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## The Economic Model Molds Information Technologies

### Final Paper

Information technology is a commodity that often completely rests within private interests. Private interests in the United States of America are often formed to serve the interest of investors and their ultimate need for profit. Companies undercut themselves to serve short term goals and privatization is a means to this end. Economic motivations define the form of information technology and how it is deployed. Design, data collection, and data exposure are designed to function within the economic model that values immediate capital gains. Information technology is a commodity, not much different than a natural resource and is quickly exploited in a similar fashion. This paper argues that the pursuit of monetary value by those communities of companies who create and invest in them is cast into the research and practice of technologies. This monetary value determines their function. Technology must ultimately serve an economic purpose within this model. The need for constant growth, disruption, and innovation all shape the way technologies are deployed to the public. These corporate needs played out in an elaborate manner, but ultimately must return to investors. Business necessitates a large scope to obtain growth. Therefore, a company would never just aim for a small segment of the market or deploy with a single use in mind. There must be something game changing involved and often that game changing factor is a piece of new technology or platform. This pursuit of profit is seen with the implementation of micro targeting advertisements, recursive algorithms, artificial intelligence, data mining, bioengineering. These functions of technology all ultimately work to return value to investors. Breakthroughs expand the knowledge base, but the underlying value that pushes these information technologies into everyday use is the aforementioned value. These values are also often shrouded with immediate freeness. Information technologies given to users without a cost ultimately use their data and attention to generate revenue. Different communities react to this shaping of technology in different ways. Some of the formulation of technology and its motivations are not disclosed to users. However once those motivations reach the public sphere,

opinions and regulations regarding information technologies can change. Economic and political power work together and in relation to one another in the world. This paper argues that the usage of technology is defined by the economic system from which it is implemented. Modes of commercialization represent powerful values from the business community. These values reach out and affect numerous local communities and illicit a range of reactions based on those communities' values, priorities, and needs.

Values of major companies shape the deployment of technologies. The utmost value is the value of profit and those profits must be posted every quarter. It is growth that investors look for and often when it is not seen, a company may be abandoned. The processes of acquisition remove small and moderate players from the market who may have different values. Major companies, as discussed in class, have extreme economic, political, and social power and often exert that power for their own economic gain. Facebook purchased Instagram. Microsoft purchased Github. Google purchased Waze. Large companies increase their economy of scale with each horizontal or vertically integrated acquisition. Companies seize upon the opportunity to acquire others technological advantages in order to please their investors. This coalition of power is enough to draw talent from other sources of innovation such as research institutions. Traditionally, the values of research intuitions are quite different from a large corporation, where value is placed on long term research that is unique and fundamentally changes whatever field the researchers are working within at the time. Now, companies are so large they are able to sway these researchers away from traditional forms of innovation. This change fundamentally alters the process of technology development and allows for companies to impose their values into the process of research and discovery as it is being generated. The centers of economic power extend beyond nations. Technology has risen to extend far beyond the power of one specific nation. Major corporations such as Google, Facebook, Amazon, and many more extend their operations beyond a single country or even a single continent; they are global entities.

At a high level, it is the economic model that shapes the values of these corporations that are responsible for creating and implementing technologies. The economic model is that of profit driven capitalism and any business venture undertaken ultimately must serve the value of profit. This value carries to the way technologies are created. The business world is itself a complex maze with inventors, venture capital, universities, established companies, and individual investors all making up the ecosystem. Ultimately, information technology must also generate a profit for those who invested. Within the context of the IS 212 Values and Communities class,

this capital model is discussed as Neoliberalism. Specifically, David Harvey's work is the medium through which to examine the economic system as it emerged in the 1980s. "Harvey's most recent book, *A Brief History of Neoliberalism*, dissects the salient features of late 20th and early 21st century economic and social life: the gradual shift, throughout the nations of the global economy, toward economic and social policies that have given an increased liberality and centrality to markets, market processes, and to the interests of capital."<sup>1</sup> The change in the capitalism driven system is described as Neoliberalism and "is the intensification of the influence and dominance of capital; it is the elevation of capitalism, as a mode of production, into an ethic, a set of political imperatives, and a cultural logic."<sup>2</sup> Whether or not the emphasis placed on capital and private return on investment is called "neoliberalism" is beside the point within this paper. Here, the argument is that these values are themselves the mold that technologies are pushed through when they are deployed to users and consumers. The above history of how this mold came to be is helpful to consider the placement of these values of profit. What can be considered Neoliberalism helps to push the need for constant growth and room for investment. This in turn drives how, when, and why information technologies are deployed.

The United States of America seemingly serves as the center of technological development with the ultimate hub in Silicon Valley. Silicon Valley combined with research universities are pushing forward with their innovation. There is a coordination of economic and social policy in relation to financial industry and there are cultural dimensions of globalization. Information technology is global and so are the dominant economic models. Within the context of Neoliberalism and the underlying problem central to David Harvey is the object of speculation that is global. Investors are always looking for new places to invest. Variables optimized for their own bottom line and shareholders. There are freedoms of market and movement, but whoever has power of market activity has control over world. The economic world and its intricacies expand when Globalization occurs in the late 1980s and in the early 1990s with a set of agreements that Thatcher and Reagan really shape and in turn shape the flows of capital around the world. This is the era of the IMF and The World Bank seeking to incubate and support businesses that seek to spread across world. In this time (and even now) the systems of capital are looking for new frontiers. Just as the economy is globalized, information technologies also

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<sup>1</sup> Harvey, David. 2005. "A Brief History of Neoliberalism" 7

<sup>2</sup> Ibid.

become increasingly prevalent to connect the world. These information technologies are reaching their peak in the present moment and have global presences.

It is understood that there is an economic backdrop to global information. Geo-politically cities are important and privileged. Networks of connectivity are not decentralized, but constructed in image of power and image of other flows. Similarly, technology is created often in the image of profit and power. Ideas of disruption all play into the same model. Trans-national technologies are peer to peer in nature, function in the form of distributed communication, and are constantly expanded in scope. Investors demand that digital data infrastructure is built for new industries. Development is rooted in the value of the most immediate profit. At times these motives are tempered with long term vision, but ultimately profit is the motivation. This is all about what a company can do to make it more profitable in that instant. The economic model's saturation into the rapid matches the development of technology and often the two are fundamentally linked. Though for the purposes discussed here, it is more of a comparison than an integral similarity. The economic model outlined above starkly contrasts the ideal world of the digital. The supposed neutrality of all things digital eclipses the economic influence of these same technologies. Information systems in their many forms are heralded as something that will uplift and change the lives of anyone who comes into contact with them. "Enthusiasts of the "new medium" herald the Internet as a democratizing force that will give voice to diverse social economic, and cultural groups. It promises to give those who are traditionally disempowered access to typically unreachable nodes of power and previously inaccessible troves of information."<sup>3</sup> Innovation and leaps in technology seem to consistently begin with an ideal of the version. Information technologies may be theorized as a solution for an ideal world, yet economic model they are pressed through transforms their very function within the world. "Yet, as acclaimed media critic Robert McChesney and others have convincingly argued, commercial interests have been woven into the very fiber of the modern media networks, displacing and silencing the public service aspects central to the vision of the early pioneers of radio and television, and influencing such later innovations as media available via satellite and cable."<sup>4</sup> Capitalism meets technology to fundamentally determine how technology is formed and

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<sup>3</sup> Nissenbaum, Helen. 2003. *The Internet in Public Life*. "Shaping the Web: Why the Politics of Search Engines Matter".

<sup>4</sup> Ibid.

deployed. These capital interests place immediate value over long term functionality and can be seen in numerous use cases.

The economic model that requires profit is baked into the design of various technologies. The use of ads is especially prevalent with search engines and social media and directly influences what and how people see what they see. Engagement within the platforms is key to the model. It is even shown that people click on first three to four results of Google, rendering these first spots incredibly lucrative for the companies that are able to secure them. Therefore, there is power and money to be made over representation within these first slots. However, this design does not indicate to the user how their results are coming to them. Design is design of algorithms, artificial intelligence, values of research, and definitions of success. Economic priority is the foundation for these decisions when they are made by private corporations who answer to regulators and most importantly to shareholders and board members. Design of the above has subsequently been speed up to compete with competitors. “As Web designers jealously compete for top slots, leading authors in the field of Web site promotion report that: They are always trying to fine-tune and tweak their HTML code and learn the next little trick. The best players even know dirty ways to “bump off” their competition while protecting their own sites.”<sup>5</sup> Here, the values are to promote a company’s material over others. Knowledge of how these systems and ranking algorithms work is key to do so. Designers and the companies they work for want their sites to appear when people search for them. The very design of search engines means results will be ordered. Therefore, designers and companies want to be high up on that ordered list. “Out of this strange ranking warfare has emerged an impossible situation: search engine operators are loath to disclose details of their ranking algorithms for fear that spammers will use this knowledge to trick them. Yet ethical Web page designers legitimately defend their need to know how to design for, or indicate relevancy to, the ranking algorithm, arguing that seekers are entitled to find what is genuinely relevant to their searches.”<sup>6</sup> The value of increased revenue is what encourages major companies to make these algorithms proprietary as it is what distinguishes it from other companies that purportedly offer the same service. Top level down organization of search where a company provides a service makes search efficient, but its technical functionality makes it unclear.

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<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

Algorithms capture efficiency, a characteristic highly sought after in today's economic climate. Algorithm is defined as a repetitive mathematical process acting upon data. Saturate our interaction with information. Within the context of information and social technologies, algorithms have the power to and are designed in order to influence what information a user finds, what information finds a user, what is collected about a user and so on. Algorithms are applied to specific techniques and govern domains in relationship to people. Algorithms also are the backbone of artificial intelligence. Originally framed, artificial intelligence is the pursuit of how to develop computation intelligent in the way humans are intelligent. Currently, there are restrictions to AI's domain of knowledge and is currently implemented on the form of specialized AI. While these algorithms increase immediate profitability for the companies that implement them, algorithms and artificial intelligence that ultimately displaces the human worker will completely change the current economic system. With artificial intelligence and algorithms conducting work, humans will no longer be able to earn capital to purchase goods, completely halting the consumer driven economic system where firms produce goods and consumers purchase them. This excitement of being on the cutting edge of technology often does not recognize the harm companies may do to themselves when their strategies play out in the long term.

Algorithms and personalization make ads that much more effective. Marketing has become personalized using these algorithms to reach far beyond the traditional demographic. Instead, (potential) customers' data is processed and personalized recommendations are served to them. Companies are targeting consumers based on the aggregate of data collected about them. For example, Fiat personalized 500 commercials. Each supposedly a bit different for a different sort of person. Cathy O'Neil in her book *Weapons of Math Destruction* breaks down the definition of success and data for algorithm. Her critical discussion is based on what is associated with success and why events are defined the way they are within the system. Ultimately, algorithms function as opinions embedded in code and these judgements have to be situated into larger political economy. In the case of for profit businesses, these algorithms must ultimately be efficient and generate revenue or allow access to a certain revenue stream.

Algorithms lead into business with the use of targeting and knowledge about customers and consumers. Data brokers are certainly culprits of thinking short term about their business. Facebook as site for third party micro targeting and psychometrics. There are also alternatives to these algorithms with ways to design to show why a person is seeing what they are seeing and

what factors influenced this. As it stands currently, it is unclear to users why things are connected, but content is linked to keep the attention of the viewer; autoplay and autofill send a person on a content trajectory. This content is far beyond just search and retrieval. These features press for continued engagement with content, no matter what that content is. Extreme views and videos keep people watching. This engagement is how revenue streams are captured for the business. This is the ultimate goal of a business model that utilizes ads. Here, it is not convenient for companies to articulate why they are providing certain content to certain people. In fact, companies would probably argue it is the algorithms not the company that is providing the specific content. Here, users opt in to quite a bit when they open up a video. They are not opting into just use and access, they are also opting into transactions and protocols that are both visible and invisible. These algorithms are private, proprietary, not really regulated, and not transparent. Another example of algorithms turned into a good which is then sold is predictive policing. Predictive policing is technically artificial intelligence that is defined by algorithms defining categories of people. When algorithms such as this one are put into an economic context, companies probably will not put a lot of effort into reconciling cases where artificial intelligence has guessed incorrectly. Companies and researchers are still able to sell their technologies. “Predictive programs are only as good as the data they are trained on, and that data has a complex history.”<sup>7</sup> The criticism of existing artificial intelligence and use of algorithms to make decisions is summarized within the following New York Times opinion piece by Kate Crawford (who works at Microsoft): “While machine-learning technology can offer unexpected insights and new forms of convenience, we must address the current implications for communities that have less power, for those who aren’t dominant in elite Silicon Valley circles.”<sup>8</sup> Machine learning and whatever it may allow for will fundamentally be used in a for-profit system. That requires the technology to be parceled out and used in a way that generates revenue. These information technologies, when implemented by the large corporations who control much of the markets, are deployed for specific economic purposes as determined by the economic mold.

Research interests of private corporations also do not seem to have modeled possible negative outcomes for their research. Facebook’s artificial intelligence research is an example of this and it seems an aspect of it was shuttered. James Wiler in Digital Journal writes, “If AI-

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<sup>7</sup> Crawford, Kate. 2018. “Opinion | Artificial Intelligence’s White Guy Problem.” *The New York Times*, January 20, 2018, sec. Opinion.

<sup>8</sup> Wiler, James. 2017. “Researchers Shut down AI That Invented Its Own Language.” *Digital Journal*. July 21, 2017.

invented languages become widespread, they could pose a problem when developing and adopting neural networks. There's not yet enough evidence to determine whether they present a threat that could enable machines to overrule their operators.”<sup>9</sup> The situations often result in engineers talking to other engineers about how to make these technologies (especially artificial intelligence) more ethical. However, it is still unclear if they recognize the inconsistencies between the purported efficiency of algorithms and the trouble they can create. Algorithms undermining the efficiency they aim to create. Engineers seem to be creating artificial intelligence and there are publically visible concerns that at a certain point they may not being able to engineer their artificial intelligence any longer. Engineers still want systems they can control where the systems are producing the desired output and supporting what the larger system wants. As evidenced by the creation of special companies such as Open AI (Elon Musk) and Y Combinator (Sam Altman), engineers are concerned developing a super species that human engineers will be unable to understand and control. Outside of these projects, it seems as if artificial intelligence will be pursued as an answer to an economic question. The entire framing of what the definition artificial intelligence is itself a very engineer centric task. “Sexism, racism and other forms of discrimination are being built into the machine-learning algorithms that underlie the technology behind many “intelligent” systems that shape how we are categorized and advertised to.”<sup>10</sup> Algorithms are built for the sake of speed and efficiency and in doing so, they leave a lot out of the picture.

Companies utilize their users’ data to create profitability for applications that are on the surface free of cost. Big data initially approached as a promising way to know and a result of increasing digital lives. Data collection about users is rampant, but also how these information technologies are able to function at the moment. These business models could be redesigned with more clarity for the user. Data functions as a commodity and that data is used to target people in order to sell the, goods, market politicians, and probably much more. In combination with this business model, Facebook seems to be investing very little into people involved with their global governance (those who work the understand global and local communities). It is clear that Facebook’s desire is for to just use it as it is a light weight technology. For Facebook, it would appear that a defined success for an algorithm is engagement with the material. These targets are

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<sup>9</sup> Ibid.

<sup>10</sup> Crawford, Kate. 2018. “Opinion | Artificial Intelligence’s White Guy Problem.” *The New York Times*, January 20, 2018, sec. Opinion.



crafted in both traditional demographics, algorithms, or they can be psychometric. Companies ultimately craft the regimes of data and control the regimes of data. Within the United States of America, there is not a huge move to protect the user/consumer from this sort of constant data collection due to its more pro-market philosophy. Just recently the European union passed legislation outlining what companies are allowed to do with their customers data. Many American sites went down in these EU countries the first day. Even sites' American versions posted notices and approvals for information about how they use cookies to make a better experience for their customers. Certain communities are pushing back against the values of large corporations and how information technologies are shaped in an economic light.

Moral or ethical judgements do not have a place within initial design; the thought is of the ideal and of the profit. This is seen again and again with public relations scandals that numerous information technologies have encountered. It is only when the public is outraged do they modify the original design. So, when companies create an algorithm to approve ads or identify groups to sell ads to, a lot can go wrong. ProPublica investigated how Facebook uses information about users to target information to them. "Over the past decade, the company has developed hundreds of rules, drawing elaborate distinctions between what should and shouldn't be allowed, in an effort to make the site a safe place for its nearly 2 billion users."<sup>11</sup> ProPublica investigative journalists "paid \$30 to target those [anti-Semitic] groups with three "promoted posts". Facebook approved all three ads within 15 minutes."<sup>12</sup> These situations are reconciled after the fact; "After we contacted Facebook, it removed the anti-Semitic categories — which were created by an algorithm rather than by people — and said it would explore ways to fix the problem, such as limiting the number of categories available or scrutinizing them before they are displayed to buyers."<sup>13</sup> The integral aspect of ads combined with the implementation of algorithms in creating categories in which to advertise, is that the world is reflected to users. In a similarly insensitive moment this year, Snapchat ad that made light domestic abuse and involved Rihanna and Chris Brown. This advertisement was approved via an algorithm as well.<sup>14</sup>

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<sup>11</sup> Angwin, Julia, et. al. 2017. "Facebook Enabled Advertisers to Reach 'Jew Haters' — ProPublica." ProPublica. September 14, 2017.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Bowles, Nellie, and Valeriya Safronova. 2018. "Rihanna Protests Ad on Snapchat That Mocks Domestic Violence - The New York Times." New York Times. March 15, 2018.

Algorithms have been handed more control by companies, but this control or lack of it can result in massive backlashes. For example, celebrities and influencers deleted Snapchat after this incident. How much money do companies save when they choose the most efficient option on that moment only without playing out the longer-term possibilities?

The blurring of the technology space bleeds into politics and news extends beyond the traditional niche of using data to target ads. There is a beneficial exchange between government and huge technology corporations which certainly influences how these companies are regulated or not regulated by different governments. It could be said that there is a revolving door between Washington and tech. This door between Washington and the technology sector functions as any lobbyist group does—laws are lax regarding their regulation. This laxity is especially apparent when American privacy and data use laws are considered in comparison with those in Europe. Network effects—more data you have the more efficient the service will be. Get the right answers. What would a person be okay with giving up in terms of privacy and to whom for what sort of internet experience?

Design that is implemented into the economic model that values profit as its apex, will ultimately be formed by that same value. Simply put, money now is better than money later. Companies pour resources into technology that will attract investors and therefore it is technology that may not be the most thought through. What are the implications of Facebook sapping away professors from top engineering schools to research AI or of snapchat using an algorithm to approve ad buys? Both have poor long-term effects that most likely undercut the companies' eventual goals, but satisfy them in the short term. If profits keep a company running, then that company will prioritize their profits. By delving into new research within algorithms and artificial intelligence, the results are still unknown and the consequences may even harm the companies themselves.

A counter point to the above argument is that this format spurs increasing innovation. Innovation, these technologies make life easier and therefore better. Google search makes life incredibly convenient. It is quick and quite fast at returning results that are often correct. AI, algorithms, robotics all can be used to make life better, more efficient and include people who may have been excluded previously. Certainly, this is true. A tension to the above argument is that there are examples where local, non-corporate technologies exist. Though they are often either acquired or call themselves out as potential markets. There is the Zuni example of a community installing and maintaining their own cell phone towers, then having corporations

market lower prices to that same community. When corporations fail to see a profit in certain communities, they do not develop or deploy technologies within them. But, once corporations see the community providing the same service for itself, it acts swiftly.

When people are confronted with the sometimes ugly truth of control of technology, such as when net neutrality was repealed, new alternatives gain traction. Alternatives just like this were detailed in an Inverse article which reports, “When we access the internet via an ISP, we are likely connecting via broadband, which is literally a giant cable that connects our ISP to top-level internet exchanges. In other words, the ISP acts as the central gatekeeper that ultimately controls our point of online access.”<sup>15</sup> The article continues that, “In the short time since the FCC’s net neutrality ruling, there have already been a number of new mesh internet projects popping up.”<sup>16</sup> The article continues to point out that these community driven technologies are still not widespread, “Despite their many benefits, mesh networks are still niche. This is partly because connecting to a mesh network is still far more difficult than just signing up for Internet service via an ISP and paying a monthly Internet bill.”<sup>17</sup> There seems to be a tipping point when citizens exercise their individual and smaller collective power to reject the values of larger corporations. This social tipping point often comes after an event or political regulation becomes framed as greed in the public sphere.

Tensions in the above outlined argument center on the existence of technologies that are not deployed by corporations with an end goal of profit for shareholders. There are rampant examples of technologies being engaged with when there is not corporate interest. The book *Ours to Hack and to Own* by Nathan Schnieder and Trevor Schultz fundamentally argues that enterprises don’t have to be owned in private share holder. They say there can be a way to build digital enterprises profits to feed back into workers and their worlds in the form of externalities that will at some point have an economic impact in the world. Externalities are often not considered when a technology comes into the market. But often there are eventual economic effects to these externalities. What will happen to the economic system if artificial intelligence replaces so many jobs that people can no longer afford to consume goods that these companies are making? This is often the nature of how those businesses are constituted and owned—that is

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<sup>15</sup>Guo, Eileen. n.d. “With Net Neutrality Gone, Here’s How To Build Your Very Own Internet.” Inverse.

<sup>16</sup> Guo, Eileen. n.d. “With Net Neutrality Gone, Here’s How To Build Your Very Own Internet.” Inverse.

<sup>17</sup> Ibid.

with thought to the immediate future. However, it does not have to be a homogenous organization. With values and different communities, companies may be able to move beyond the present moment. Ownership, management, and development are more diversified, see those results. Diverse boards, management teams can produce very viable profit. Alternatives to speedy and profitable only seem to exist when companies ignore or pass over certain areas. Only then do the communities have a chance to build resources themselves.<sup>18</sup> When discussing the downfalls of certain systems, it is important to remember that it is not the technologies that are necessarily the issue, but the values of the economic model and corresponding motivations of those who implement them for wider use in the world. Technology is parceled out as a commodity to invest and profit from as is everything else in the world. Technology companies are also so huge and encompassing in terms of their intellectual property portfolios. Often when a new and promising technology is developed outside of a behemoth company, it is eventually acquired.

Information technology is a constantly changing field with new scandals and laws emerging on a seemingly weekly basis. The discussion around what it means for a company to build a business off of targeting ads evolves as the regulations evolve. It is therefore necessary to discuss these new regulations and the analysis of their impact. These topical events are essential to discuss as they shape the information technology landscape. Recent events such as Cambridge Analytica's psychometric Facebook use, European Union's general data protection regulation reveal the immediacy of the tensions within the development of information technology. The economic motivations are seen in the ability to look past consequences of these technologies and place these consequences on humans rather than the technology itself. While it is not the technology itself that caused these issues, it is how companies implemented the technologies that allowed for these events to occur. Nick Bilton for Vanity Fair writes, "when you talk to people who work in the tech industry about the negative social consequences of their products, their response is usually to point a finger at the people who use technology, not the technology itself. Yet as the Internet has collapsed into a cluster of corporate fiefdoms—where one lunatic can reach a billion—the justification that these systems are just tools just doesn't pass muster." The article continues, "In many ways, the engineers behind these technologies choose to look at the utopian versions of their creations because it doesn't fit their self-concept to gaze elsewhere."<sup>19</sup>

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<sup>18</sup> Rogers, Kaleigh. "Ignored by Big Telecom, Detroit's Marginalized Communities Are Building Their Own Internet - Motherboard."

<sup>19</sup> Ibid.

The article concludes with a wise precaution, “If we couldn’t anticipate that Facebook would be used by the Russians to trick Americans into protesting each other in the streets, or that armies of Twitter bots could be used to disseminate political propaganda and make us all hate each other, what makes us think we can predict how this new wave of technologies will be turned against us, too?”<sup>20</sup> The need for introspection is apparent to many, but not necessarily to the community who creates the technologies or to the companies who implement them.

In continuing to discuss these topical issues, Maya Kosoff for *Vanity Fair* wrote a piece on the next big backlash against tech firms as information technologies’ privacy practices become more well known. Specifically, these new regulations have far reaching affects that are certainly shaping how information and social technologies are going to be developed in the future. “The E.U.’s General Data Protection Regulation (known as G.D.P.R.), forces companies to adhere to certain guidelines when it comes to the use and storage of people’s data. The law is already causing panic in Europe: tech giants have been hit with multi-billion-dollar complaints filed by European privacy advocates, and programmatic ad buying has plummeted.”<sup>21</sup> It would appear that these privacy regulations will severely impact the current business model of United States based technology companies. And there are more regulations to come. Kosoff continues to write, “An even stricter privacy law is currently pending abroad. The law requires explicit consent from users for all messaging services before companies can place tracking codes on their devices or collect data about their electronic communications.” These European laws may be a tipping point for the traditional information technology development model. These laws also serve as a counter example to this paper’s main point. The very large and diverse community of the European Union has decided what their values are within the world of information technology. The argued downside of this law is that it will halt companies’ ability to develop new technology that can be provided for “free”. Kosoff in her *Vanity Fair* article writes that “tech companies, predictably, are up in arms over ePrivacy Regulation, which they believe will decimate their ability to target people with digital ads, thereby forcing sites or apps to charge fees or shut down altogether. They also argue the law would “seriously [undermine] the development of Europe’s digital economy” by preventing useful data from being shared with developers.”<sup>22</sup> The argument tech companies are making is that their ability to operate is directly tied to their ability to make a profit. If the process of monetization is changed, then development of information technologies

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<sup>20</sup> Ibid.

<sup>21</sup> Kosoff, Maya. 2018. “The Next Big Anti-Tech Backlash Is Just Beginning.” *Vanity Fair*. May 29, 2018.

<sup>22</sup> Ibid.

within the European market will also be changed or stopped. The use of consumer's or user's data is so baked into the business model there seems to be no other conception of how to churn a profit from online activities.

The G.D.P.R. is also an example of the transnationalism of information technology. Companies reach far beyond a single community and far beyond a single nation with singular laws governing its behavior. Here, the European union community is asserting their value of privacy over information technology's value of profit. These assertions carry over in how companies communicate with customers outside of these European nations. Companies seem to be still deliberating over what is more efficient: splitting technologies based on region and developing them differently or uniformly creating rules that may be difficult for the companies' business models. Kosoff reports that "Already, G.D.P.R. has begun to create two separate versions of the digital world: as dozens of sites stonewall the E.U., The Washington Post, is reportedly launching an E.U.-specific paywall that doesn't include tracking or ads, but that's more expensive, creating a model for companies that may wish to follow suit."<sup>23</sup> Within the European Context, it is quite clear how data usage is the catalyst for profit. But without the profit motivation, what would motivate a company to produce an information technology. Within the community of business, profit is the highest and most essential value.

This paper concludes that technologies are shaped by the economic environment. Ultimately, the economic model of capitalism which prioritizes private ownership and properties greatly molds technology. Social media, bioengineering, algorithms, artificial intelligence, and on and on all will ultimately serve those who have invested into them. Companies that may initially form to serve a specific community or operate without ultimate deference to capital eventually or purchased or face competition from large corporations. This economic environment greatly controls what is developed, by whom, and for what purposes. This is an economic model that ultimately serves profits and quick development and innovation is awarded with profits. Speed is key within the digital economy that values constant growth and new technology, even if that technology shapes the world in a self-destructive way. As information companies form, this competition becomes more intense and the desire to churn out technology grows accordingly. This quick turn to market to generate profitability often lacks long term thinking or at times even technological strategy. This value of short term gain is possible as private companies are accountable to those who regulate them and to their shareholders who

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<sup>23</sup> Ibid.

invest in them. When private corporations are responsible for researching and engineering major advances in technology, these motives become ultimately profit driven. In turn, the search for profits speeds up research and deploys technologies whose complete impacts are not yet known. Companies are privatizing the digital aspects of people's lives. Certain communities that range in size can access the form information technology takes and respond as their agency allows for within the world. The economic model and function of companies hold the most power when technologies are developed and deployed to their intended users. The economic underpinnings of the world grasp for speed and growth in new technologies without regard for many other considerations.

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