

**Before the
Federal Trade Commission
Washington, D.C.**

In the Matter of)	
)	
Competition and Consumer)	Project Number P181201
Protection in the 21st Century)	
Hearings)	

**Topic 2: Competition and consumer protection issues in communication,
information, and media technology networks**

Comments of Mark A. Jamison

Following are the comments of Mark A. Jamison, Ph.D., on the topic of competition and consumer protection issues in communication, information, and media technology networks. I am a Visiting Scholar with the American Enterprise Institute and Director and Gunter Professor at the Public Utility Research Center, Warrington College of Business, University of Florida. While I am honored to have these affiliations, my comments are my own and may not reflect the views of the American Enterprise Institute, the Public Utility Research Center, or the University of Florida.

Disclosure statement: I provided consulting for Google in 2012 regarding whether Google should be considered a public utility.

Introduction

Competition and consumer protection in communication, information, and media technology (hereafter, CIM) markets are different from those in more traditional markets. The rapid pace of change makes market boundaries inherently unstable. Furthermore, the nature of competition is different than before: Historically studies focused on rivalry in markets for products, but now industry dynamics are driven by changing conditions in the network of firms that is characterized by both synergism and rivalry. And where traditional industries competed for customers' budgets, participants in today's CIM sectors compete for consumers' time and attention, resulting in competitive pressures being felt between providers of products and services that would not appear to be substitutes. Finally, the changing technologies change the economics of decision-making and the economics of adaptation, putting in flux traditional business boundaries.

I explain each of these below.

Change and Data Decay

Historically antitrust has analyzed competition based on analyses of markets. (Baker 2007) Hauge and Jamison (2016) explain that this approach fails in times of constant change, such as is the case in CIM sectors. How dynamic are they? Myspace led social networking for seven years after launching in 2003. But in 2010, 70.3 million people chose to visit Facebook — 100,000 more than visited Myspace — and these customers made Facebook the number one social platform. (Albanesius 2009) But even though Facebook has now led for a number of years, 2010 data about Facebook markets are nearly irrelevant today as Facebook 2018 is not the same Facebook of 2010: Numerous innovations have changed the nature of what it provides its users and customers. Said differently, the Facebook of 2010 would lose to the Facebook of 2018 if they were in competition.

To further illustrate, in 1998 Fortune magazine declared that Yahoo! had won the search wars (Stross 1998) and was on its way to becoming the next America Online. Within a few years, customers proved this accepted wisdom wrong. Google served customers better than Yahoo! and American Online's current performance isn't something to which other companies aspire. Not only has industry leadership changed, but Google search of the early 2000s is not the Google search of today. Neither are the rivals the same: Google search now competes with Microsoft and with numerous apps provided by Yelp, Facebook, etc.

Because demand, supply, and products are constantly changing, the historical data that underlies traditional analyses degrades quickly, possibly resulting in harmful regulatory decisions that rely upon it. (Hauge and Jamison 2016) As I discuss more fully in my comments on Topic 3, a more appropriate approach to assessing whether there is market power is to examine whether the supply meets three conditions: (1) At least one resource used in providing the service in question is essential to providing rivalry over

multiple generations of a service, (2) At least one such essential resource is by its nature in limited supply and is fully occupied by a single firm or small number of collusive firms, and (3) That effectively unique and essential factor is endowed to rather than developed by the firm or firms. If these three conditions are met – and if the product in question is effectively necessary for customers to participate in a modern economy – then a firm is likely to be able to exploit customers and regulatory remedies could be useful. To be beneficial, remedies must also be practical, not create opportunities for rent seeking or limiting competition, and pass rigorous cost-benefit analyses.

This may sound like the essential facilities doctrine, but it has at least two important differences. One difference is that resource is essential across product generations rather than just for a current situation. This multigenerational requirement is important because too often in this space regulatory action occurs when markets are already moving on, causing unproductive costs and perhaps hindering innovation. The European Union’s actions against Microsoft’s Internet Explorer and Media Player are examples.

Networks of Synergism and Disruption

Not only is a market-based analysis subject to problems of data decay, it also misses a key feature of rivalry in CIM sectors, namely that firms disrupt and provide synergies to each other’s business models through networks of relationships.

Rivalry in CIM is better characterized as synergism and disruption through networks of relationships than by competition market by market. Consider how MarketLine (2018) identifies key competitors for five companies that often identified as characterizing the tech industry: Alphabet Inc. (Google’s parent company), Amazon, Apple, Facebook, and Microsoft. Figure 1 summarizes MarketLine’s view (Jamison 2018a).

As I explain in Jamison (2018a):

“The arrows show the directions of competitive pressure. For example, the one-directional arrow from Amazon to Microsoft shows that Amazon provides competitive pressure to Microsoft. The two-way arrow between Facebook and Alphabet shows that they provide competitive pressure to each other. The arrows emanating from companies in plain text, such as Red Hat and IBM, show to which of the five companies these other companies provide pressure. I omit any competitive pressures going to the companies in plain text.”

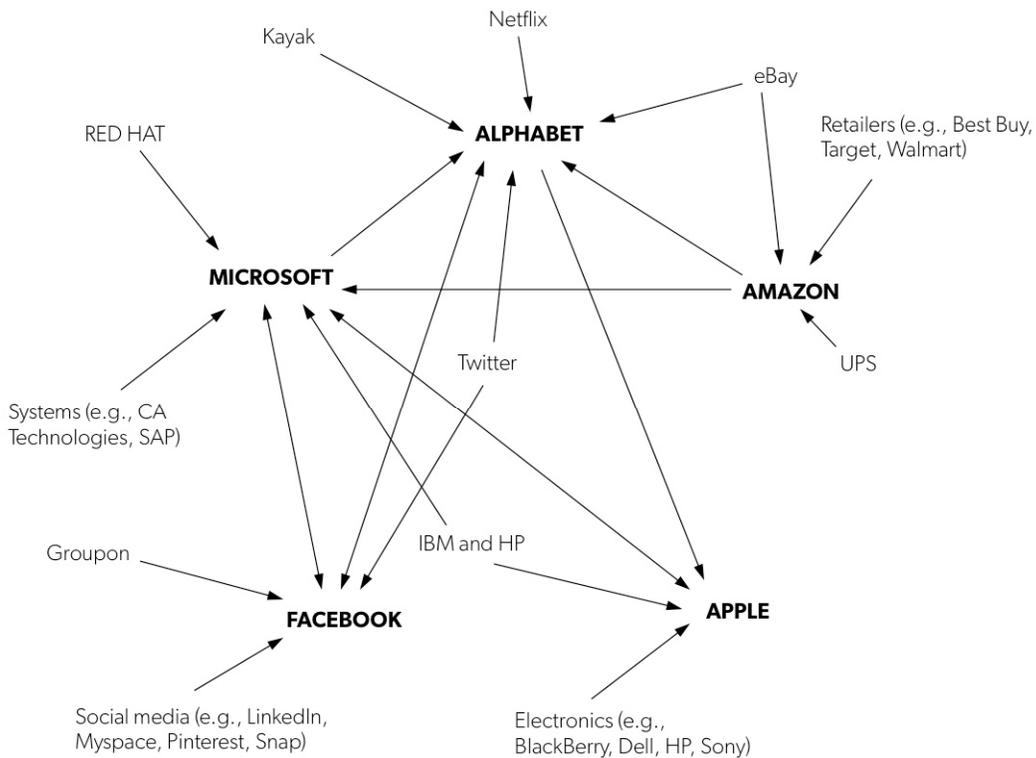


Figure 1. Competitive pressure map for Alphabet, Amazon, Apple, Facebook, and Microsoft. (Sources: MarketLine and author)

What can be concluded from Figure 1? As I explain in Jamison (2018b), “Today’s firms in the tech space interrelate along threads that link with multiple companies and customer groups and evolve over time.” In an earlier writing (Jamison 1999), I referred to this as multilateral rivalry. A better name might be network synergism and disruption. Linkages in Figure 1 represent disruption, i.e., companies adversely affecting other companies’ plans and aspirations. I omitted from Figure 1 linkages could be drawn showing synergism. For example, Facebook’s growth resulted in part because of the success of Apple’s iPhone.

Viewing firm relationships in a network context shows the inadequacy of relying on market-by-market analyses. If MarketLine is correct in its investigation, the disruption that Alphabet provides to Apple, for example, might be missed (as was the case with the European Union’s recent analysis (Jamison 2018c)), as would be the synergism that Apple provides to Facebook, and how Facebook’s and Apple’s relationships with Microsoft and Alphabet affect their relationship.

This is an under researched area in economics. Further work is needed to understand how competition and synergism in business models works, how to understand

the welfare effects for customers, and how to understand and address anticompetitive conduct that results in consumer harm.

Competition for Time and Attention

Much of the rivalry among firms in CIM is a rivalry for resources. As I explain in Jamison (2018b):

Consumer time and attention are sought-after resources. So are information, knowledge, and understanding, which today are being augmented with artificial intelligence. Companies accumulate these resources to launch what happens next. The companies that accumulate the most have an earned advantage over rivals. The advantage is earned and benefits customers because the prospect of gaining the advantages gives companies a strong incentive to compete for the future.

This rivalry exists even if products and services do not appear to be substitutes in a traditional market-by-market analysis. Firms in this space monetize user time and attention largely through selling advertising, but also by leveraging intergenerational network effects, as I explain more completely in my comments on Topic 3. The competition for time and attention is intense as it is the space within which firms can put ads in front of users. Also, the time users spend with a service generates data that the service provider then uses to better target ads and develop next-generation services.

Changing Economics of the Boundaries of the Firm

Since Coase (1937), economists have understood that the boundaries of firms depend on the nature of transaction costs. In some instances, it is less costly to hire people to perform a task, such as perform security services, than to outsource it. But other times the reverse is true. North (2005) adds a time dimension to Coase's insight by explaining that, when circumstances change, firms that survive must adapt. Hauge, Jamison and Jamison (2018) take this a step further, explaining that adaptive changes can be costly and so affect which firms make transitions and which do not. An implication of this research is that changes in contracting costs and to adaptation costs shape the boundaries of firms, and thus competition. Still missing from this research are considerations of customers' costs of adaptation and a synthesis of the Coase, North, and Hauge et al. insights.

Two recent changes in digital technologies are affecting contracting and adaptation costs, and thus the boundaries of firms. One technology is blockchain, the innovation that enabled bitcoin. In some circumstances blockchain promises to lower costs of tracking, validating and securing data, and of making data available for analysis. This is happening not only within firms, but across firms. For example, the cryptocurrency Ripple is serving as a platform for certain cross-country currency transactions. In some instances, blockchain is empowering the gig economy. For

example, AirBnB has invested in blockchain. (Lannquist 2018) On the other hand, Ripple's application currently preserves at least some existing structures in the financial sector while potentially destroying others.

The other technology that can change industry boundaries is artificial intelligence (AI). AI changes the loci of decision making and its effectiveness. (Garimella 2018; Agrawal, Gans, and Goldfarb 2018) AI and humans thinking function differently and so can be complementary. AI makes predictions based on modeling of information about historical outcomes. Humans make decisions by processing selected information through mental frameworks, heuristics, biases, and norms that have developed over time. AI can enable greater shared decision making by customers and suppliers, mirrored decision making across rivals, and the like. It can also lower the costs of human decision making, thus changing transaction costs.

And there are synergies between Blockchain with AI. (Garimella 2018) Blockchain lowers the costs of clean data essential for AI, making AI more economical. And since customers and suppliers can share blockchains, as can rivals, blockchain expands the types of data available to AI systems.

These new economic realities have conflicting effects. On the one hand, some blockchain applications shared by firms and their customers, which could strengthen ties between supplier and customer. Smart contracts could also tighten this tie by intertwining supplier and customer operations and finances. But in contrast, blockchain and smart contracts can lower contracting costs, which would increase the amount of outsourcing.

How should competition regulators respond? By treating what is seen today as a prologue to the more important competition, which is for what happens next. A lesson from telecommunications deregulation is that regulators and industry alike are unable to reasonably predict how changing technologies and economics will shape an industry. The breakup of AT&T was based on an assumption that local telephone service and long-distance service were inherently separate. This was wrong. There was also an assumption that wireline service would remain dominant and monopoly. This was also wrong. And there was an assumption that competition would be for voice services. This, too, was wrong as the competitive race quickly morphed into competition to effect digital networks that were initially agnostic with respect to applications, but that are now differentiating according to service needs.

Conclusion

In these comments, I examine how digitalization is changing CIM sectors and the implications for competition, synergies, and regulation. While there remain many known unknowns, it appears clear that some of the tools of the past, including market-by-market competition analysis, are not well suited for CIM sectors in the future.

Respectfully submitted this 20th day of August, 2018.

Mark A. Jamison, Ph.D.
205 Matherly Hall
University of Florida
Gainesville, FL 32611
Telephone:
Email:

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