

Technology's Vital Few

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In recent years, technological advancements have yielded innovative products that have been embraced overwhelmingly by consumers. These advancements have, in the long term, consistently yielded oligopolies in the ensuing market competition. During the introduction and growth stages of new innovative products, the prevailing tendency seems to dictate the presence of multiple players who in turn inadvertently drive convergent trajectories for their products.

In the growth and maturation of the product, duopolies are then established, with many market players falling by the wayside, merging into one of the eventual market leaders, or simply breaking off in unassailable fashion to lead the pack. Interestingly, the competitive advantage provided by being the first to market company in new product categories does not seem to pan out in the long run.

Much has been written on the evolution of the personal computer (PC), with IBM revolutionizing the PC market with the IBM Model 5150 in August 1981. Stiff, sometimes brutal, competition followed for the next twenty-five years, with Microsoft - buttressed by various hardware vendor partners - and Apple emerging as market leaders in the eventual duopolistic market. Both companies have in the past been accused of employing aggressive tactics to stifle the competition, and in their current constitution, they are regarded as innovative and transformational. IBM exited the hardware business entirely in 2014 to return to its heritage in high-performance servers and software. This transformation has generally been viewed as successful, and IBM was somewhat fortunate, as trends have not always been kind to first movers.

Arguably, Yahoo! GeoCities, a service that allowed the free creation of personal websites, served as a predecessor to social media as we know it. Myspace, founded in 2003, created a social media platform that enjoyed unparalleled success until Facebook's subsequent launch, controlled growth, and aggressive global campaign eventually took the majority share of the market from Myspace. Today, the two major players of the social media market are undoubtedly Facebook and Twitter, while the rest of the competition is left to fight for morsels of the market. These two companies are known to be innovative and adapt easily to the changing needs of consumers. Myspace neither fully recovered nor pulled off a radical transformation as IBM did. Interestingly, Yahoo! GeoCities was finally shut down in 2019.

The mobile phone market has been remarkable in its evolution, innovation, and adoption. From the first cellular mobile phone created by Motorola in 1973, to the first smartphone created by IBM in 1992, to Apple's unveiling of the iPhone in 2007, a series of captivating products have subsequently led to two nascent market leaders from the perspective of operating systems: Google and Apple. Google leads with its Android OS – which it licenses to various hardware vendors, while Apple leads with its iOS operating system.

There are current competitive trends that show different companies jostling for market leadership in the technology industry. There is fierce competition in the chip-making industry, with Intel, AMD, Nvidia, and Qualcomm all working to bring the next-generation chipsets to the market. Notably, AMD has been making innovative moves in markets where Intel has been the established leader, including the PC market where AMD's Ryzen and Threadripper processors are gaining popularity. As industries begin to leverage the strengths of graphics processing units (GPUs) in machine learning and data centers, AMD and Intel are creating new GPUs in a market dominated by Nvidia and Qualcomm.

The COVID-19 pandemic has led to the emergence of working from home, and an increase in online shopping. There has never been a better time for e-commerce than the present. In this market, Amazon is well ahead of the competition, but companies such as Alibaba, Tencent, and Shopify are progressively capturing increased market share through evolutionary and strategic business practices.

As more people consume digital content from the comfort of their homes, movie and television shows delivery platforms pioneered by Netflix are seeing a significant increase in subscribers. Amazon Prime, Disney Plus, and YouTube Premium are notably encroaching on Netflix's leadership status.

Tesla continues to prove doubters wrong with the success of the various electric car models it produces. The company's cars can be described as computers on wheels, as the primary focus in the product development, save for the electric nature of the car's propulsion, is the computerization of as many parts of the car as possible. Tesla is currently competing against the automotive industry, challenging traditional approaches to manufacturing, supply chains, and distribution agencies.

Using historical trends of duopolies in the technology industry, would it be possible to predict future duopolies in current competitive markets? Perhaps. Deriving attributes that make up current duopolies and investigating the players in the current competitive markets to see if they have an abundance of these attributes would be one way to do this. Most notably, being innovative, employing strategic tactics to throttle the competition, and adapting to consumers' changing needs stand out in this article.

The employment of these attributes by any of the companies caught up in current competition would go a long way in ensuring their dominance and eventual leadership in their respective markets. One thing is sure – a vital few will always be left standing.



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Aaron is a senior analyst for BlackBerry QNX focusing on business systems and product release management. He has keen interest in the variation of business strategy in dynamic markets, as well as mental health challenges for young people. He also sits on the board of a children's mental health non-profit organisation.