessed August 20, 2023, https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r01/html/nd231720.html.

The documentary sources used in Chapter 4 are of course another possibility of continued research, as I have discussed before. Access to archives in Japan that would carry a larger number of magazines, mooks, newspapers, and even books published on the phenomena of the keitai denwa (or mobile media more broadly) would make for a more sophisticated analysis of discourses and popular trends. Much of this material is difficult and/or costly to obtain within the United States, and as mentioned before, there is the significant problem of *discovery*—of being able to even know what materials are available—that is all but impossible to address from a distance. In addition to access to these materials themselves, a sustained research trip to Japan could open up the possibilities of a more qualitative, anthropological dimension to any continued work through conducting interviews, etc.

NTT DoCoMo's i-mode platform is a significant background component to a number of

the discussions throughout this dissertation, but it has not been the focus of any of them. There is

a significant amount of scholarship on i-mode, in English, in the fields of business and

management where it is frequently discussed in terms of its successful growth and innovation in

the monetization of content. Several of the developers of i-mode have also produced business

memoirs of their involvement with the project—Mari Matsunaga chronicled her role as a non-

technical person suddenly recruited to develop i-mode's content strategy,[214], and Takeshi Natsuno

has written two widely translated books on the business development of the i-mode

ecosystem[215],[216]—which may contribute to its popularity among business discourses. Mark

Steinberg's *The Platform Economy* ostensibly addresses, per the book's subtitle, "how Japan

transformed the consumer Internet," but it instead is more focused on discourses of platform

economics and the commodification of content. The i-mode platform bears many similarities to

the French Minitel system, as explored most notably in Julien Mailland and Kevin Driscoll's

Minitel: Welcome to the Internet (a book that this dissertation owes a considerable debt of

inspiration to). The corporate (or state, in the initial case of Minitel) ownership of the network

infrastructure and emphasis on third-party content is a similar strategy employed by both Minitel

and i-mode.[217] A project focusing on i-mode from a platform studies perspective—and not

business or management theory—would be a significant addition to the growing body of

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214. Mari Matsunaga, *The birth of i-mode: an analogue account of the mobile internet* (Singapore: Chuang Yi Publishing, 2001).

215. Takeshi Natsuno, *I-Mode Strategy* (Hoboken, NJ: Wiley, 2003).

216. Takeshi Natsuno, *The I-Mode Wireless Ecosystem*, 2004, https://nbn-resolving.org/urn:nbn:de:101:1-2015020910551.

217. Julien Mailland and Kevin Driscoll, *Minitel: Welcome to the Internet*, Platform Studies 8 (Cambridge, MA: The MIT Press, 2017).

literature on alternative networks that managed to achieve incredible popularity outside of what has been traditionally considered "the Internet."

Finally, the period of time covered in this dissertation intentionally leaves space for further work on mobile media in the 21st century. As discussed in this chapter, the iPhone's release, despite being framed as a moment of revolution against existing standards of mobile media, did not lead to its immediate success; the iPhone first needed to adopt the developments the keitai had pioneered in the previous decade. But this period of adaptation when the smartphone paradigm represented by the iPhone and Android devices grew closer in functionality to what made the keitai so successful offers a fascinating possibility for continuing research from a media genealogy standpoint, to see what sorts of further emergences and descents occurred in the intervening years, and how "mobile media" as a discursive formation has been further solidified.

<div align="center">Conclusion: "Historically Minor" Platforms</div>

Benjamin Nicoll writes of the term "historically minor" as "a heuristic device…to gain a more nuanced perspective on what normally passes as failed, forgotten, or marginal."[218] The keitai denwa, at least in Japan, is hardly failed or marginal, but it is easy for it to appear so in the period of global dominance of the California-designed smartphones. However, the keitai was many things—it was a domestic adaptation of information and communications technologies that, in a rare example, was developed in Japan according to the needs and expectations of Japanese users, and not a foreign technology that had to be adapted—language and all—to domestic uses (or, as was more likely, domestic uses would have had to adapt to the foreign technology). And as seen in the previous chapter, the keitai was a fluid discursive formation that changed specifically over the course of a decade, in terms of who was expected to use it and what it was expected to be

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218. Nicoll, *Minor Platforms in Videogame History*, 17–8.

used for. At the same time, discourses of keitai set it distinctly apart from other mobile media of the day, and its convergent affordances that have re-appeared in the smartphones that are now used globally. The various forms, technologies, and intended uses of the keitai denwa were all part of the process of negotiation of the meaning of mobile media, which has arguably reached a point of closure and relative stability. But as Foucault stated,repeated from Chapter 1, "we should avoid thinking of emergence as the final term of a historical development"[219]—a genealogical approach to media history recognizes that there is always the potential for future emergences, or to uncover descents in the most seemingly-unique new media artifacts.

This dissertation's investigation of a period of the keitai denwa's history joins with other, similar approaches that have been concerned with alternative histories of the Internet and information and communications technologies. Histories of the mobile phone in general are arguably inseperable from Internet histories, and in the case of the keitai denwa this is especially true since the 1999 release of the i-mode platform, which arguably did more to popularize the Internet in Japan than the personal computer. Through the 2010s, the prevailing histories of the Internet have been monolithic in nature, and largely focused on the American experience, which has the consequence of locating the Internet in specifically American historical terms. Janet Abbate's *Inventing the Internet* was one of the earliest and most extensive works of Internet historiography, but its general focus on the American academic, government, and military collaboration that produced the ARPANET, NSFNET, and eventually the privatized Internet backbone resulted in a history that overlooked many of the international experiences of the Internet outside of collaboration on common standards.[220] The 2010s saw an increase in attention to both alternative histories of the Internet (exemplefied by, but not exclusive to, the 2017 launch

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219. Foucault, "Nietzsche, Genealogy, History," 83.

220. Abbate, *Inventing the Internet*.

of the *Internet Histories* journal) as well as attention to alternative network structures that served similar social and cultural functions.

Benjamin Peters' *How Not to Network a Nation: The Uneasy History of the Soviet Internet* asks the question: given comparable technology and ambition, how is it that a project like the ARPANET (and the subsequent Internet) failed to develop in the Soviet Union around the same time?[221] The title and the central premise illustrate the primary tension among many alternative histories of the Internet in they way they continue to frame—either simply through their titles or to a more significant degree through their conceptual hook—these computer networks as failed, incomplete, or inconsequential attempts to compete with or produce the Internet we know today. "The Internet" itself remains presented in a normative fashion in relation to which all other networks are conceputally subordinate. Julian Mailland and Kevin Driscoll's *Minitel: Welcome to the Internet*, one of the formal inspirations of this project, focuses on the French state-run Minitel network from its inception in 1982 through its closure in 2012, and despite the implications of the title—Minitel wholly separate from the Internet—does focus on the practices and cultural meanings of the Minitel network on its own terms.[222] Driscoll's more recent work *The Modem Web: A Prehistory of Social Media* operates similarly in its investigation of pre-Internet dial-up bulletin board services, yet also positions itself in relation to the contemporary Internet as a "prehistory" of social media.[223] While these studies all offer fascinating and in-depth explorations of their individual subjects—regional networks (or attempts to build them) that fall outside of what has been previously demarcated as the capital-H

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221. Benjamin Peters, *How Not to Network a Nation: The Uneasy History of the Soviet Internet* (Cambridge, Massachusetts: MIT Press, 2016).

222. Mailland and Driscoll, *Minitel*.

223. Kevin Driscoll, *The Modem World: A Prehistory of Social Media* (New Haven, CT: Yale University Press, 2022).

"History of the Internet"—the attempts to tie them in with this History invariably create the conditions for thinking of these networks as "failed" and dismissing them as such. In the inaugural issue of *Internet Histories*, Abbate calls for new ways of framing the topic of "the history of the Internet," which raises the point of a better need to define just what the *Internet* is —if it is to be exclusively characterized by its technical features, its social dimensions, its local experiences in the context of the global network, etc.[224] In reference to the dominant conception of the Internet as tied in with American histories of information and communications technologies and military projects, Abbate both warns of the histories that are excluded from this view and argues for an approach to Internet historiography that treats the Internet as a less technologically-determined phenomenon:

> Histories that focus on the dominant players, those with the resources to create expensive new technologies, run the risk of privileging their visions in a contemporary Internet system that has, and should take into account, a much broader scope and constituency. Definitions that locate the defining features of the Internet in situated social practices can help challenge the claim of hardware- and software-builders to speak for the Internet.[225]

The alternative Internet histories above all share a common feature of focusing on the social and cultural features of these networks—while the enabling technology itself is not disregarded entirely, it is also not the central focus as in the case of much of the dominant Internet history, which frequently takes the Great Man (and Great Technology) approach to historiography. All of these alternative networks share in Nicoll's investigation of the "historically minor" in that they could be considered failures, dead-ends, or marginal within the *épistémè* of dominant Internet history. This dissertation's focus on genealogy as method—as well as these other works, whether they situate themselves within a genealogical framework or not— all reject the zero-sum formation of winners and losers, especially given that many of these other

224. Janet Abbate, "What and Where Is the Internet? (Re)Defining Internet Histories," *Internet Histories* 1, no. 1–2 (March 28, 2017): 8–14.

225. Abbate, 6.

networks enjoyed significant success within their respective milieus and time periods. Driscoll and Paloque-Berges, without explicitly framing these approaches within a archaeological/genealogical methodology, still acknowledge Foucault's influence in "the epistemological reflexivity of critical historiography [which] may reveal unacknowledged power relationships embedded in our knowledge of the Internet's past. We should raise doubt about the prevalence and ubiquity of the Internet as a 'winner' by interrogating how we understand the process of technological diffusion and its narration.[226]

The keitai denwa, as a historically minor platform in the dominant narratives of Internet and media history, stands alongside these other examples of critical Internet historiography and contributes to the destabilization and rejection of the dominant, deterministic mode of American-centered Internet history. This dissertation, in its focus on the keitai, provides one further way of understanding the proliferation of local and regional networks in the late 20 century that emerged alongside the PC-based Internet, and contributes to the understanding of the specific social and cultural needs and expectaitions embedded within these networks. At the same time, as this narrative of the keitai denwa shows, these alternative histories often had the additional effect of creating larger expectations as to the meanings and uses of their respective media technologies, producing ripples that spread far beyond their limited geographical areas.

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226. Kevin Driscoll and Camille Paloque-Berges, "Searching for Missing 'Net Histories,'" *Internet Histories* 1, no. 1–2 (April 18, 2017): 2.

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