DISRUPTION AND UPHEAVAL IN THE GLOBAL BUSINESS ENVIRONMENT: HOW COMPUTER TECHNOLOGY AND CLOUD COMPUTING HAVE ENABLED SMALL BUSINESSES TO COMBAT LARGE CORPORATIONS

by

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DEDICATION

To my grandfather, who has done absolutely everything within his control to offer his support and make my life as fulfilled, meaningful, and enjoyable as possible.

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I would like to foremost thank Dr. Galloway for helping me along with my thesis process, encouraging me to try my hardest and complete this work. Without her care for the education of students, I might not have been given this opportunity to challenge myself and formulate an informative message.

Next, I would like to thank my outstanding family for supporting me through life with nothing but the most love. It is through their show of affection that I have become who I am today. While it is easy to forget the everyday blessings that we have in stark comparison to an uncivilized village, my family has done its absolute best in trying to make sure I know how loved I am. Through my mother's occupation as a Principal of an elementary school, I have seen the tenderness of some educational facilities which has given me even more of a drive to achieve academically. As the first member of my family to receive a master's degree, she also represents a role model for achievements as well as her grace.

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through his lectures. He always made himself available and would not hesitate to take a call from a student. I want to thank him for supporting me through this thesis and offering his very valuable insights. As I want to be an entrepreneur one day, Bill has set a high bar for achievements of success as well as personal character.

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ABSTRACT

This research study looks at the great bounds in technology created by man and how the business environment has been forever changed due to such advances. I will lay out the shift from an advantageous scale of economies into the new and sleeker business model of a scale of diseconomies and how this has allowed for the growth of countless small businesses. According to “the American Dream”, one must attain an education, find a company for which all their needs are met, and work that job until the age of retirement; however, the great spike in technological advances is calling this preconceived notion of the “American Dream” into question. Along with an explanation of the shift in the business environment, I aim to provide my audience with the knowledge of what is required of a small business to be able to truly compete with the large conglomerates who have etched their place in business history. This work draws upon first-hand interviews with business owners/executives of varying company sizes, academic articles, and scholarly business books as a basis of identifying potential upsides and downsides to all avenues for a business endeavor. Through this research, I provide an optimistic hope to any entrepreneur or business owner as they can find their own slice of the pie among this new, digital landscape.

I. INTRODUCTION

Through my four-year college endeavor, I have grown greatly through my life experiences as well as classroom learning. As a business management major, I have been exposed to the different ways of facilitating operations and have seen trends emerge from within all of my classes. With hopes and aspirations beyond my college career I have been exploring the different routes to success that one could take, and it led back to one option- to develop your own business. As you could work for someone else to afford them a luxury, they are the gatekeepers of your true treasures and I wish to break from that notion of working. I strive to be entrepreneurial in my endeavors and have seen a valuable opportunity emerge from the technology now at hand.

I will be looking into the general business environment to highlight key trends and opportunities for small businesses. My prime factor for the creation of such opportunities is the advancements in technology brough upon by the 1990s and followed through to current time. As with pre-internet, there has existed an economies of scale which has prevented small businesses from gaining key opportunities and resources that are crucial to the success and growth of a business. Due to the introduction of cloud computing, this economies of scale has been challenged and there has been a flood of small businesses utilizing all of the tools at their disposal to gain competitive advantages over their competitors.

With cloud computing, or the on-demand availability of computer system resources, there has been a channel created for which any businesses needs can be met. Small businesses now have access to resource management capabilities and the ability to

have all their business functions integrated into easy-to-use applications. This disproportionality benefits small business over large corporations and there has been a leveling of the playing field in relation to business tools and their availability.

I will highlight the opportunities created for small businesses through laying out the history of the business environment and the pivoting point for industries and corporations brough upon by World War 2 and the economy which had emerged from the war. I will follow the business environment with elaborating upon economies of scale, as I want to relate the booming post-WW2 economies to the sheer size of the corporations created and detail the advantages created through the corporations size. Then I will bring in the technological side of the case presented by describing the transformation that technology has gone through to bring computing to the palms of consumers. It is through this advancement in technology that businesses have reached the pinnacle of functionality, or cloud computing.

Businesses have many different needs and require different solutions than others. I will give some examples of the various types of software's available and develop the benefits created through these applications. As with the creation of the internet and globalization of the market, the world has become more connected than ever before. I will highlight this opportunity created through the advancements in technology by describing how businesses are now able to create a digital presence through various means such as social media. Due to the shift in media channels, there has been a 24/7 medium created for collaboration and the spreading of a businesses culture, services, and products. Lastly, I will mention some technology beyond cloud computing as there have been advances in artificial intelligence or the simulation of human intelligence through

machines that are programed to think and act like humans. Through this paper I hope to bring light to the vast opportunities now at the hands of small businesses, pushing potential entrepreneurs to chase their dreams and take on big corporations

II. HISTORY OF THE BUSINESS ENVIRONMENT

First and foremost, before we can look at the current business environment and draw conclusions regarding the rapid advances in technology, we must lay out a working framework of what has been.

The Great Depression was the worst economic downturn in the history of the industrialized world and wreaked havoc upon the United States economy from 1929-1939. It was caused by a booming economy following the end of WW1 in 1918. There was a period of economic expansion where the total wealth of the United States had doubled in a mere decade. This period was known as "The Roaring 20s" and led to the overspeculation of the Stock Market in 1929, and more so, the coming of the Great Depression. Many citizens were eager to try their luck with the stock markets and score millions, however; due to declining production and increasing unemployment, the market would soon hit a ceiling. Because of the dumping of capital into stocks, market values were overvalued, and investors began to dump their investments. Soon the overvalued stocks were almost worthless and being dumped as seen on Black Tuesday (October 29th) with the selling of 16 million stocks. Following this mass dump of stocks, consumers were wary of the economic climate and opted to be more conservative with their money. This caused a lack of consumerism and resulted in factories and businesses of all kinds having to slow down production or lay off workers. As one could conclude, this started a perpetual cycle of the Great Depression where the economy was left in shambles for the better part of a decade.

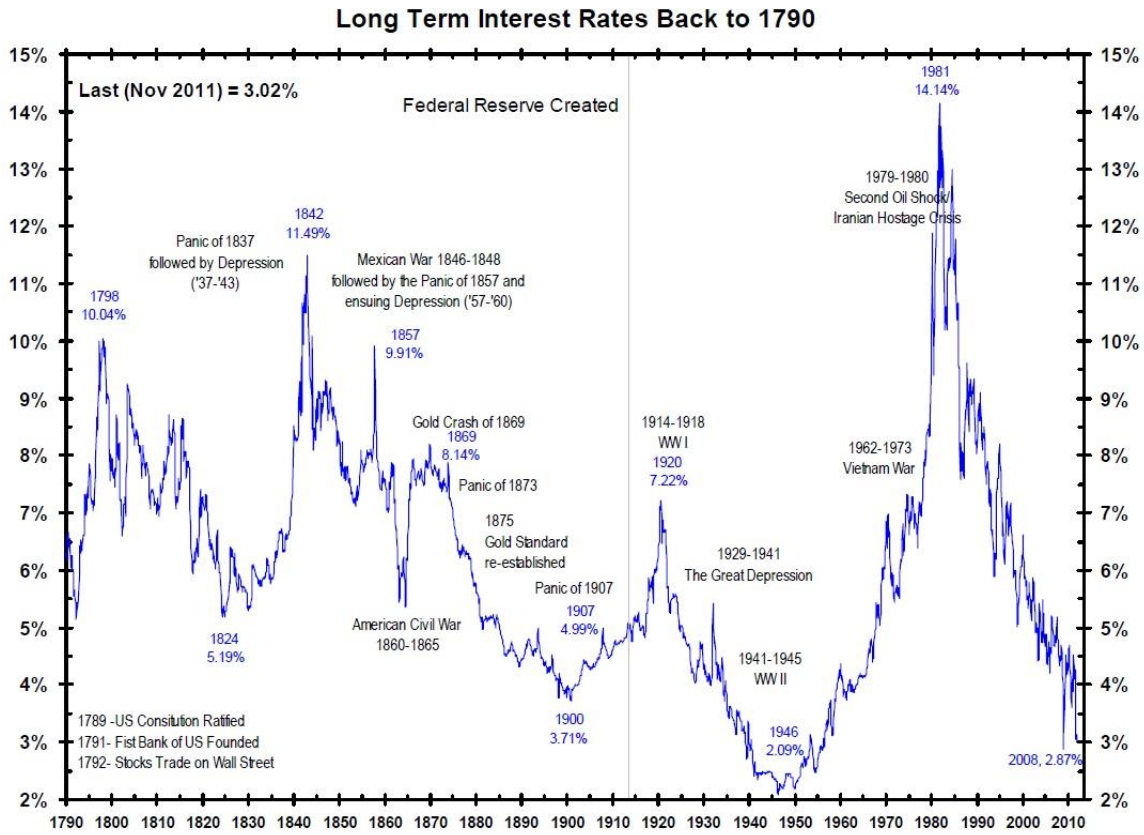
Following the Great Depression, from 1939-1945 the United States was involved

in the Second World War which had caused nearly 300,000 American deaths. As with wartime, there was an economic boom due to the increased demand of military products produced domestically. Due largely to the automaton introduced into the wartime factories, there was an all-time high of production from within the United States borders. As one could expect, the world has always been challenging traditions with the introduction of new technologies; for instance, one key piece of machinery was that the forklifts' introduction in the early 1930s and its ability to shave great amounts of time off the average workers efforts.

Aside from the technological changes to the factory environment, the economic boom from war industries brought a whole new demographic to the workplace- women. In result of many American men being drafted, there was a shortage of factory workers and an abundance of military wives awaiting their soldiers return. This marked a pivoting point for workplaces across the country as tradition had labeled women duties as caring for children. Amid the introduction of women into the workforce, there was an aura created of strong and embodied women which was a much-needed push in the right direction for women's rights.

Following the war marked a period of low interest rates which were aimed to help finance the war and helped the booming economy ride its wave through high tide. These interest rates were what allowed a shift from cities to the suburbs. The suburban population has rose from just "19.5% in 1940 to 30.7% by 1960" (Lumen) and had created plenty of opportunities to expand the economy.

Figure 1.



Following this boom in suburban development, there was also a major player in the economy of the United States which was embodied as the replacement of coal by oil. As we were entering a new phase of industries and inventions, there was a gradual phasing out of coal as a primary source of energy which led to the increase of modern-day oil such as that we use in automobiles.

With the addition of so many motorized vehicles to the streets, there was a new need for infrastructure which was answered by President Dwight Eisenhower and his passage og the Interstate Highway System and Federal Aid Highway act 1956. These acts

called for the creation of “41,000 miles of a National System of Interstate and Defense Highways” (History). This reference of defense highways can be seen as an embodiment of the war culture that has persisted throughout the united states and cumulated in the Cold-War scare. While there might have been a need for the improvements of roads, it was the scare of a nuclear fallout that caused the true infrastructure rearrangements. Though the roads were implemented as a tactical strategy, they offered a new market for logistics companies who would utilize these roads for commercial reasons. This pairing of new highway systems and means of transports gave a direct advantage to wholesalers and retailers as their distribution channels have now been widened greatly.

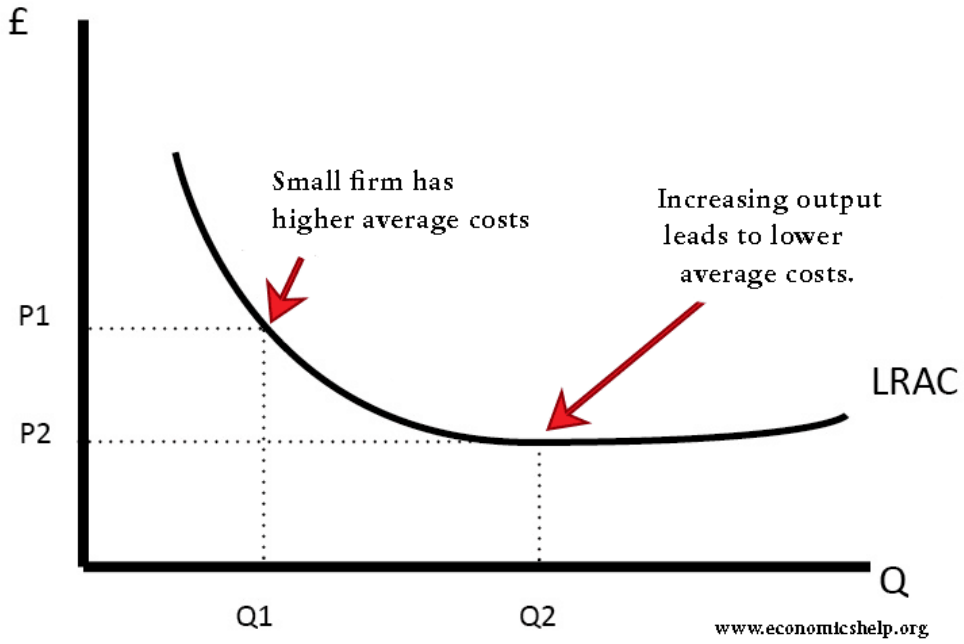
Lastly, we can introduce conglomerate companies which have rose from the ideal economic conditions presented by the economy of the United States. While big businesses have been around since the 1800s, there was a new playing field created with the new technologies at hand. The largest influx of corporations came in the 1950s with the introduction of household names such as Walmart, O’Reilly Automotive, and Little Caesar’s Pizza. The one thing that all these seemingly different companies had in common was that they were created for the consumer on the go. With the shift from urban centers to suburbs, everyone was on the road more than never and there was a departure from the notorious “milk man” and car shops to stores offering more directly what the consumer needs. “The period from the end of World War II to the early 1970s was one of the greatest eras of economic expansion in world history. In the US, Gross Domestic Product increased from “$228 billion in 1945 to just under $1.7 trillion in 1975.” (Wikipedia). This growth in the economy can be accredited to the rise of big businesses through the use of new technologies as there was a stage set for these

corporations to grow to new heights.

III. ECONOMIES OF SCALE

First, I wish to define two terms for the better understanding of my analysis- economies of scale and diseconomies of scale. Economies of scale, as defined by Investopia "are cost advantages reaped by companies when production becomes efficient. Companies can achieve economies of scale by increasing production and lowering costs. This happens because costs are spread over a larger number of goods" (Investopedia). And oppositely, "diseconomies of scale happen when a company or business grows so large that the costs per unit increase. It takes place when economies of scale no longer function for a firm. With this principle, rather than experiencing continued decreasing costs and increasing output, a firm sees an increase in costs when output is increased" (Investopedia).

Figure 2.



As the post-war economy has led to a shift from urban, city-centers to that of the suburbs, there was an increase in the sheer number of households. Pioneers to the community-development scene were people such as William J. Levitt and his mass production of homes that all looked alike. Through this mass production of similar homes, he was able to keep the costs down due to the routine nature of building them- better known as an example of economies of scale. In result of this shift and post-war euphoria, there was a generation known as the "baby-boomers" which brought an unprecedented number of consumers into the market. This generation saw reforms of the educational system which offered a better situation for children. With this reforming of education, there was a great shift from blue-collar to white-collar workers that benefited corporations which were growing and needed more employees.

Due to the spike in consumer demand, previously luxury commodities were becoming available to the masses. Telephones, personal washing machines, and the telephone were becoming much more widespread than before. It is from the shift to oil and modernization of the factory environment which gave corporations the upper hand. As oil had become commonplace, ships were able to travel further than ever before. With the implementation of automaton in the factories, workers were physically less taxed and were now producing many-fold what they could have done before such automation. Lastly, with the additional spending on infrastructure by President Eisenhower, roads were now a viable source of distribution and allowed domestic cooperation and logistics to be expanded.

The final nail in the coffin for economies of scale was the global cooperation founded following the Second World War. The world was weary of past decisions after

World War 1 and wished to never return to the state of despair from The Great depression. As the United States was one of the few countries not left in shambles after World War 2, it symbolized an economic strong-point and solidified the United States role within the global economy. Through such policies as the Marshall Plan, the United States attempted to extend its economic and political influence around the world.

Due to a post-war period of economic boom and wanting to remain with an advantage, large companies were rushing to fill the new consumer needs to the U.S. It is through the mass production of commodities that companies fought for the most streamlined operations and lowest costs. As seen through the automotive industry, there was an introduction of mass producing and innovations that allowed such growth to occur. There was a shift from non-powered platforms to modern day power steering, air conditioning, power brakes, and automatic transmissions which allowed for automation in the workplace. While any company could gain access to these new technologies, it was through economies of scale that the biggest companies would produce at the lowest cost and drive out all other competition.

The economies of scale from which industrial and manufacturing companies were able to gain success played true through all aspects of the economy. The single biggest influencer upon modern day businesses is the introduction of computers. While a MacBook was not available in the 1950s, there were rudimentary computers used solely for calculations which could streamline operations for a company. The first computers would take up an entire room and perform less than what a modern iPhone is capable of, however; computers used to be very expensive.

As seen with the United States governments purchase of the UNIVAC 1 for a

price tag of just under $500,000- adjusted for inflation, this room-sized computer was worth nearly $7 million. This great cost is what kept smaller businesses from attaining the same computational power as larger corporations, giving larger companies the upper hand. Due to the large scales of conglomerates and corporations, there was a barrier of entry created for smaller businesses into the economy. The new technology helped corporations take bounds and leaps in their business operations, allowing for a single source of computation rather than a room of human calculators. While the technology was crucial to advancing a business, it is the economies of scale which prevent smaller businesses from gaining a competitive edge.

While economies of scale can be exemplified by factories and production, I am going to focus more upon the economies of scale that prevent smaller businesses from attaining the same technological tools as corporations. Due to the great initial investment required for new computers, small companies would miss out on the opportunities and advantages of computers for years.

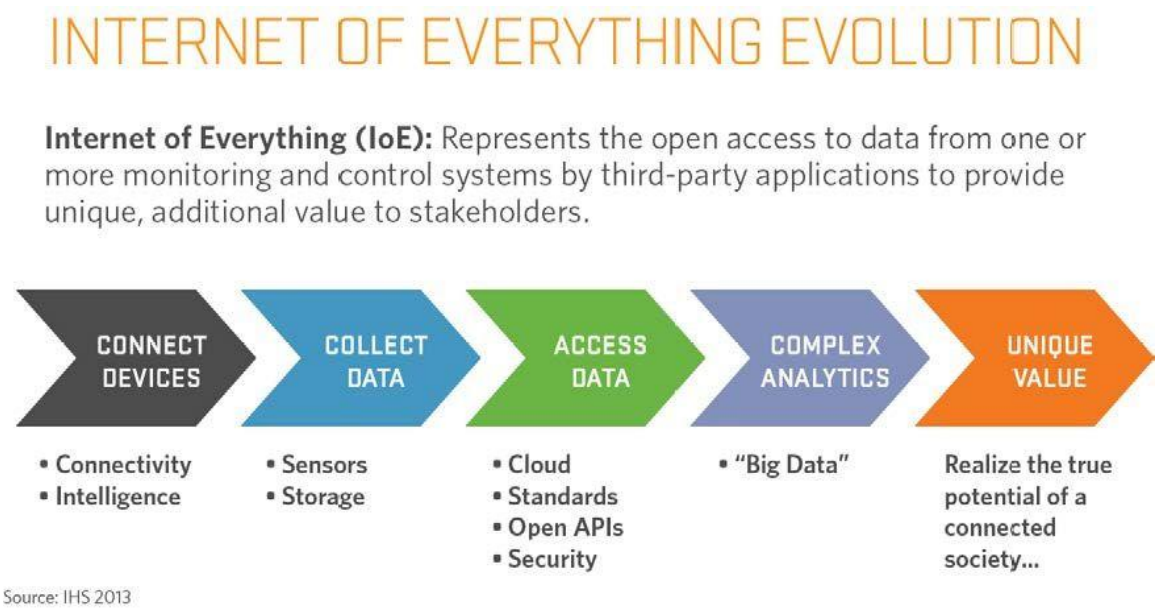
IV. INTERNET REVOLUTION

The internet revolution is recognized as the fourth Industrial Revolution as it marked yet another great pivoting point for society as we know it. Back in the 18th century, calculations were done by hand and all things were analog. In 1947, there was a shift to a much more modern technology of transistors invented by John Bardeen and Walter Houser Brattain. At first, universities and businesses worked to create computers which could replicate and automate some of their manually performed mathematical calculations.

Within the next 15 years, there had been leaps in technology from which one transistor now became a hundred transistors housed upon a single MOS integrated circuit chip. Again, in 1958 there was a groundbreaking invention of Jack Kilby and Robert Noyce as they unveiled an integrated circuit, or computer chip, which earned Kilby the 2000 Nobel Prize in Physics for his work. This leap in technology is what fueled the race for personal computers. Due to the new techniques regarding hardware, companies such as IBM were able to bring the cost of computers down drastically, while simultaneously, the intricacy of the physical hardware went skyrocketing.

In the 1970s, there was an introduction of computers to households which marked a shifting point for technology in every-day life. As the world was switching from analog to digital, businesses had created entirely new job titles such as a data entry clerk. The digital revolution can be broken down into four distinct phases of development: data processing, personal computing, network computing, cloud computing.

Figure 3.



1. Data Processing

This was the first form of technologies being used for modern day applications. Data processing is founded upon inputs producing outputs. Data goes into a computer, it is processed, and then outputted. In the first phases, there were database systems such as IBM's databases which utilized SQL and thereby has increased the span of data processing. SQL is a standardized and expressive query language that can be read somewhat like English. SQL has allowed for vast amounts of users to be able to use data processing as they no longer rely upon programmers. SQL has also increased the amount and variety of applications relevant to data processing such as business applications, analytics on churn rates, average basket size, year-on-year growth figures, etc.

2. Personal Computing

With the introduction of database capabilities, it was not long before computation capabilities reached the hands of consumers. In 1974, a small firm named MITS made the first personal computer, the Altair which marked this shift into personal computing. Unlike large, costly computers before, personal computing brought an era where consumers were not required to write their own programs. Many of the new systems utilized commercial software to avoid issue regarding usability with coding. This entails a form of licensing where you must purchase some software's to begin fully utilizing your computer. This is however different from mobile systems in which software is often only available through manufacturer-supported channels. This marked the true beginning of the internet as we know it.

3. Network Computing

Network computing marked the shift in the digital revolution where computers or nodes began working together over a network. The two basic models of computing are:

- Centralized computing- computations are facilitated through a central location, utilizing terminals which connect to a central server
- Decentralized computing- where computing is done at individual stations or locations and each system has the power to function and run on its own, individual from other locations

Through the development to technology, network computing has become more prevalent. Due to the creation of cost-effective and easy to use products like wireless

routers, an average computer from home can be turned into a local area network. Computers have begun speaking to another and there has been a streamlined channel for communication created. This has ushered in a new era of computing in which consumers are entrenched within the internet and receiving live-time results, creating the platform which would lead to cloud computing and the ultimate space for small businesses to reach the consumer.

4. Cloud Computing

Cloud computing marked the final shift in the changing of economies of scale, allowing small businesses to seamlessly access any resources they might need. In short, cloud computing is supplying of computational services—such as "servers, storage, databases, networking, software, analytics, and intelligence—over the Internet, or the cloud, to offer more readily available innovation, flexibility of resources, and economies of scale" (Microsoft). Typically, you would pay only for the cloud services that you use, which would help to lower operating costs, run infrastructure in a more efficient way, and provide scalability options as business needs might change.

Cloud computing offers a variety of benefits which I would like to elaborate upon below:

- Cost- Not only does cloud computing remove the need for expenses in relation to procuring software or hardware, it also saves money from not needing to monitor these software's. There will be less electricity used for data processors and you will not need as many employees to operate in the

IT department.

- Speed- A majority cloud computing services are provided on-demand which allows for a live-time flow of great amounts of computations, accessed through only a few clicks over the internet. This has provided businesses with a new level of flexibility and allowed for easier planning of resources.
- Global Scale- One benefit presented by cloud computing is the ability to scale a business elastically. In relation to cloud computing, this translates to supplying either more or less computational resources when they are needed. The businesses which use cloud computing also have the luxury of being able to access these services from any location.
- Productivity- Cloud computing has allowed for the removal of hardware from businesses, freeing up their IT department to spend time achieving more important business objectives.
- Reliability- Cloud computing has made backing up data, disaster recovery, and business continuity easier through all data being stored virtually in the cloud. As a flood could have damaged years of data from a business, it is all saved through the cloud which allows for the data to be mirrored at any site which has access.
- Security- Many cloud providers have a lot of policies, controls, and technologies in place to help strengthen a businesses security. Through the cloud, one does not have the additional worry of protecting or backing up the data of a business.

With cloud computing, there has been many new opportunities created for small businesses to access high-level software to better run their business. The widespread use of such software's has allowed for the options to be very cost efficient even for small businesses. Through cloud computing, small businesses have gained the capability to have the same capabilities as large corporations, and therefore they are able to challenge the economies of scale and compete with these large corporations.

V. CLOUD COMPUTING

In short, cloud computing allows for the on-demand network access to shared computing resources. This has become a model for managing, storing, and processing data online for many businesses. With the introduction of cloud computing, there have been advancements in the general technologies that businesses use which has caused a great shift in the business environment. Cloud computing has led to the advancement of technology encompassing networks, leaps in storage, and a processing power which has led to the changing point of computing.

Some characteristics of cloud computing include the following:

- The access of having an on-demand service as the service truly is available anywhere, anytime
- The ability to have access to the service by using the internet as a medium. If there is internet connection, then service is available
- The ability to pool resources as a company and allow many end-users to update and manage resources through a cloud-based service and can thus access can be granted to all people within the company
- There is great scalability through cloud computing as the resources are elastic and can conform to any needs that the company may acquire

Through cloud computing we have accessed the ability to provide applications and services directly through an internet channel as seen through the three different forms of

cloud computing: Software as a Service, Platform as a Service, and Infrastructure as a Service. The main that I will be focusing upon is that of Software as a Service but wish to describe all three in relation to one another.

IaaS

IaaS offers the computing architecture and infrastructure or computing resources through a virtual medium, allowing many different users to access the information. These resources include data, storage, virtualization, servers, and networking. Vendors are mostly responsible for the management of the four resources I have just mentioned. Users, however, are responsible for the management of all other resources which might include, middleware, runtime, applications, or data. IaaS is mostly used by system admins and some examples are Amazon's EC2, GoGrid, and rackspace.com. The main benefits of using IAAS is that the cloud now provides the infrastructure, there is enhanced scalability for businesses, and there is a great deal of flexibility created.

PaaS

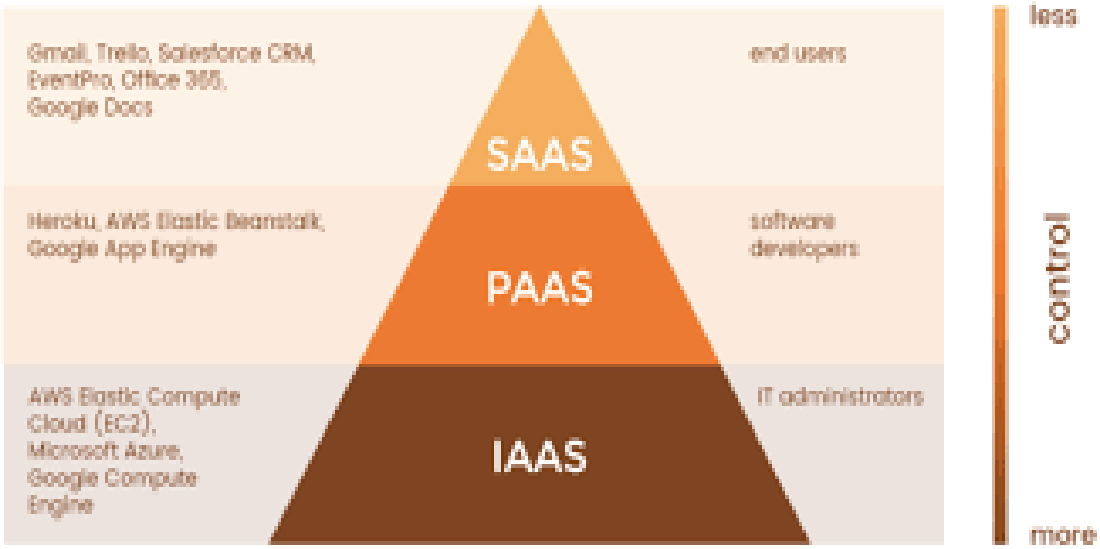
PaaS is the development environment, which is composed of a programming language, an operating system, a web server, and a database. This allows users to build, compile, and run their programs without their own underlying infrastructure. With this case, you only manage the data and application resources, and all other resources would be managed by the vendor. PaaS is mostly used by developers and some examples include force.com, Heroku, and Google App Engine. The main advantages brough by PaaS include the cost effectiveness, rapid deployment of resources, easier development of web

applications, and there are options for either private or public deployment.

SaaS

SaaS is the access to on-demand service through a paid subscription for the software. SaaS acts as its own independent platform and is run entirely through an internet application. Due to the remote nature of SaaS, you can give access to many different end users and never have to download a single application. Any software needed for everyday business can be accessed anywhere, anytime via a web browser. All the computing resources for SaaS are managed by the vendor which allows the business to focus entirely upon its own operations. The main people who use SaaS are end consumers. Some examples of SaaS that many people may know of are Gmail, Salesforce, and Office 365. The main benefits presented by SaaS are that it is universally accessible from any platform, there could be no need to commute for work, it is excellent for collaborative working, and that the vendor is providing modest software tools which you might need. SaaS has marked a shift from the times of hardware into the seamless integration of business functions into a cloud operating system.

Figure 4.



With this shift to cloud computing and Software as a Service, there have been numerous opportunities created. Cloud computing has allowed for the seamless integration of software's into businesses. This has made it easier for small businesses to receive the proper software's for which they need to operate. As there is a throwing away of the economies of scale previously at work within the business environment, small businesses have the same capabilities of large corporations. While the applications might cost more for large businesses, it is due to their sheer scale. With cloud computing, small businesses can get in on the forefront of technology and utilize it to compete with larger scale businesses through a means of using the same tools to increase efficiency and effectiveness.

VI. VARIOUS TYPES OF SOFTWARE

Software not only makes a computers hardware perform crucial tasks but can also increase a businesses efficiency. Some software's can even lead to new ways of completing everyday tasks. Therefore, it is a crucial asset to businesses and should be chosen carefully so that it matches your specific business needs.

Before making an initial investment into software, you should think about what you want the software to do. Some benefits presented by software that one might desire include cutting costs due to automating routine tasks, improved customer service, enabling employees to work more efficiently, and the ability to communicate and collaborate electronically with different suppliers or partners.

There exist various types of software for business applications such as Bespoke, system or application software, and packaged software.

- Bespoke

  With bespoke software, it is possible to write the software specifically for your own business. You can either write the software yourself s or you can have the software written by an external supplier. With the specialized capabilities of an external supplier, you could get the exact functionality desired but there would be a need for future support. The main drawback to bespoke software is that it can be costly. Due to the high price, this is unlikely to be a cost-effective option for small businesses.

- System or Application Software

  For the most part, system software is not useful directly to business operations but does give usefulness to a computers hardware. This type of software is created for a specific use such as accounts or word processing which are key to a business's functionality.

- Packaged Software

  Packaged software is a standardized and typically low-cost option to software needs for a business. This is a collection of programs which have similar functions or features. Prime example of this would be Microsoft Office and their applications such as Excel, Word, and PowerPoint. Packaged software often proves to be the best choice for small businesses as it is likely to meet the needs of that business through a low-cost means.

Through cloud computing, there now exists a large market for which businesses can gain access to key software tools. With this shift to an even playing field among the various sizes of business, software requirements do still depend upon the size of a business. I will focus upon elaborating the difference between small and large sized companies to show the varying requirements of each.

While no small business is entirely the same, there are some basic functions which have been automated through digitalization. These can be described as the need for a collaboration software, sales software, marketing software, management software, and accounting software. Many of these different applications can be used for free which has allowed for any savvy business to reap direct benefits through the increased efficiency of

their operations.

Communication

With a business, collaboration is at the heart of the operations and it is crucial for everyone to be on the same page, whether it be employees or suppliers. An example of a free communication software is Slack. Slack is one of the better-known collaborative tools and has found particular success within small businesses as “65% of businesses say they use slack today” (Kent). Slack is essentially a messenger application used for business-to-business interactions. In addition to messaging, one can transfer files, share a screen, or make video calls which can bring an entire organization together even through a remote nature.

As with the 2020 pandemic, we have seen the instant successes of Zoom as a video conferencing tool. Though the pandemic called for a new level of remote collaboration, this could be a new norm and software has only made it easier for businesses to bridge the gap between office buildings and working remotely.

Sales

With businesses, sales are the lead source of generating revenue, so it is of key importance to empower a salesforce. Through providing an adequate software solution, a business can align its employees and gain insight in regards to its customers needs. One of the best free sales tools is Streak by Google. Streak is built directly into Gmail and allows for businesses to keep track of their operations related to sales. The app is very easy to use as it is essentially a database for which you enter information. Streak allows

businesses to capture consumer data through emails and contacts, view tracking statuses of orders, split threads, and have integration through other Google applications as it would be considered a package software.

Marketing

To gain access to potential consumers, businesses must actively commit to marketing. Businesses can only rely upon word of mouth and referrals to some extent as the digital age has ushered in a new era of marketing. One of the key ways to speed up marketing campaigns is through understanding your audience. A free option for doing so is Hotjar which utilizes heatmaps to track where customers spend their time on pages. This allows for you to see the most used buttons upon a webpage such as in the below figure.

Figure 5.

With applications such as Hotjar, businesses are able to track for customer satisfaction and conduct polls or surveys which is crucial to the integration of a business into its respective industry. Other software's include Canva which is a tool for editing images and graphic design. This visual editor allows for companies to create professional assets and spread their brand with readily accessible templates for various communication platforms. Canva is very easy to use which allows cross-skilled team members to utilize this application as opposed to design specialists.

Management

Management tools for businesses can include everything from resource planning to client management which often requires businesses to use more than one application. One of the prime free management software for businesses is Odoo. Odoo offers a free version for beginners and allows customer resource management and general resource management capabilities. Odoo allows you to track the time that employees spend upon tasks and to assign projects. Through an inventory management system, you can track products popularity through sales insights which makes it easier to manage resources effectively. Another example is Plutio which was crafted to simplify running businesses. This app focuses upon the management of time and keeping employees on track with deadlines.

Accounting

Lastly, we have accounting software's which are utilized to keep business on the right side of the tax office and assist with things like cash flow projections or asset

management. The leader in free accounting tools for businesses is CloudBooks through its invoicing and accounting tools presented. This allows you to create professional level invoices and streamline online payment transactions. Another product is that of Wave that can be accessed through Google and offers easy to use reports for tracking payments or expenses. Through premium additions to Wave, you can connect accounting software's to payroll and other payment tools.

As I believe that packaged software would be the most beneficial to small businesses due to the ready-to-use nature of such, it is crucial for businesses to give themselves the necessary tools for success. With the availability of cloud services for free, small businesses have never had more access to more tools. With investments into paid services, small companies can gain access to even higher functioning applications which can be integrated. There are often software's which are created for niche markets as Mindbody is a business management software specifically designed for gyms, spas, and salons worldwide. These services offer a means for streamlining operations and tracking functions in a timely manner which are instrumental in increasing efficiency.

Despite small businesses having access to the same tools that big businesses do, there are still some limitations. Large corporations would have the capital to invest into the highest-grade software solutions which can integrate all aspects of business through a complete enterprise system or an enterprise resource planning software.

Enterprise resource planning software (ERP) is the software which organizations use to manage all day-to-day business activities such as supply chain operations, project management, risk management, compliance, accounting, and procurement. ERP systems

connect a multitude of business processes and allow for a flow of information between them. An example of an ERP system is Oracle with their packaged software solutions. While small businesses can use software for free, there is a whole new level of connectivity within business brought upon by large corporate software's. As with the partial dissolution of the economies of scale, large companies will always have access to more capital and therefore better resources. While some companies might spend millions of dollars upon software, it is the vast market for software with cheap solutions that has offered small businesses with a mode of entry into a market. Through utilizing resources properly, small businesses can challenge the economies of scale and do business in a professional way through a cost-effective means.

VII. CREATING A DIGITAL PRESENCE

With these advancements in technology, there have been numerous new ways created for which a business could penetrate a market. There now exists a state in which society is consumer with the internet and this has allowed for small businesses to reach the palms of countless consumers with the right marketing. I will look at three of the many different ways for which a business could create a digital presence: through the use of web pages, online advertisements, and social media.

Utilization of Web Pages

With the latest technology, businesses can establish themselves within an industry in many ways such as through their website. When someone has a question of any sorts, they turn to the internet. With this focus upon the internet, it is of great importance to effectively create a digital presence. By building a website, one can display any relevant information that they desire virtually through the web. This allows for consumers to have live access to the businesses information without having to physically contact someone as decades before. With websites, businesses can perform functions such as receiving orders and answering questions 24/7 which has increased the accessibility for consumers. Through building a website particularly well, you can gain success for your business. Consumers are that: consumers- and they will behave certain ways to stimuli. If there is an attractive looking website, consumers will enjoy it and be more likely to continue doing business and or recommend this business to a friend. With technology as it is, it would be short selling a business to not invest into a proper website development as it can

boost business.

Online Advertisements

In addition to website development, businesses can create a digital presence through internet advertisement. With the ease of the internet, it has become increasingly effective and cost efficient for businesses to use the internet for advertisements. Due to the advancements in cloud technologies, it is now cheaper than ever for people to access and use the internet. As a business could begin advertising through internet websites for as low as $11 a day, small businesses are no longer limited by economies of scale. and can gain extra reach with spreading brand awareness.

Due to the advancements in technology, consumers have become more centered around their devices. People find themselves leisurely watching services such as Hulu or shopping online and through doing so, they are subjected to advertisements via the internet. This has allowed for business to gain access to the personal lives of consumers and make an impression during a consumer's spare time. By doing so, retail businesses can capture consumers during their online shopping and direct them to the website of the business. There has never existed such a business environment where a small and large business can be advertised through the same channel, and through this opportunity, small businesses are able to steal the consumers attention and beat out large companies.

Social Media

Lastly, as I will discuss in my next chapter, social media is of key importance for creating a digital presence as a business. As consumers are drawn to the internet, social

platforms for messaging and communicating were born. These platforms draw millions of consumers to the internet for the consumption of media. Through these eyes upon social media, there has been a medium created in which businesses are able to directly reach the consumers. Despite big businesses having the same capabilities, there has been a leveling of the playing field in terms of creating a digital presence. Advertising which could have been previously unavailable to small businesses is now more readily available than ever before.

VIII. SOCIAL MEDIA

One of the most valuable methods for advertisement is a relatively new form of communication known as social media. Small businesses stand to gain the most from these various communication platforms as there are just about no barriers to entry. Any person can create an account and since it is all digital, anyone can update or view the page as much as needed. Since these platforms are free, there exists no economies of scale which would favor a small business. In addition to the free accounts, advertisements are also relatively inexpensive especially when compared to other forms of advertisement.

From the early days of communication through online chat rooms, we have emerged into an online society where nearly "half of the world's population or 3.5 billion people use social media every day" (Dean). It is through tis interconnectedness that far away countries can share and collaborate effectively. As a small business, it is imperative to grow your brand and it is through social media advertisements that the mass of consumers can be reached.

As any size company has access to these platforms, small businesses have access to analytics through the social media sites they use. There are data trackers which can populate spreadsheets with demographics of viewers. Or more simply put, small businesses can inexpensively track their consumers demographics and advertise more specifically to the biggest demographics. Social media also allows for personalization of advertisements to each consumer, offering the most suited advertisement based upon past behaviors.

The benefits of social media continue for a company as they can increase outreach and build their brand recognition through an existing influencer. Influencers are internet sensations and have proven very effective marketing tools. While the rates of pay are based upon someone's popularity, it is well worth the money. Some of these influencers receive millions of views per day and the companies can examine the influencers audience to decide which influencer offers the most potential customers to said company. For countless years, business has relied upon physical advertisements to get an outreach, yet with the age of social media, there are single persons who have millions of followers who are interested in what they support. Social media has truly marked a changing point in consumer behavior as brands have grown into million-dollar companies due to influencers promoting their product adamantly. The time of trends has emerged, and it is the new wave of youth and social media which is driving purchasing decisions.

Social media has also made it easier for small businesses to create as system of brand loyalty through their online presence. Instead of an inactive website, some brands have taken this on the offensive and post regularly on social media platforms to get their consumers engaged. It is also through this presence that customers are more likely to share a quick post of some company. Social media has made the referral process infinitely easier for the consumer, doing away with the old ways of word of mouth- now all it takes is one click.

Lastly, when a business is functioning only for profits, it could cut corners and might rob the consumer of some value; however, social media has made the processing of customer feedback a free commodity. With the simple publishing of a post, you will get interaction and comments. This is the direct response of the consumer and has made it

easy for small businesses to conduct market research. Before social media, it was very difficult for smaller businesses to gather consumer feedback as they would rely upon email, phone calls, mail, or in person surveying. This great bound in customer feedback favors small businesses as they can actively monitor the feedback themselves. While larger corporations have someone, who operates the social media page on the company's behalf, a small business owner would be able to read and respond to comments in more genuine ways than a tech guru with no direct ties to the message of the company.

It is of the utmost importance for new and small businesses to have a presence on social media as it is a global platform which might as well act as the worlds stage. The reach is beyond any other form of advertisement and it has also proven to be the cheapest. While scrolling on Instagram, there is no favoriting of large companies' advertisements other than the value they spent on the advertisements. Anyone has the ability to get a web advertisement and it has been proven that more consumers than not shop online and conduct research through social media. It is from this open stage that small businesses have gained the ability to compete with large businesses on a global scale as an online entity.

IX. ARTIFICIAL INTELLIGENCE

As ingenuity has proven, all things can be improved and there shall always be advancements in technology. There has been an uptick in a type of technology known as artificial intelligence or any type of computer software that engages in humanlike activities. Due to the rapid technological advances, artificial intelligence has become an affordable option for businesses as it is valued between five and fifteen thousand dollars. While there is a somewhat large initial investment, it can shave down the workforce required and offer small businesses with an affordable alternative to having different departments for different tasks.

Artificial intelligence can be seen through the data processing that occurs on social media. Due to the automated nature of AI, it has already been implemented in many different fields of businesses such as marketing, sales, research and development, human resources, and calling centers. Now instead of having to hire a receptionist to redirect calls, artificial intelligence can route the call to the right phone. It is through this streamline of operations that businesses are able to save capital, and small businesses stand to gain the most as they are more dependent upon their operating cash flow.

Artificial intelligence has also been key in the distribution of products. From the warehouse to delivery, AI has changed the way a business operates. With the use of tracking devices on machinery or employees, AI has helped to streamline the output from factories. It can sense disruptions within the supply chain and either reroute products around the problem or sound an alarm drawing attention to the disruption. Previously, workers would have had to rely upon verbal communication to detect faults within the

factory, but now AI can sense problems with the machine that are not even visible. With the use of trackers, workers can also be prompted by an electronic device to keep them on track, scanning a product that is about to be moved and having the AI software already processing the movements leaving no need for the taking of a physical inventory.

Lastly, Artificial Intelligence can offer assistance with customer support. Instead of having to leave a phone message, there are AI chats which allow you to ask questions any time of the day. Through these chats, the software would also be able to gather data from the consumer and formulate more personalized feedback and advertisements.

Artificial intelligence has brought about an era where data is a very valuable resource when used correctly. Due to the ease of getting software programs and the declining price of such, it would be unwise for small businesses to not take advantage of this opportunity. It can directly reduce the costs of operating and offer customer research which is more in depth than ever before. Due to the increase in online activities, small businesses are shown on the same playing field as larger companies and could win over potential consumers. While companies can track their own internal operations, they are also able to track their competition and strategize to gain a competitive advantage. It is through the proper use of data that small businesses are able to gain an advantage over big corporations and build their own market.

X. GLOBALIZATION

Through the digital revolution, once great distances are just a few clicks away. Businessmen can conduct international sales presentations via a video or phone conference. Without needing to go fly to Japan to speak with a supplier, small businesses are able to facilitate any of their operations via the internet. With this ease of communication, costs of traveling and even domestic business arrangements can be reduced. There are no longer physical barriers to communication.

As seen through social media, the internet has meant a globalization of the market. There is nothing preventing a small-town business run by a father and son from reaching a Chinese market as long it is properly targeted. The avenues of communication have opened a floodgate of free slowing information which could have previously taken days or hours to reach across an ocean. It is this real-time communication of data which has allowed small businesses to be as well as informed about world trends as any larger corporation.

In addition to the vast number of communications that take place over the internet, there has been a creation of jobs entirely via the internet. Call centers are a prime example, or when a company has a location which processes calls within a country where it is cheaper to hire a workforce. Any time you make a call to a business and hear an unfamiliar voice, it could be the direct effects of the globalization by the internet, and you might not even think to connect the dots.

Because of the globalization of smaller economies into a world economy, there are ample consumers to reach, and it is upon the company to take the necessary steps to

secure their success. It is through the artificial intelligence processing of data and social media networks that small businesses are able to reach target audiences across the world. Through the globalization of media, most information is available via the web which offers more insight than ever before. Instead of having to read an article, you can watch newscasts from many different countries.

While the internet can be seen as a cohesive force, it puts those who lack it at a disadvantage. The internet has brought a vast array of information to the world table, however; countries who are struggling economically often lack the infrastructure for modern technology. There are still cities and villages around the world which have never experienced any sorts of technology. While one could view them as out of date, traditions and economic conditions prevent people from attaining information that is free and available to the rest of the world. A lack of information could be seen with villages who drink river water without boiling it for sanitary reasons. While one could point out that there are many things which seem backwards to a modern civilization, it only demonstrates the value of information created by the internet. Today when someone is feeling ill, they just google their symptoms and get a recommended course of actions. The digital revolution has made information so commonplace, yet valuable as everyday life is ruled by technology and its software.

XI. CONCLUSION

As a final dedication to the opportunities created by software's for small businesses, I want to highlight my key assertions.

With this paper, I have focused upon developing the progression from industrialism to the seamless nature of the internet through the following: how the current business environment has formed, what economies of scale are, how the internet was revolutionized and morphed into cloud computing, the various types of software a business might utilize, how businesses can now create a digital presence through means such as social media, and lastly with the highest complexity of software, artificial intelligence.

Through the Second World War, the United States was challenged in regards to production capacity. A new and diverse workforce stepped up and set the norm for an industrialist economy who utilized mass production. Through this mass production, many largescale companies formed and grew into conglomerates. These corporations have the benefit of economies of scale as they have more access to resources and experience lower costs per product produced through their sheer size and capital. Economies of scale has been a barrier in preventing many small or medium sized businesses to compete on a larger scale.

With the introduction of computing and its development, we can trace the changes that have been undertook. The main phases of computing are the initial processing of data which had evolved into personal computing, the connection of multiple computers through network computing, and finally ending up at cloud computing, or

the delivery of software services via the internet. A once half-million-dollar computer only affordable to the government has reached the consumer market and with its evolution, software has become increasingly less expensive. With cloud computing there has been an exponential leap in regards to technology and its accessibility. Businesses are now able to have on demand services, pool their resources for multiple users to access, access the software anytime or anywhere, and there is a new ease to scalability created through cloud computing.

While the software technologies have become more readily available than ever, there are almost a limitless number of these different software's. The main three different types are bespoke where one would write their own programs, system or application software which is created for a specific use such as account management or word processing, and packaged software which is a collection of programs with similar features for a generally low cost. Businesses have gained access to similar software's as corporations which has done away with the previous economies of scale and allowed them to compete with these large corporations.

Through the internet capabilities and use of software, small businesses are able to effectively create a digital presence in many ways. The three main ways to create a digital presence that I focus upon are properly designing a web page, advertising online, and utilizing social media. I think that the single biggest way for companies to spread their reach is through social media as there are nearly four billion users worldwide. There exist already successful people on social media, better known as influencers, which have an existing fan base full of consumers. Through strategic partnerships a business can gain vast reach and spread their brand awareness greatly.

The technological innovation has not stopped its growth and there seems to be no end in sight. With artificial intelligence, we have begun to give computers decision making capabilities like humans who can also preform some of the same functions as a human. The main benefits to business are that data can be processed in accelerated ways, distribution can be fully monitored through live tracking of products or workers, and that customer support can be streamlined through automation with artificial intelligence.

Lastly, I hope to have emphasized the globalization which has occurred due to the technological revolution and what that means for businesses. As with humankind, we love to advance and form relationships. With the internet, there are no physical barriers preventing international business opportunities. A business in Japan can do business with someone in Mexico via videoconferencing application such as Zoom through the live feed of information brought upon the internet. Also, businesses can access these worldwide consumers through the internet which brings upon a volume of consumer many times that of before the internet.

I think that amidst current trends, there has never been a better time for small businesses to enter and dominate a market. Society has evolved into a complex and diverse ecosystem where ideas are valued, and thoughts shared. Due to the recent innovations in technology and the availability of software's, small businesses can shape their brand in ways never seen. With the transition into social media, there has also been created a new medium for advertisement- collaboration. A good portion of advertisements use celebrities as spokespersons which catches the audience's

attention based on the celebrity alone. As with social media, people have become millionaires from social platforms, and this is a key opportunity for small businesses to get enter new markets based upon an existing fan base.

These are prime conditions for small startup companies to grow and develop as the world is more connected than before. The cost of entry is at an all-time low and consumerism is at an all-time high which should encourage oneself to try out that small business idea. Companies do not require the same overhead as with the formation of the conglomerates and the wider availability of software has made it possible for small businesses to compete in a global market. I believe that this has marked a shift in the power dynamics of business as small businesses are now fully able to compete with the “big business”. I would urge any small businesses or entrepreneur to cash in on this opportunity and see how far it can take them.

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