

ARCS

OF

INNOVATION

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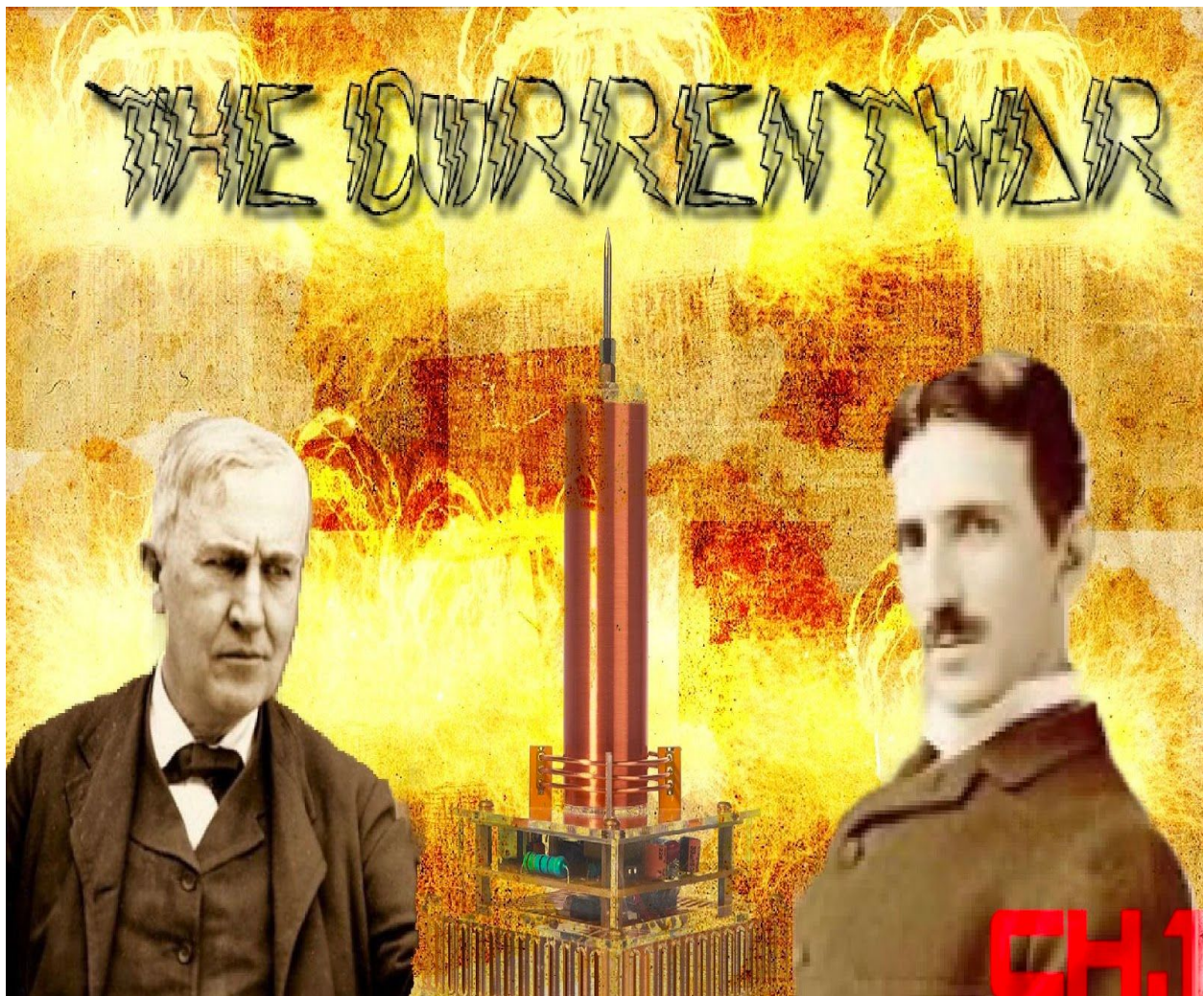
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INTRODUCTION

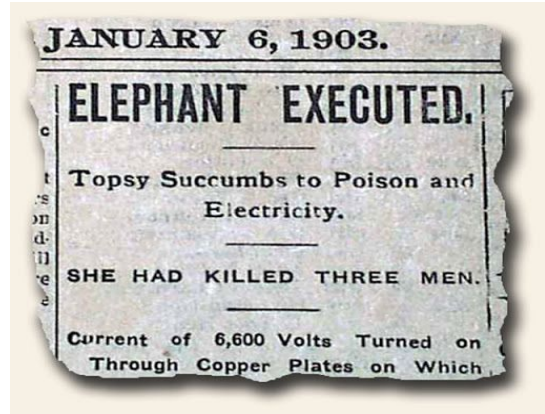
Innovation is a concept that has led to the rise of new industries and progresses for society from both a technological and cultural standpoint. To truly understand this concept it is important to analyze several historical arcs, a continuing series of events that gradually unfolds over time, that has led to societies' modern pushing of constant innovation for financial gains having many benefits and drawbacks on our culture. Analyzing these arcs where innovation was pushed to the forefront can help to see the power of those who develop these new industries gain as well as encouraging others to attempt to use this information to make their innovative ideas connect better with their consumers. Another point to look at is how the competition between companies in these new industries and how their interactions with each other over time have shaped everything from the way we consume products to how we as a society choose to advance. By analyzing the arcs of the most significant new industries of our modern era and how the concepts they have laid out have affected our society.

This will be done by looking at the way the media is used to help spread the ideas of innovative thinkers and helping to adapt their ideas spreading them into a creating new technological cultural normality. By looking at the arcs of these new industries and the decisions made by some of the most influential people of all time such as Steve Jobs, Thomas Edison, Mark Zuckerberg, and more, questions like how the media is used to help to spread the ideas of new technological advancements? What are the key

differences between being an innovator of something and being the inventor of something? Do big corporations hold back innovative progress? Lastly, can anyone start the next big billion-dollar company? Can be answered and can be used as a way to look at societies and understand the importance of innovation we preserve going forwards in life.



THE CURRENT WAR



(Figure 1- Features a newspaper article for an event created by Thomas Edison to show the dangers of Nikola Tesla's methods)

Industry defined as ‘within media studies’ describes the broad field of conditions and practices that play a role in the creation of media. Industry includes the “Immediate environment of production, but also mechanisms of distribution, the organizations that enable production (studios, labels, publishers, etc., as well as their conglomerate corporate owners), their workers, the policymakers and regulatory environment in which these entities operate, the mandate of media—typically either commercial or public service ends—and the technologies that are used in making media” (Havens and Lotz 2016). In the late 19th-century new electrical lighting technology created a new industry, giving the chance for both inventors and innovators in this field. Thomas Edison and Nikola Tesla would go to war over which electricity system, Edison’s direct current (DC) or Tesla’s alternating current (AC), would become the standard and dominate this new industry, although Tesla's AC current was a superior product to Edison’s DC current. Edison had profit motives, “The Rule of Capital over Labour and the Motives of the Capitalist.” The consideration of his private profit is the sole motive which determines

the owner of any capital to employ it either in agriculture, in manufactures, or some particular branch of the wholesale or retail trade.”(Marx's Economic and Philosophical Manuscripts of 1844) with his product while Tesla believed in giving his electricity away for free this would cause major financial backer J.P. Morgan the 19th-century multi-millionaire banking investor to back Edison. Tesla would eventually gain his backing financially from George Westinghouse who amassed his small fortune by inventing an instrument to replace derailed freight cars on train tracks. Now that both had major financial backers the war was on, leading to Edison creating his own version of AC current that would end up being used to power the East coast of the United States leaving his name forever synonymous with the electrical industry and becoming one of the most influential men of all time due to his work in bringing this new technology to the masses and Tesla being lost to history for almost 100 years.

Edison was able to win this competition by merging his ideas with those of Public relations consultant Edward Berney. “The successful businessman today apes the politician. He has adopted the glitter and the ballyhoo of the campaign with the sideshow, annual dinners that are a compendium of speeches, flags, stateliness, and pseudo-democracy slightly tinged with paternalism.”(Berney Propaganda 1927) Using the ideas of creating spectacles to manipulate public opinion is a tactic Edison would adapt to convince the public that Tesla’s version of electricity was dangerous with live demonstrations of Edison using Tesla methods to harm animals in front of large crowds, as seen in figure 1, creating false information and paranoia, thus giving Tesla a bad

public relations appearance, making the public untrusting of his technology. This shows the power of the media in writing history in favor of the winners.

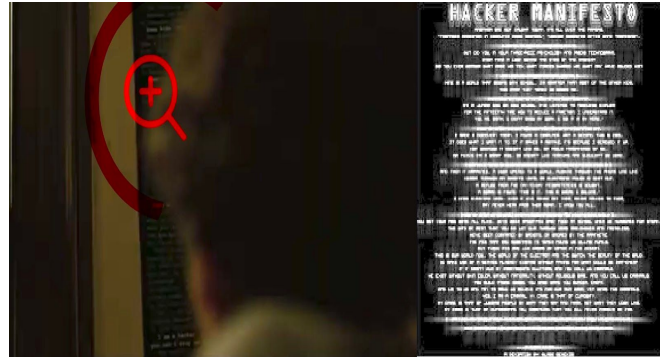
Although Edison did not invent AC current he was a major innovator of the technology. “According to the traditional definition, innovation is a new product, a new process, or a new organizational structure that enables an actor to be successful in the market.” Amongst others, the Nordic Innovations Center (NICe) has stressed the importance of a holistic viewpoint in terms of innovation, and has stated that research results and inventions can be translated into innovations only if they are closely interlinked with commercial interests and economic goals (cf. Nilsson-Andersen 2007).” Thanks to Edison’s innovations in this industry, today, due to his business practices, manipulation of the media is commodified, namely “The process whereby things, services, ideas, and people are transformed into objects for sale in a capitalist economic system.” It can also refer to the “Ways in which human practices normally considered to be outside the market, such as art, religion, or medicine, are being integrated into the capitalist marketplace.”(Keywords for Media Studies ch.13) This new industry shows the massive financial gains and legacy that can be obtained when a new industry is created, inspiring million to not just advance and innovate new technologies also giving it more of a chance for the technology to be used in everyday life. Even though Tesla was willing to give his more advanced technology away for free, due to the systems society had already constructed, like commodification and profit motives, it is highly likely that Tesla’s free electricity for all model would've to lead to technology not developing further; after it was given to people they would just accept what they were given because it was free and

not try to advance it further, halting innovations in this industry. Since Edison prevailed and we gained a system where any electrical operating system equaled large quantities of capital, causing millions to contribute to the industry setup and technology, in general, moving forward in search of becoming rich. Tesla sold one man's vision, while Edison sold an industry that made sure everybody in society could contribute rewarding innovations with capital.

The Author McKenzie Wark sees Edison and J.P. Morgan's being the victor of the current war as not a victory for capitalism but the death of it and the birth of something worse. Now that information and those that create new technology and industry could be viewed as more valuable than the materials, resources, and workers that manufacturers for these products, this event can be seen as the catalyst for the rising of a new class that can construct different and unrelated matters into previously unrealized relations.



THE RISE OF SILICON VALLEY



Figures 2 A poster from off of McKenzie Ward's novel *J cengt u'O cphguyq*" which is featured in Mark Zuckerberg dorm room in the 2010 film *Vj g'Uqekn'Pgy qtk*)

In the 2010 film *Vj g'Uqekn'Pgy qtm*, a film based on the rise of Facebook creator Mark Zuckerberg a scene features Zuckerberg's college dorm room which contains the easter egg of excerpts from McKenzie Ward's *Vj g'J cengt 'O cphguyq* on his wall as seen in figure 2. This Manifesto from 1986 came out while personal computers and the internet were in their infancy being introduced to the masses Ward saw innovation to computers as the birth of a new class. This is defined in the Hacker Manifesto "All classes fear this relentless abstraction of the world, on which their fortunes yet depend. All classes but one: the hacker class. We are the hackers of abstraction. We produce new concepts, new perceptions, new sensations, hacked out of raw data. Whatever code we hack, be it programming language, poetic language, math or music, curves or colorings, we are the abstracters of new worlds. Whether we come to represent ourselves as researchers or authors, artists or biologists, chemists or musicians, philosophers or programmers, each of these subjectivities is but a fragment of a class still becoming, bit

by bit, aware of itself as such.” (Ward Hacker Manifesto 1986) What Ward described as the hacker class would grow and heavily influence what would become the Venture Capitalists of Silicon Valley, a place where innovation would become valued over labor and material force and tactics of how these companies would compete would be developed.

Since the 1980s the largest venture capitalist, capital invested in a project in which there is a substantial element of risk, typically a new or expanding business, in the United States it is located in the southern part of the San Francisco Bay Area in Northern California this area is known as Silicon Valley because the area is famous for its computer technology, it is home to many of the world's largest technology companies including Apple, Google, HP, Intel, and Oracle. Over the years the area has become a hotbed for these tech giants developing the computing and web technology of the future to constantly clash over who can truly dominate these new industries using tactics much like Edison to gain the favor of the media for their product to prevail.

One of the most famous time this has been done was when Apple released the 1984 Super Bowl advertisement for their Macintosh personal computer this commercial was directed by Ridley Scott which coincides with father of public relations Edward Berney’s ideas of use of celebrity endorsements to gain favor with public helping he pushes his ideas of creating brands that “Modern business must have its finger continuously on the public pulse. It must understand the changes in the public mind and be prepared to interpret itself fairly and eloquently to changing opinion.” (Berney Propaganda 1927) This commercial set up the narrative that the Apple brand is standing up for freedom and

creativity while their rival at the time IBM was depicted after Big Brother from George Orwell's novel, Nineteen Eighty-Four (authored in 1949) showing that their competitor is controlling and holding back technological advancements for the people. This narrative is constantly used by these companies to help relate to their customers to make them feel that their brand is what's best for them and that they are taking part in technological advances that can help humanity. This is a tactic used by industry leader Microsoft when their founder Bill Gates in an interview with The New York Times, Gates, Microsoft's chairman, said that Google was "more like us than anyone else we have ever competed with." When discussing the success of the google search engine this led to the development of Microsoft's Internet search engine (a project code-named Underdog) showing how since the early 1980s how nervous the company was of losing their top. This shows Microsoft now adapting the tactic of another one of their competitors Apple to gain the trust of the public making them look like the underdog standing up to a threatening corporation.

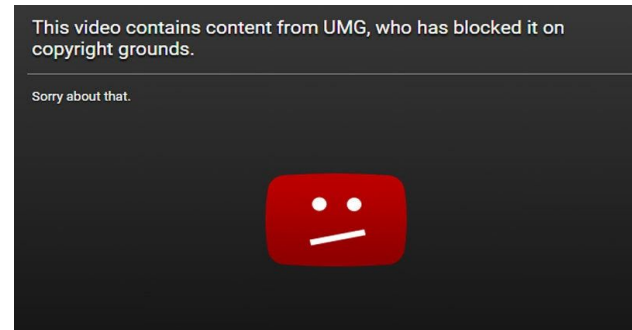
Although Google is at the top of their game they have also depicted themselves as the underdogs of the tech industry but this was not done by commercials but with their refusal to give in by founders Larry Page and Sergey Brin to sell their company when it first saw success. Conglomeration, defined as the formation of a large company by the merging of separate and diverse small firms, Is a practice that is common throughout the institution of Silicon Valley. This is seen in mergers such as Facebook purchasing Instagram for a Billion dollars in 2012 as well as eBay buying PayPal for 1.5 Billion Dollars in 2002. profits high. The constant need for these companies to acquire smaller

newer companies for their innovative ideas shows how much weight over other capitalist needs such as materials and labor force the internet has given ideas greatly expanding for technological advancement but “The only trouble with capitalism is capitalists. they’re too damned greedy.” (Herbert Hoover 1929)

Often the drive for control in these markets by major companies has the drawback of halting innovation to keep their place on top and make the most profit. This is done by using their influence and power to abuse systems put in place to make sure the marketplace stays fair. It is also done to protect ideas but oftentimes put new uses for these ideas in a box harming new uses for them.



COPYRIGHT AND PROGRESS



(Figure 3 Copyright takedown notification from video sharing site Youtube, owned by Google.)

In August of 2020, Epic Games decided to sue Apple with Apple's policy taking 30% of all microtransactions made from apps on their app store. They are also claiming that Apple's venture capitalism over the past decades has created a monopoly over the billion IOS devices that are currently in use. The important part of the suit Epic brings up is that Apple is blocking Epic's goal to create its own app store to be used on IOS devices directly to compete with Apple's.

This case shows how copyright, the legal right of the owner of intellectual property, is becoming a very key issue of innovation and technological advancement in the modern-day here we see Apple using their copyright to put a stop to Epic's attempt to create competition in Apple's marketplace. Lawyer Larry Lessig makes many good points on how copyright has become outdated in modern times in his 2007 Ted Talk "Laws that choke creativity" discussing both sides of extremes of the copyright issues. No matter what your opinion on the rights of Apple to stop this venture by Epic Games, due to their own it still shows copyright can get in the way of innovation with Epic Games having an idea that would be new to the marketplace that they now are unable to

create because of Apple's ownership. This roadblock goes against a point Lessig makes which is that competition can help to achieve a balance between both sides of the argument.

Lessig when he talks about broadcasting and how it affects culture. "That is something that needs to be controlled as a new way to spread content. ASCAP, the American Society of Composers, Authors, and Publishers is an American not-for-profit performance-rights organization that protects its member's musical copyrights. They were the leading entity that controlled performance rights. Being in control of a large amount of media they showed their power and control by raising the rates by 448 percent between 1931 and 1939. However, in 1939, broadcasters decided enough was enough, and with the help of lawyer Sydney Kaye. Kaye opened Broadcast Music Inc., otherwise known as BMI. They were much more democratic in the art and they even included African American music and even offered free music by putting it in the public domain. So in 1940 when ASCAP wanted to double their prices, most broadcasters just switched to BMI. This eventually broke the legal control over the first-rate music that ASCAP was withholding because the people were fine with the free music. After all, it was free, and ASCAP was essentially forced to release the music."

Lessig used stories like this to argue that it is important to have common sense be what is used to create laws around copyright. Another example used is why you can not sue airline companies for trespassing when they fly over your house because common sense says that would not work. It is important to understand that

at this point, Apple's iPhones and their applications have topped many lists including Business Insider's most important inventions of the last 30 years with this milestone being recognized by the majority of society that Apple's products are a necessity in People's day to day lives. Common sense would dictate that this device would be used to create more. This is an important note that modern copyright law does not take into account a large amount of the time. This flaw in modern copyright law is what can lead to major companies like Apple abusing this and keeping a stranglehold on the marketplace. This is a problem seen time and time again throughout our modern era where companies' fear of competition in the new industries they pioneered leads to them attempting to stop others from contributing and bettering their intellectual properties.

Another case where this problem was successfully fought was in 1903 the American auto industry, a group of carmakers made a blatant attempt to establish an industrial policy for their own benefit. In the guise of protecting the public from "unreliable upstarts" and "fly-by-nights," they formed the Association of Licensed Automobile Manufacturers (ALAM). The reason for this was their 1895 Selden patent, and they claimed that it covered all gasoline-powered vehicles. By controlling this patent they asserted the right to decide who should be allowed to build and sell cars. Carmakers who didn't join the ALAM and pay royalties on each car sold could be sued and possibly forced out of business. Henry Ford. At 40, he was broke and appeared to be all washed up. His fledgling Ford Motor Company, formed on June 16, 1903, showed many signs of being the kind of "unreliable upstart" the ALAM sought to exclude from the business. Ford had the idea of automobiles hitting the free market for automobiles had other plans. At a time

when most cars being built were expensive rich men's toys, he wanted to build low-priced vehicles for average-income people, making the car a "necessity rather than a luxury." It was not an easy victory, however, and the struggle went on from 1903 until 1911. The case opened on November 22, 1910, and the judges handed down their decision on January 9, 1911. They ruled that the Selden patent was valid, but only for cars made to its specifications. This was a total victory for Ford because no working automobile had ever been built to Selden's design. Thus the appeals court ruled that no royalties were required of anybody. This case shows the importance that we make sure copyright is constantly updated with innovations and technologies constantly being developed and the importance of the law to make sure ideas are protected but progress is not halted, creativity isn't stifled, and that common sense leads to our understanding of ownership.

Going back to Lessig's Ted Talk the importance of artist choice leading the discussion on copyright, not the mega-corporations and more importantly, the next generation the negatives of this is shown is how in a case between two billion dollars companies that choose affect their users just as much as it affects their profits. Ironically a case about giving users extra options of where they download their applications is taking away the user's choice of being able to download apps now that Apple has blocked them from being downloaded on their app store taking away a creative outlet from the public. As well ALAM attempted to stop Henry Ford from selling Model Ts. The idea of abuse of copyright hurting the consumers and creators is featured in Tim Ingham's article *Ngxku'tqqw'ctgp)'kp"cpw/eqr{tkij v'tj gqtkelOI qqf* Where they state

“Both Yahoo and Google's ad networks were last week seen in figure 3 named as two of the worst offenders for placing commercials on copyright-infringing sites. When word got out to Levi's that they were inadvertently advertising on torrent portals, they freaked. "We made a point [to our agency], moving forward, that we need to take steps to avoid having these problems again," said a spooked rep. Super-cool brands and super-cool artists ganging up against a new, very modern boogeyman--all in the name of copyright?”

Events like these show the importance of having outlets for companies producing new innovative technology should be protected at all cost so the most progress can be made even if it hurts the profits of the companies in power. This can be done on a societal and individual level by keeping the copyright and patent systems loose and encouraging inventors to provide their best work without limitations. Common sense should be used to take care of care of copyright cases not black and white laws. Doing this will heavily help innovators create more.

CONCLUSION

In conclusion with all the historical arcs of innovation that have been covered throughout this paper here are some important takeaways that can help further gain a better understanding of how to improve on making innovative ideas a reality. Keys to this are to always have a finger on the pulse of what society needs. Understanding that you the creator are not just developing a product you're creating an arc for this product's impact on society using media to do so having others seeing that you have what they need. After doing that you'll have to understand that you will soon compete with others who feel that they can also innovate in what you are going for. If you can get over this and the financials of running a major company as well as truly defining your ideas, propose on improving society with enough drive and a lot of luck your ideas can take off.

Another major principle to remember when moving with your drive for innovation is to put the media's impact on society over financial gains, the need for progress is what should always be pushed. This message should be made very clear to the public as the mark of true innovation. Although with these messages being put out to the public. There will always be detractors saying your idea of change is unnecessary or not the wrong way to do things wrong but your idea is a good thing because it shows your ideas are worth people thinking about your ideas. The criticism you receive can be relayed into another point of constantly being willing to improve on your ideas and products, the world and society's needs are constantly evolving. The major key of innovation is to match that and to make these advancements to make the world a better place.

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