The Birth of a New Revolution

The 4th revolution and its developmental disruptions

Samridh Seth
(Founder and PPA)
Black Komodo Investments Limited

Abstract

This paper is part of an informative series of research and development, displaying parts of our focus. This part of the series in particular focusses on the new emerging technologically led industrial revolution and the potential possibilities on how it will transform the world and how to take a part in this change.

This paper is the result of intense research of the history of development and revolutionary advancements in economy's and technology, with both theoretical and practical applications.

Herein it will outline the changes that have taken place over the course of the industry as well as point out the missing gaps that have been formed by the dynamically moving and changing times. Furthermore, it will provide insight into the current state of the development and how the world of is due for a disruptive change in course as well as in application to the world.

Technology improves efficiency, it too has cycles of evolution and there are periods of stagnation, but when one of those cycles propels our civilisation to new found heights, there is advancements which take place at truly unprecedented rates. The only way to keep up is to adapt and absorb.

Here I will be describing the POP principle, which is the Piece of the Pie of change principle which was developed as part of our investment strategy to be part of the change taking place around us and building world that we live in.

A little disclaimer before we begin: I/We do not push for one to buy stocks now or later, but if you do, do so in a safe and secure manner rather than one of speculative and half understood nature (such is the intended aim of this paper), for that, there are casinos all over the world, where you would have better odds of faring than in this game of dynamic value.

Black Komodo
Investments Ltd.

Introduction

There are a few stages to the birth of anything, whether that be an offspring, an idea, a movement or a creation of a new, unique collection of energy. First, there is the conception then the division of cells till it gets noticeable enough and finally the scalability of the organism or idea or construct you are creating and then the release. The concept of birth can be applied across any creation, the same way, the stages which pre-date the moment of birth can be applied across a variety of creations and anything which develops goes through several cycles of these stages. Nature is life's greatest re-cycler, quite literally, life moves in forward moving cycles, which inevitably have overlapping similarities with events in its history. Since we are too a part and offspring of these natural cycles of evolution, human civilisation too revolves in cycles a does the planet around the sun and that around the centre of our galaxy and that around the centre of mass of a collection of the galaxies and that around…. so on and so forth. Development cycles of our human civilisation also have a pattern of revolution. These take place due to our inbuilt curiosity and the selfish desire for our civilisation to last as long as we can possibly make it last. To satisfy these two innate demands we innovate and invent tools, we have been doing so since the caveman era (I will refrain from going through every single one and will skip large periods of time in efforts to not bore you) , we built tools to communicate, with paintings, language, both signed and spoken, we created tools to protect ourselves, provide shelter, improve our daily activities such as hunting and gathering with spears, fire, baskets, homes, roofs, structures and then more so to keep the social piece with shrines and sculptures. Then transportation devices such as wheels, carts, drawn by cattle, horses, people and then we hit modern civilisation. This is when we compartmentalised these tool building skills into industries and we had the first formal industrial revolution.

The first industrial revolution (1760s – 1830s) was mainly confined in one nation since it was the most dominant nation with the largest kingdom that ever existed at its peak during this period of time, The United Kingdom or Great Britain. This period of time was filled with the mechanisation of the textile industry, the invention and widespread use of steam power in transport with ships and trains, the famous steam engine. The creation of factory systems where machines and people began their what would be a long and interdependent relationship. This resulted in rapid urbanisation and the beginning of the transition from a first level economy of agriculture to manufacturing and subsequently the industrialisation of processes and products. This created a divide between the social status of society and that divide only went on to widen as time went on. This revolution spread from the U.K. across to the nations under their rule through Europe, the Americas and lastly reached Asia, a precursor for globalization.

Post that there was a period of silence in terms of development for 40 years, where the first industrial revolution's changes were settling in and a new normal was being formed. This period of stagnation is part of the S-curve of development just as the S-curve of learning exists for individual people, civilisations have one as well, where information dissemination takes place, where it takes time for the uninformed to be informed and to get a grasp of what is happening, while in the periphery a new revolution has already begun. This allowed for those who innovate to test, fail and repeat until they brought forward the second industrial revolution.
The second industrial revolution (1870-1914) consisted of the greatest modern inventions of all time, it was the electrification of everything. This electrified almost every industry if not all industries. This was the turning point for humanity from a slightly advantageous civilisation we truly transformed into a different species the moment we understood electricity, since it allowed us to invent the telephone, the light bulb and internal combustion engines, all of which we still use today and without which we wouldn't have today. This quantized energy, breaking it down from the traditional sources into a more usable, compactable and distributable form and allowed us to use it more efficiently, unlike sources of energy such as fire which were extremely inefficient and far more limited than electricity since it couldn't be broken down or distributed in an economically viable fashion. Unlike the previous revolution, where we didn't entirely depend on the advancements in those technologies, this revolution changed the trajectory of our civilisation forever. From this, we expanded railways, making transportation more widespread connecting people over longer distances which subsequently only got longer and longer until we left our own planet. Steel production allowed us to construct our imagination into reality to last through storms, earthquakes and other natural disasters, which we couldn't imagine before it, still being a major global industry today, on which we rely very heavily. The famous assembly line was invented by none other than Henry Ford and the age of the affordable car took place, creating the most useful mode of transport on which we have made little to no change rather developments in its manufacturing and slight changes to the type of fuel and efficiency of the vehicle in terms of speed and use of fuel. The rise of the corporate culture came from this revolution and is what propels us forward today. The telegraph and the telephone both were formed during this period of time allowing communication across borders, which fuelled and pushed globalization. These changes caused society to divide further giving access to the working class to rise up the ranks into the middle class, however creating a further gap within society and changing the nature of relationships and social interactions. Scientific processes became more efficient and advancements in research began to take place.

This revolution created technological advancements which touched the daily lives of people and changed them for eternity and advancements we still rely on today and couldn't exist without. However there was even more change to take place, a sort of tweaking on the gigantic leap we made from fire in lanterns to the quantization of energy in a glass dome.

There was once again as with a learning curve a plateauing period of stagnation before the third revolution was ushered in. This period of time was riddled with wars and partly due to the technological advancements taking place such as the nuclear technology and ammunition advancements.
The third industrial revolution (1940s-2000s) took us from analogue and electrical machinery and technology to the digital revolution where technology moved from the mechanical to repeatable process to an automation of production and the emergence of automated, programmable services, leaving the heavy lifting to our mechanical counterparts while we focussed on the more cognitively load bearing parts. The last two greatest inventions, which once against transformed our civilisation exponentially was the emergence of the world wide web, the internet and nuclear energy, the transition to renewable energy (which is still in the works). This ushered in the era of computation, which began with dismantling world war two and the birth of computers with Alan Turing and his enigma machine, this led to the development of programmable hardware. The hardware and academic exploration led to the creation of computers and the widespread use and distribution of computers began with personal computing, leading to a technological advancement like no other. This personalisation and automation of technology led to a sudden burst of exponential cognitive and physical development within a very short period of time, developing much shorter than ever before and only to get shorter as time goes on. The rise of robotics began, taking the laborious physical load off of us and putting it on to unanimated objects which increased the efficiency and productivity infinitesimally, reducing the need for human intervention in some cases. Software developments took place exponentially as well, integrating with physical objects to improve our everyday lives and to improve communication as I am doing now, taking the load off of physical spaces and digitising space itself by creating a metaphysical space within energy itself. This software development advanced telecommunications, improving upon the Graham Bell telephone and creating smart phones which hold almost all human information at our fingertips, creating those finger tips into more than just appendages on our bodies and into multi-use pointers in the digital world. Globalization was extended post the wars with peace treaties and partnerships to improve the efficiency of developments leaving specialisation to a few and collaborating for the general benefit for humanity. This changed the way societies interact, rather than being territorial and hostile to being welcoming and collaborative, leading to further and faster developments and advancements, reducing the timeline and pushing us further beyond comprehension in some cases for the most part, with development staying in the periphery without the need to be completely disseminated into the rest of society, reducing the time to push us further into another revolution within this one. With social media being a large change in the way humans connect with one another and interact with the world around us, changing our biological brain chemistry and the invention and the discovery of the internet of things to be able to monitor and connect to everyday objects.

This revolution not only improved daily lives and is still doing so, it began to interfere and change our brain chemistry and convert us into once again a new digitally enabled sub-species of humans. We have continually become less and less like our cavemen cousins and more and more estranged from the wild nature of our biology and more into a new species in its entirety, with the ability to affect change

everywhere and to almost anything. We have become the most dangerous as well as most advanced species that we know to have ever set foot on this planet causing us to question if that is even possible, that there has to have been another even smarter species, somewhere out there. However, we have reached a cross roads and I believe we have long crossed that road and created our own version of this smarter species ourself. This not only helps us with our lives but in some cases can and will begin living it for us, at least the parts we call "mundane". This time we have skipped the stagnation point since it arrived within the previous revolution, however, most of us were too busy adjusting to the ongoing changes to realise and now this revolution has begun to emerge from the periphery it was hidden in. Additionally, this intra-revolution is what we need to truly break out of the previous one and for it to take us further into a full blow industrial revolution, improving and even helping us solve biotechnological crossroads and dead ends we arrived to during this one, nuclear bottlenecks we reached and hardware limitations we have almost completely exhausted.

The Growth of Information

Information grows like wild fire, quite literally like wild fire and subsequently so does development. Wildfire doesn't start at the fire. It starts with the ingredients required to ignite the fire. In the case of a wildfire, that is the collection of dry, thin material with a large surface area, packed together and with the addition/ creation of heat through friction or rising temperatures, usually dust, dry leaves, dry grass and a particularly hot day with dry wind. The temperature has to rise and continuously be focussed along with friction taking place over a period of time, as well as more material drying and there being a large plane of land drying in order to allow it to spread. Once it passes the threshold to break the bonds between the atoms of the dry material and cause the chemical reaction of combustion, the fire spreads and then it just grows and grows, consuming the oxygen available in the air and the fuel which is the dry land around it, leading to a blazing, soaring flame. These are usually extremely hard to put out and can cause massive losses of wildlife, land and in some cases people as well.

Information works the same way. Yes, today's world has a lot of information and it is available to virtually anyone with an internet connection. However, I say virtually, to highlight the lag in the dispersion of information. Information too takes its time and certain conditions need to be met in order for it to spread and become common knowledge, or at least knowledge to most people, not necessarily common. The inventors, ideaists and innovators represent the drying, exploring the edges of a niche field or pushing the boundaries of an abundant field, creating a new niche are within it. They reach a point where they innovate and find the piece of the puzzle which creates something new and unique. They have the most concentrated information. The next level of dispersion is those that aren't innovating but are deeply interested in those fields, they begin drying, consuming this knowledge, spreading it out, they usually reside in academia and on the highest rungs of the academic ladder. This starts forging a path for the information to spread. Then those

that are ready to back the projects, they know about and the very rare media outlets get a whiff, drying up a further path for the information fire to follow. Soon those in these pockets of information start spreading it to those in their individual communities or forming new communities about it, growing them. Today, through the use of social media, the speed at which is goes from this point to on most people's phones, in-front of their faces has been drastically reduced, however, they still usually don't catch on. This is because they don't have the knowledge to know what it is and this is when the wild fire grows, when it is right in-front of the majority of people and the fire is in a full blown blaze when everyone from your nephew to your grandfather is talking about it and they are excited about it or telling everyone they saw this coming. This makes the innovators on the periphery and the common folk at the core of the information blaze. While they are burning bright with an overwhelming amount of information to learn which takes a lot longer than when they received it, the innovators have already pushed forward and furthered the advancements in that field even more, which will once again go through this loop and so on and so forth. This lag of information creation and information dispersion is where the learning and development curves come from and as time and development improve exponentially, the difference between these two reduces and folds in on itself, creating disruptions within their own revolution, just as it happened with the third revolution, disrupting itself, going from the internet to the cloud infrastructure, going from simple automotive machines such as a conveyor belt to programmable robotics which replace the laborious jobs and activities that we undergo to produce and create economic goods and services, improving the efficiency of manufacturing, which was what we relied upon the most to develop and grow our world, pushing us into a more cognitive existence of service.

We have had one advantage over machines and sort of a disadvantage to ourselves, that is cognition, the ability to think and create a plan to reach an objective. This was a disadvantage to ourselves, since the rate of development was still slow since ideas were easy to come up with, but slow to create and slower to fail at to give way for newer and better ideas. This is why, the newest revolution has taken over 40 years to truly come to fruition. However, an advantage over the machines, since we could still use them as merely tools and they had no conceivable way of going beyond that, until…

The 4th Industrial Revolution

Finally, the revolution we are lucky to be witnessing the beginnings of in modern times and not reading from a history book, while this will be documented well in history and soon enough, sooner than we think, it will be read in history books. This is the birth/re-birth of the fourth revolution. This revolution was hiding in the periphery of the previous one, while everyone was busy focussing on the cloud services, robotics, 3D printing and the internet of things, the wild fire to push all of these and more, as well as dramatically improve the previous revolutionary developments of technology and improve our efficiency beyond what we could

imagine we would in such a short span was the software optimization and efficiency taking place for the last few decades, improving software through machine learning, data mining and data analytics, an amalgamation of all leading up to artificial intelligence. I have been following this space since 2016 and, before the firm was founded and have been able to practically apply my findings and further understanding and discoveries once the firm was founded giving us a vehicle to put it into action sand more intensely ever since. This revolution truly started back in 1950 with Alan Turing, the father of computers, since he postulated that there will come a time where it will be hard to distinguish between a human and a machine, if you cannot see them and hence developed the Turing Test. A mere one year from there in 1951 the first artificial neuronal network was developed with 3000 vacuum tubes to simulate the neurons. 1952, the first self-learning program was developed, a program playing checkers and learning how to beat the various combinations that were possible. Over time these were developed further and further, the terms, "artificial intelligence", "machine learning" and so and so forth were coined and spoken about and the "hype" began and it carried on in the computer science field at large, mathematics, physics and psychological fields as well. There were certain working prototypes which could very slowly and only in some special cases emulate an artificial intelligence, which sparked the curiosity, potential and the imagination as to what this could do. Movies were created capturing the possibility of what it could look like and then we reached the plateau. The closest we reached was back-propagation, which was a form of learning which used several layers of neurons to recursively learn from their mistakes by adjusting weights of parameters to reach the correct conclusion. These contributed heavily to the deep learning of the early 2000s, but not before the funding dried up in the mid 1970s and the AI winter ensued. The "hype" died out because the machines weren't able to do certain operations that were set as benchmarks to "prove" this was real. The field was then deemed as a great theoretical and experimental tool, which could be used to do complex mathematical computations and conduct permutational and combinatorial calculations and activities revolving around those operations, but nothing more and it was left to simmer on its own. When things are left to simmer, they usually die and bacteria begins to grow break off into groups and spread in their local clusters, until they break out of them, mingle and begin spreading all over.

This is exactly what happened.

Post winter, spring arrived and the ideas nodules began to thaw. The ideaists and innovators didn't give up, even though the spotlight disappeared. By the late 70s, there were meaningful advancements made, yet still in its infancy The Stanford Cart was able to move on its own from one side of a room to another, which was evidence of the first autonomous vehicle. Wabot-2 an autonomous humanoid like robot was built, which was evidence of the first robotic artificial intelligence. These were by no means viable, they were clunky, inefficient and extremely expensive, such as the $850 million dollar 5th generation computer built in Japan which aimed to create human like conversation with a computer (reminds you of something, I'm sure… starts with Chat ends with GPT and it doesn't cost $850 million dollars on

your laptop). By the late 1980s, we had the first driverless car by Mercedes, with specialised sensors fitted on the car, it was able to drive at 55mph on an empty street. These were clunky and in their infancy. There were further developments in speech and language models and back propagation became more efficient and by the late 1990s, Deep Blue became the first chess computer to beat the chess champion at the time; Furby, the first pet robot was created; Kismet the first robot to recognise facial expressions and emotions was created and papers on pattern recognition and handwriting recognition using back propagation were in the works. Then came the turn of the century, where science fiction would become reality and the world would transform, the 21st Century! Hold your horses there, not so fast. Yes, all of which is true, but it was much slower than what we thought, however, still relatively fast. Science fiction always advances far quicker than science, movies were released about robots and AI tackling the toughest questions, emotions and especially love. The first autonomous vehicle tests were performed and they failed, once again advancements were made but just shy of what we hoped for, until 2010. Here pattern recognition, graphics cards and images came into play. ImageNet was used to help object recognition software train and improve its ability to recognise objects and label them, with the height of that coming in 2011 with AlexNet, the first machine learning algorithm to be able to recognise the most faces, in the least amount of time using optimization software. Around this time Watson, the firms large language model was able to answer questions on Jeopardy. Around the same times, Google started developing its secret driverless car. They already had their search engine running on an automated algorithm which was increasingly being run and monitored by a machine learning algorithm, which grew and developed into a artificial intelligence they called Deep Mind and they became the pioneers of modern AI with Deep Mind's Alpha Go beat the Go champion in 2016, which was an incredible feat since the combinations and permutations for the game Go are almost infinitesimal and the only way a machine could beat a human at that is if it had the capability of thought or creating an original combination.

Since then, Google has been on the forefront of the AI game with Lambda as the best large language model out there, Deep Mind as the best AI with the highest computational ability, running the search engine, weather calculations and various ither google functions through it. Additionally, Deep Mind's AlphaFold program was what helped us unravel the protein chains in the COVID-19 virus to find the protein chains to be able to treat it in the speed and efficiency we did. Without the use of technology it would have taken as far, far longer to solve that and the consequences would have been detrimental. Then came Open AI's Chat GPT. This brought the developments and the advancements that were taking place in the periphery and slowly creeping up into the forefront, right in the centre. They gave the computational and language capabilities of an extremely advanced machine learning algorithm with a component of deep learning and the continuous development into a larger artificial intelligence to the hands of the common person. This came at the most opportune time, where over half the planet has a mobile phone with an internet connection and most importantly hardware has caught up to the advancements of technology and we have reached the limit of how far hardware advancements can go and now it is time for the handover to software enhanced hardware. This is the crossover of two laws in perfect symmetry. This time the "hype" is real!

Technology and its Laws

The laws I am referring to here is Moore's law and SysMoore's law, both of which are empirical observational laws, not laws of nature, however, laws nonetheless since they describe the development of a phenomenon and have yet to be broken or defied. The first, Moore's law is a law which states that the size of transistors (the hardware required to make the chips used in electronics) will half every year, while the storage will double. This is an exponential law and the production and development of hardware technology has followed this path continuously and we have reached a point where we can go no further, so far, we now have made transistors the size of atoms, where we manipulate silicon atoms to make chips slightly better and more efficient in storing and processing data. We can physically go no further and the law has a limit, which is Planck's limit, the smallest length known so far.

The second law, which runs in parallel to the above law is System Moore's law. However, it started slightly later than Moore's law, as it applies to software, which came much after hardware began production. This law too is exponential, however, unlike the traditional Moore's law it doesn't have a physical limit in the law of nature. The limit for SysMoore's is data and the optimization ability to process the data. This comes from the development of the software and the improvement of the algorithms and data processing structures. The more advanced they get the more complex they get. The real limitation is when the complexity exceeds our understanding and that is what the beauty of this revolution is. We have to make an automated software which has the capabilities to understand, learn, improve and develop itself beyond that point so as to not reach a point of stagnation. This happens with the continuous flow of data which it receives from our everyday interactions which are all recorded and the regular developments, improvement in the learning algorithms, which go on at much faster rates than we can comprehend.

The development and release of a form of this software came at a time where the hardware created by companies such as Nvidia, who is currently leading the development of this hardware has reached a point where they are building software enabled hardware, to improve the processing and ability of this hardware to cater to the enormous data processing demands for the software to work. The ultimate goal is to create a set of processes which work together to form an artificial cognition in order for this advancement of technology to take that last part from us, the element of the cognitive service tasks, breaking us into a completely new world. This is what experts call the singularity. This is when our current versions of highly sophisticated machine learning algorithms with a constant development of the learning aspect to become completely unsupervised passes into becoming an artificial general intelligence or AGI. This is the point where this software will be able to learn and develop on its own just as a brain would, growing, fixing, improving and taking in data from its surroundings, which would be us and reacting to it. This would give it the capability of performing any general task done by a human and we would be left to do the very specialised tasks, which we don't know if an AI would be able to do,

we postulate that as imagination. We have the ability to come up with something completely new, imagine a completely unique situation. So far, whatever we know about AI, we don't think it will have the ability to create or imagine anything outside of the data set it receives. We acknowledge that it can come up with new potential possibilities from a given data set, which are extrapolated from it, however, not something completely new.

The Effect of Development

Here I would like to address how this development of AI can possibly affect us and how this revolution can potentially play out.

This time it's here to stay, AI has already improved the efficiency and productivity of data compiling, searching and compressing tasks. Over time as the models improve and their learning gets better and more data is provided they will be more accurate in making associations and extrapolating data to be able to apply it to other aspects of life. Additionally, more models will be created on top of these existing models and the more they scale, the better they become at their task, learning just as a human brain learns and grows. The rate of learning for a computational machine learning program is several orders of magnitude faster than us since they can take in several terabytes of data almost instantaneously and consume that in a instantaneous moment relative to us since we have a very distracted attention span and limited processing ability as we rely on chemical changes and biological improvements to allow us to change, while they rely on replication of code and repetitive recursive operations which continuously improve the code.

The first sector to improve will be anything related to technology itself, any data processing, analysing and computational operations such as search engines, data parsing, scraping data from a dataset and organising it in an ordered, applicable manner. The key industries which need advancement and in which AI can be the major catalyst to these will be medicine and biotechnology, software developments, energy developments and human labour out of the many it will eventually disrupt. Medicine and biotechnology has already begun to take place, with AI being able to process anything which presents with data or energy in wave forms (which is all of energy, as long as it can be converted from the form we observe to waves through sensors). AI is being used to process images of scans through the various image processing models and it is able to predict the course that cancer can take and correctly identifies the possibility of patients developing cancer and the course it will take to grow through multiple scans and has done so repeatedly already. AI is being used to process the wavelengths produced by our brains and converting them into images and videos so it is capable to decipher what we are seeing even without receiving image data of what we are looking at, just be constructing the wavelengths our waves produce into more readable and understandable wave forms so that we can "see" them as images. This is being applied to psychotherapy, by making Freudian dream analysis a more tangible and real process. There are breakthroughs in drug production with the speed of production being improved by AI systems

taking over the production of the drugs entirely, the unravelling of protein chains as mentioned above has helped prepare for other potential viral diseases and create medication to target several diseases and conditions by giving the models an initial starting point of solutions, which it then is able to extrapolate and create completely original chemical solutions to those problems, giving us the ability to form medications using the chemical configurations provided by the models. Additionally, processes such as surgery can be increasingly taken over by a robotic arm, where the experience and mind of a surgeon will be more important than the physical reliance on the hands of the surgeon themselves as they can perform the surgery with the assistance of more sophisticated and highly sensitive robots.
Technology is being disrupted by this technology itself because it is able to understand and translate human language descriptions into coding languages, which will over time replace the need for coders themselves, rather those who understand how to manipulate the model to provide the solution for their coding problem at hand. The entire graphics industry including cinema, art, fashion and advertisements and several other components is being disrupted through generative AI, which is able to process, and create images from descriptions, edit images through simple instructions. It is able to create videos through a similar process, which can potentially be scaled up to create entire movies from simple descriptions provided to the model, since all software technology at the end of the day is processed as binary numbers through a computational algorithm, which converts it into one form from another, just as with the conversation of energy. AI is able to automate most logical and monitoring aspects, if given enough data. It is then able to be connected to agents, which are specialised for certain processes, that work through the same underlying AI, however, have individual specialisations which are more niche specific, expert AIs, using the same underlying global program to process the data just for a specific function. Anything which uses technology is going to be disrupted and has the potential to turn autonomous, such as driving, flying, transportation of cargo through sea, land, air and travel across the same. This will make these processes several magnitudes of order more efficient and easier to use as we become more and more dependent on these models and train them to become better and better, feeding them even more data.

Energy creation and management will be disrupted as well, especially with the renewable energy sector where we have struggled for several decades since we are unable to break that barrier ourselves, we must and now can create systems to do so. In nuclear energy, it is already being used to monitor and maintain nuclear fission plants, however, with nuclear fusion, we have stumbled upon a core problem where we are able to get the plasma hot enough and the pressures within the tokamaks high enough, however we are unable to maintain that balance for long enough. We now do it through creating a magnetic bottle, however, the equilibrium has proven to be a difficult task to maintain. This is both an engineering problem and a software issue since we need the right materials, magnets and components to create this, however, we also need the right system to be able to maintain and monitor this and improve the efficiency of how we proceed with it. Now with AI, both can be achieved. As mentioned above, AI can be used to extrapolate from initial provided solutions and create unique potential configurations, which was demonstrated through IBM Watson in the late 1990s, when it was fed the initial configurations of the primordial soup and it was able to come up with hundreds of

thousands of potential possible ways the Big Bang took place, which helped us uncover the possibility of the RNA theory. The same can be applied to engineering problems, where the current state can be provided and the model can be programmed to produce various possible configurations to improve the engineering as well as the system to keep the magnetic bottle in check to maintain the plasma for longer periods of time so we can produce more energy and potentially cross the threshold where there will be continuous energy production and efficient conversion from a nuclear fusion source. Additionally, traditional, non-renewable energy sources are already being impacted through AI, with the first ever autonomous oil rigs and oil transportation ships being built and deployed. This reduces the need for human capital to be deployed and put into harms way and improves the efficiency, safety as well as production of these industrial machines and energy production.
Human capital will and is being disrupted through these processes by the less and less dependence on human labour for manual tasks such as house hold tasks as cleaning, cooking, washing, which is being replaced by automated washing machines, vacuuming robots, mopping robots as well as humanoids in development to cook and clean, which were largely human dominated processes. Additionally, the need for human labour in technology with coding being the most lucrative job one could get at one point in time, now that we have reached the inflection point where the coders have done so well they have created a process to replace themselves with a program which can now code and potentially develop itself, so all one needs is a senior developer who understands how to manipulate the software to give them the results that a battery of developers wouldn't be able to produce within a week in probably a couple of hours to at most a day of use. Hence there will be large layoffs in the technology sector in the coming years, if not months. Furthermore sectors with traditionally very large groups of employees such as consulting and analysts will be reduced dramatically since the large language models can do most of the analysing heavy lifting. This will lead to a wave of change within several major industries and especially with start ups being able to be formed by very low capital and less number of people, potentially with just a few people if they are technology firms or firms within the number crunching or data crunching spaces since most of the repetitive crunching work can be taken up by these AI models and the agents that can be created to make more specialised versions as well.

This will disrupt and transform almost every industry possible and it will force others to morph and new ones to emerge enhanced and forced to hit the ground running and running much faster than previously. The normal progression of firms will be distorted and a new normal will start to form. The only limitation and a potential deterrent to the above possibilities is the stagnation in adoption of these models and the potential stagnation in development due to our inability to understand and develop these models further or our fear in creating something for the first time we cannot control and potentially letting it run wild and forming a run-away reaction of development we don't fully comprehend. This is a topic heavily discussed with those on the forefront of this field since they are the ones with the most information and knowledge in the field and if they are afraid of the potential implications of a true artificially independent cognitive thinking machine, this reality may hit us faster and harder than we know, since the rest of the population is completely oblivious to what could potentially happen. We will be creating a smarter cognitively enabled being with roots in every single part of our civilisation due to

our dependence on the same systems which will cause it to thrive and grow uncontrollably. This reminds me of the moment of the nuclear bomb, which was a revolution so far beyond the time it was made in, however it still required conscious human effort to perform. This on the other hand is, if left to its own devises, a revolution so far ahead of our time and if left on its own, developing, evolving and morphing continuously so getting exponentially even further away as the developments and advancements get incomprehensibly advanced to us, like an ant would look at our civilisation and have no clue on how to comprehend it, we would be doing the same.

We are still potentially a decade or two away from reaching anywhere near this ultimate conclusion but making record pace progress, however, I would urge you to take that with a large spoonful of salt, since we also did think we were decades away from this point, which we reached in the span of 2-3 years post release and we have just been accelerating ever since with adoption and adaption both hardware, economic trends as well as software keeping up at record pace. The point of time pre-creation of attaining true artificial intelligence is akin to the point in time before time and hence we call it a singularity since it is like the primordial soup with various forces being put together, interacting constructively and destructively to convert this energy into a new form, once the singularity hits by way of us achieving artificial machine intelligence, a new way of life will emerge with the enhancement and the new equilibrium between organic and inorganic life.

The Piece of the Pie (POP) Principle

So how does one take part in such a dynamically changing environment, to not just sit by and watch it happen, but rather be a part of it. There are fundamentally two ways to go about this:

1) Create the change. Be a change driver of the world and build the products, services and systems which bring forth the above changes and transformations. This requires one to invest great deals of time, effort and money to gain the knowledge and knowhow to be able to have the skills to crystallise their imagination in physical goods.

2) Support that change and advocate for it. Our world is one of capitalism. The way one can support and take part of these changes is by identifying and investing their time, money and effort in understanding how these changes come about, what to look for to identify change drivers and invest in those change makers.

If one takes none of these routes, they end up being part of the consumption story rather than the production or the participant.

We are here to talk about the second type, since at this stage of world economies as well as rates of advancements, the change drivers and change makers primarily come from those who have ushered in previous large scale changes, which have

literally transformed the world. Unless one has something far greater and far more unique to offer, your time, effort and money is better spent investing in those existing firms and services than trying to compete or come up with one yourself since the dual factor of immense capital resources which exist in those firms and the best of the best talent within them, logically concludes that smaller and more locally impactful firms will evaporate away over time unless they can offer orders of magnitude better products/services in that space. That is where the POP (Piece of the Pie of change) principle comes into play.

The POP principle acts on the basis that due to growth and development and the subsequent competition and innovation of the world and economies within it grows the pie rather than diminishes it into a zero sum game. Allowing for your small piece of that pie to grow alongside it. The small chunk becomes more significant as the pie itself grows into a much larger and larger opportunity as the development of products and the sophistication of them grows.

Long term investing is about building up positions in companies, treating them not as a price arbitrator where one can buy and sell frequently just to make a profit off of the difference in prices they trade for on the market. Rather, investing in them due to the products/service they produce and the lasting impact they have on the world around us, building positions in those firms and growing those positions prudently to take advantage of identifying the right change taking place with the right change driver.

How does one do this? This forces one to understand deeply what is going on in the world at large and then scale down to understand what is driving it, where the opportunity of change lies and finally who is making that change. However capitalism plays a part as well. Identifying who the change makers are comes from a fundamental point of view. Deeply understanding what they produce and what is in their pipelines of production and what could potentially come from those pipelines and if they have the capability to usher in further change. Additionally, how that impacts both the supply chain as well as the demand growth for those products and services and breaking down both sides of the equation to know which firms are the long term leaders for this advancement and why they are. This of course must be backed by the financial aspect to satisfy the capitalistic environment we are a part of and whether they can sustain such growth and development or are they going to evaporate over time with someone else taking their place. Once that is identified the process of investing begins where one is able to build a position over time, since markets are irrational and volatile, there are better and worse times to begin and grow positions. Identifying those times where you can grow a position and times where you may have to trim or limit the amount you grow it by due to various factors at play. Once that is done, holding on to the firms which are truly driving change or the ability to let go of firms which were driving change but the change makers have shifted and the temperament to make those decisions and see the development over time, well before it has taken place. These are the skills and techniques which can help one develop the ability to identify change, adapt to the change and absorb it by investing and building positions over time to gain from the change and development taking place around them.

Here's to the transformation of humanity and the enhancement of our civilisation!

Are you going to take part and take your piece or watch as the world morphs and evolves and stay a consumer rather than a participant?

Black Komodo Investments Limited

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