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21st Century Technology Renascence

A Driven Impacting Factor For Future Energy, Economy, Ecommerce, Education, or Any Other E-Technologies

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Abstract: The human race has always innovated, and in a relatively short time went from building fires and making stone-tipped arrows to creating smartphone apps and autonomous robots. Today, technological progress will undoubtedly continue to change the way we work, live, and survive in the coming decades. Since the beginning of the new millennium, the world has witnessed the emergence of social media, smartphones, self-driving cars, and autonomous flying vehicles. There have also been huge leaps in energy storage, artificial intelligence, and medical science. We are facing immense challenges in global warming and food security, among many other issues. While human innovation has contributed to many of the problems we are facing, it is also human innovation and ingenuity that can help humanity deal with these issues

"*New directions in science are launched by new tools much more often than by new concepts. The effect of a concept-driven revolution is to explain old things in new ways. The effect of a tool-driven revolution is to discover new things that have to be explained*". (F. Dyson, 1997

In this article, we review the impact of technology as evolving at beginning of 21st Century on future prospect of Energy demand either renewable or non-renewable form, Economy, to Ecommerce, Education and any other E-related of Modern Technology.

Keywords: Modern Technology, Traditional Technology, Technology Renascence, E-Banking, Ecommerce, Education, Energy, Economy and Other E-Technologies, Artificial Intelligence, Business Intelligence.

1.0 Introduction

The history of human technology began when he discovered how to design a tool and draw on the stone or the cave wall[1]. This goes back about 2.5 million years ago. Tools made in this way have been found in Africa (the earliest known examples have been discovered at Gona, in the Awash Valley in Ethiopia). Gradually, over the millennia, in an extremely slow version of an industrial revolution, new and improved techniques are developed for striking off slivers of stone. The next most important discovery of humans was the taming of fire. "This probably happens some 500,000 years ago in China, where the caves occupied by Peking men contain what appear to be hearths. Some experts believe there is evidence of the use of fire much earlier in South Africa." [1].

[1] The major difference between human and other living creature is not that human designs tools in order to improve his life, but his ability to constantly improve and comes up with new ideas to replace it with better and effective ones.

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Another important discovery was the plough and draught animals which go back to 3,000 BC. “The plough is almost certainly the first implement for which humans use a source of power other than their own muscles.” More recent inventions go back to 200 BC, when builders in Greek cities on the coast of Turkey (and in particular Pergamum) evolve cement in about 200 BC as a structural material, in place of weaker mortars such as gypsum plaster (used in Egypt) or bitumen (in Mesopotamia). The secret of the new material is the lime which binds sand, water and clay. The Romans subsequently use finely ground volcanic lava in place of clay, deriving it mainly from the region of Pozzuoli.

“Part of the purpose of the Roman roads was the speed of communication, so there were posthouses with fresh horses every 10 miles along the route and lodgings for travelers every 25 miles. By the 2nd century AD, the network spreads all-round the Mediterranean and throughout Europe up to the Danube, the Rhine, and northern England, amounting in all to 50,000 miles. This far outdoes even the very impressive achievement of the Persian roads. Travelers on foot or horseback have rarely been so well provided for”.

As time passed, human ingenuity further evolved, and less than 2000 years later not only conquered the earth but landed on the Moon and now reaching planet Mars.

2.0 Future Energy Production Demand

As part of technology renascence, while we are evolving from traditional technology of past centuries to 21st century and going forward is involved with reduction of green effects and global warming that as human we are facing.

Ensuring an ongoing supply of power in a low carbon economy is one of the major national and international challenges that almost every country faces. Investments in alternative and renewable and non-renewable energy technologies have risen steadily over the last decade, particularly since the ratification of the 2016 Paris Agreement. [2]

As new technology thriving for better knowledge due to new information learned from our past historical data, drives to a better power of decision making [3], when it comes to production of electricity from a new source of energy (i.e. either renewable or non-renewable source).

While reasonable progress has been made as a result of this, even the most developed renewable energy technologies, for example solar, wind and hydro, cannot satisfy the rapidly growing energy demand of the world. Arguably a non-renewable energy source, nuclear energy may be one clean energy answer for the future. More specifically, small scale nuclear energy holds considerable potential. Such potential exists in the form of Small Modular Reactors (SMRs) with thermal output of 15-60 MW [4] or Nuclear Micro Reactors (NMRs) with thermal output of 1 to 3 MW. [5]

SMRS as new generation or GEN-IV are not a new idea (i.e. have been used by U.S. Navy over 60 years ago as new propulsion system), yet appeal very safe from operation point of view in respect to its previous generation namely GEN-III, while NMRs are very mobile and can be used in space explorations as well as military applications and they are newer breed of generation IV or GEN-IV.

Since the Paris Agreement was ratified in 2016, [3], the aim of the Paris Agreement is to limit the global temperature increase to below 2 degrees Celsius, with a preference to keep the warming below 1.5 degrees Celsius. Significant changes will have to be implemented to achieve this goal. While there has been a minimal number of large projects executed since the agreement due to time frame challenges, a large variety of sustainable and renewable energy projects have been put into motion all over the world.

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Global energy demands are expected to increase rapidly as more people transition out of poverty [6]. Owing to a range of issues such as intermittent energy production, cost feasibility and scaling limitations there are inherent difficulties in transitioning to a grid system where most of the electricity is supplied by renewables [7]. This is worrisome, considering that it is predicted that the world market for electricity generation is expected to increase by 80% over the next 25 years [8].

While these renewable energy systems are continually improving, baseload power generation must be achieved by alternative means. The solution may just be nuclear energy, specifically through the utilization and optimization of Small Modular Reactors (SMRs) and Nuclear Micro Reactors (NMRs).

In summary, the global market leaders of SMR and NMR development and implementation include GEN-IV Energy.

Nuclear power plants generate flexible, continuous and reliable energy with zero carbon emissions. Approximately 11% of the world's energy demand is met using nuclear power. In some countries, up to 70% of the power requirement is achieved using nuclear power [9].

Bear in mind that, climate change is one of energy production variables and a change in the usual weather in a place or spot around the world as well. This will impact a change in how much rain a place usually gets in a year. Or it could be a change in a place's usual temperature for a month or season. Climate change is also a change in Earth's climate. The other impacts that can be seen due to global warming is effect that is known as "Permafrost" phenomena.

Note that: Permafrost is any ground that remains completely frozen -32 ^{0}F (0 ^{0}C) or colder—for at least two years straight. These permanently frozen grounds are most common in regions with high mountains and in Earth's higher latitudes—near the North and South Poles.

Permafrost covers large regions of the Earth. Almost a quarter of the land area in the Northern Hemisphere has permafrost underneath. Although the ground is frozen, permafrost regions are not always covered in snow.

As Earth's climate warms, the permafrost is thawing. That means the ice inside the permafrost melts, leaving behind water and soil.
Thawing permafrost can have dramatic impacts on our planet and the things living on it. For example:

- Many northern villages are built on permafrost. When permafrost is frozen, it's harder than concrete. However, thawing permafrost can destroy houses, roads and other infrastructure.

- When permafrost is frozen, plant material in the soil—called organic carbon—can't decompose or rot away. As permafrost thaws, microbes begin decomposing this material. This process releases greenhouse gases like carbon dioxide and methane to the atmosphere.

- When permafrost thaws, so do ancient bacteria and viruses in the ice and soil. These newly-unfrozen microbes could make humans and animals very sick. Scientists have discovered microbes more than 400,000 years old in thawed permafrost.

As Figure-1 demonstrates, because of these dangers, scientists are closely monitoring Earth's permafrost. Scientists use satellite observations from space to look at large regions of permafrost that would be difficult to study from the ground. [10]

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Figure-1: A Block of Thawing Permafrost that Fell Into the Ocean on Alaska's Arctic Coast
(Credit: U.S. Geological Survey)

NASA's Soil Moisture Active Passive (SMAP), mission orbits Earth collecting information about moisture in the soil. It measures the amount of water in the top 2 inches (5 centimeters) of soil everywhere on Earth's surface. It can also tell if the water within the soil is frozen or thawed. SMAP's measurements will help scientists understand where and how quickly the permafrost is thawing. [11]

From get-go perspective, modern technology in hand allows as to use tools such as Artificial Intelligence (AI) encompassing one and another with Machine Learning (ML) and Deep Learning (DL) would be help us to predict Energy impact on global Economic conditions based on real-time data. [12-14]
While the definition is clear, what causes the climate to change is still debated. There are many people, including some scientists[2] who are skeptical about the role of humanity in the process and argue that climate change is a natural phenomenon caused by "the Little Ice Age" as they call it and has nothing to do with human activities on earth. Others argue that what is happening to the climate today is mostly manmade. The latter group refers to a substantial body of peer-reviewed scientific research that shows humans playing major role in the increase in greenhouse gasses, which is responsible for climate change.

3.0 Economy Driven by Modern Technology

Forecasting future paradigms without understanding the economy and how it works is not an easy task, given the technological renascence that we are going through twenty first century in particular with aggressive implementation artificial intelligence in our day-to-day operations of our organization and banking as well as ecommerce.

Thus, in this section we are reviewing the key economic concepts and looking at the important economic factors that affect the forecasting of the future economic environment for the targeted areas (companies, countries or world), very holistically and take very top-level approach without much granular information being involved.

Encyclopedia of Britannica defines economic forecasting as:" the prediction of any of the elements of economic activity. Such forecasts may be made in great detail or may be very general. In any case, they describe the expected future behavior of all or part of the economy and help form the basis of planning". It also defines the process of forecasting as:

"Formal economic forecasting is usually based on a specific theory as to how the economy works. Some theories are complicated, and their application requires an elaborate tracing of cause and effect. Others are relatively simple, ascribing most developments in the economy to one or two basic factors. Many economists, for example, believe that changes in the supply of money determine the rate of growth of

[2] IPPC report in 2007 stated that it is 90% likely that humans are responsible for at least some of 1^0 F observed global warming of the previous 50 years.

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general business activity. Others assign a central role to investment in new facilities—housing, industrial plants, highways, and so forth. In the United States, where consumers account for such a large share of economic activity, some economists believe that consumer decisions to invest or save provides the principal clues to the future course of the entire economy. Obviously, the theory that a forecaster applies is of critical importance to the forecasting process; it dictates his line of investigation, the statistics he will regard as most important, and many of the techniques he will apply".

With new technical capillaries at our disposal we can and are able to do better data analytics, thus predictive analytics in more real-time processing of the data by comparing historical data with the present one by gathering the right sets of information that provides a better decision making power, when it comes to economy and its impact to our daily life and operations that we involved with. [3]

Today, forecasting is an integral part of any major decisions, and for that reason, there are many private and public sectors that provide economic forecasting for those who are interested. These entities usually use complex models combine with expert judgments[3]. Most medium and large business companies also either use their own experts or hire an external consultant to do the forecasting for them. The topics could be anything from forecasting their revenues or finding ways to response to the change in demand for their products and services, or status of the economy in certain markets.[4]

While using prediction as a tool to make a decision, there are concerns about the accuracy of the forecasting as well. In other words, the quality, accuracy, and reliability of the forecasts become more questionable[5]. And there are many good reasons for that; many studies reveal the inability of the forecasters to accurately predict the future. For example, a study done by Zidon An; Joao Tovar and Loungani (IMF Working papers) [16], which covers 63 countries for the years 1992 to 2014 stated that:

"…while forecasters are generally aware that recession years will be different from other years, they miss the magnitude of the recession by a wide margin until the year is almost over. Forecasts during non-recession years are revised slowly; in recession years, the pace of revision picks up but not sufficiently to avoid large forecast errors. The second finding is that forecasts of the private sector and the official sector are virtually identical; thus, both are equally good at missing recessions. Strong booms are also missed, providing suggestive evidence for Nordhaus' (1987) view that behavioral factors—the reluctance to absorb either good or bad news—play a role in the evolution of forecasts". [16]

Furthermore, we know that of the main variables that plays in economy is sequence and series of event, whether they are manmade or natural ones. For example, the impact of COVID-19 and consequently stay at home policy caused 10 percent of the workforce in USA to be out of job and closing of business have had a tremendous adverse effects to the economy of this nation.

[3] The OECD's forecasts combine expert judgement with a variety of existing and new information relevant to current and prospective developments.

[4] There is some other approaches to forecasting as well. For example, the scientific method. in approach, the researcher first identifies the question and define relevant variables, then specify the assumptions that help to formulate a hypothesis. Then the hypothesis will be tested in order to find the result.

[5] This is mostly due to the speed of change and fast evolution of technology. the study that was done by David Reifschneider of the Federal Reserve and Peter Tulip of the Reserve Bank of Australia, found that forecasting mistakes had worsened since the 2008-09 financial crisis.

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Our modern technology with all its modeling and forecasting functions could not prevent such downfall of economic impacts. Not even AI, ML or DL combination could help us with this disaster, yet they are part of 21st century technical tools.

Professor Philip Tetlock also spent many years researching the accuracy of forecasts – specifically in a political realm. After collecting and analyzing 28 000 predictions from 284 experts, he found that the average expert's forecasts were only slightly more accurate than random guessing [17]. Even forecasting that had been done by the Federal Reserve in the areas of unemployment, inflation, interest rate and GDP ended up having widespread errors.

Then the question is: why bother forecasting? One answer could be because of uncertainty. While forecasting may not be accurate, the process can provide valuable information to the forecasters and the decision-makers. As author Cullen Roche explains: "It's sort of like preparing to set sail across an ocean. You would never claim to be able to predict the weather or conditions you might encounter, but you can understand your path, potential weather patterns and how your vessel operates, so you can increase the odds that you will make there in one piece". [18]

In this section, the focus was on the economic factors that have a potential impact on the future economic outcomes either in the short or long-term. The authors believe that understanding these factors will help the decision-makers to be in a better position to forecast the future. The topics that can be discussed beyond scope of this section will help the decision-makers to predict the future by re-assessment of the economic climate in the target areas, study the new information since the last forecasting (if it was done), collect data and feed them to the appropriate models that requires most details studies, which is as we said beyond the scope of this article. Of course, the results of each study may still not be accurate, but the process can be very valuable to the decision-makers.

However, as summary, we may state that financial institutions play a major role in the economy of any country. Among these institutions, banks by accepting deposits and making loans are uniquely positioned to facilitate the flow of money in the economy.

Regulations make banks assess their credit risk, liquidity risk, interest risk, operational risk, and capital risk. Therefore, the impact of regulations on the banking industry has been widely studied, and one can find a lot of published book and research papers around the subject on internet.

4.0 Ecommerce Driven by Modern Technology

To cover this section of this article, we should ask, how did Ecommerce begin, and what does its future holds? And the answer is:

As the world of shopping and finance continues to grow and evolve, new e-commerce trends emerges.

With closing of most retail store around the globe with presence Amazon on internet with offering of purchasing power online, merchants are passing more discounts to the end-users and customers online.

In 2018, retail e-commerce sales in the United States totaled $504.6 billion according to www.statista.com and Figure-2 that is forecasting future of retail e-commerce sales in the United States from 2017 to 2024.

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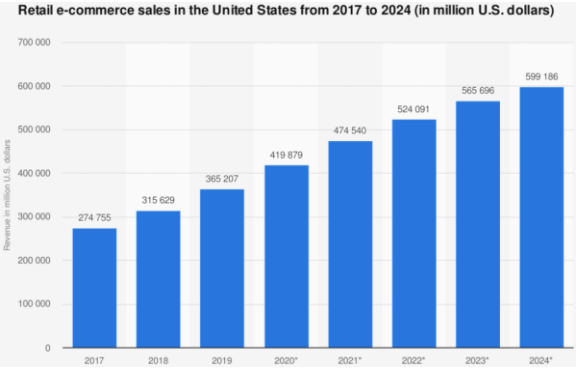

Figure-2: Details: United States; Statista Digital Market Outlook; 2017 to 2019
(source: Statista 2020)

By the same graph, these numbers are expected to increase. Rising alongside these sales are considerable fears that online shopping is killing brick and mortar retail, and a slew of high-profile downsizes and bankruptcies in recent years seem to support that theory. In 2018, retail e-commerce sales in the United States totaled $504.6 billion, according to Statista. By the same graph, these numbers are expected to increase. Rising alongside these sales are considerable fears that online shopping is killing brick and mortar retail, and a slew of high-profile downsizes and bankruptcies in recent years seem to support that theory.

E-commerce has a surprisingly long history, stretching back even before the first web "browser" as we know them. It has developed alongside other internet-based industries and become a powerful part of online and physical business. Today, creators and entrepreneurs everywhere can sell them around the world, thanks to e-commerce.

For the past 22 years we've been able to shop online and looking back, e-commerce has grown beyond belief. What with the gradual decline of the high street and the growth of some of the world's biggest brands being down to e-commerce level these days. If we take a look at the rise of e-commerce in the 21st century and we notice that Retail and e-commerce are working side-by-side of each other by complementing one and other as well.

As the high street began to suffer at the hands of e-commerce, the two different strands of shopping began to merge making e-commerce now a major part of the offline shopping experience. Many stores now have iPads and digital facilities for customers to use where they can make orders if a product is out of stock or for shop assistants to use as a point of reference if a customer wants to know more about a particular product.

Online shopping has enabled more businesses to set up than ever before. With the cost of setting up a business online significantly less than an offline business, it makes sense that those will small businesses were more inclined to give their online business a go. Brands like Asos, Amazon and e-Bay have become household names over the past 20 years thanks to e-commerce.

In summary, with all the electronic gadget available to us as consumer and better delivery systems available to delivery companies by getting better and better with courier services, they now offering more options than ever before. And off course the growth of e-commerce has had a great influence on these delivery companies on their transport and logistics of both retail merchant and consume relationship in form of Business-To-Consumer (B2C), which is nothing new and this technique has been around for past 10-12 years with born of internet technology.

With companies like TNT offering services like same day delivery, it is easy to see why e-commerce has grown so quickly.

In summary, The rise of e-commerce in the 21st century has been phenomenal thanks to these few factors. With technology growing even further and brands wanting to offer their customers more and more convenient delivery options, with some now allowing next day

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orders up to 12pm, it will be interesting to see how much further it grows in the next century.

5.0 Education Driven by Modern Technology

21st century skills are an important consideration for every educator as we are striving to prepare today's students to become prepared for the competitive global market of tomorrow. With our digital gadget such as our Laptop Computer, Smart Phone, Personal Data Assistant (PDA) and world Internet of Things (IoT) and access to Internet, information flying around with speed of electron.

The researchers and engineers of the 21st century have produced marvels such as personalized hover boards, self-driving cars and, of course, the societally pervasive smartphone. While the devices are commonplace now, just a decade and a half ago they were unfathomable.

Those days of buying oversized VHS tapes and vinyl records to watch movies and listen to music are pretty much gone, come to twenty first century technologies. Today such nostalgic items are relegated to the realm of collecting and all but obsolete. Even relatively new DVDs and CDs are going the way of the dodo bird and fading into history as streaming files and digital downloads push these items into the obsolescence.

Today, modern consumers rely heavily on smart devices for mobile entertainment and managing their daily activities. Consumers watch movies, listen to music, record the day, connect with associates and even arrange transportation with a few taps on a screen. As devices grow faster and more powerful, the things that consumers can accomplish with smartphones, tablets and laptops continue to expand. In fact, many consumers who've never owned a computer are digitally connected 24-hours a day via their smartphones.

With this spirit, even education falls into technology 21st century repentances. Classroom of 21st century are taught differently than few decades ago. Today's advances in access technology and technology in general enable even blind children to progress in their learning as quickly as their sighted peers.

No longer do blind children have to wait indefinitely for the next title in their favorite series to come out in hardcopy Braille. No longer do they have to listen to what is going on in the front of the classroom without text or visual feedback. No longer must blind students wait for a TVI to transcribe their class assignments into print.

The modern classroom of today's time can be taught at the speed of internet and how fast you can connect yourself with others via technology of IoT. A time traveler from the mid-20th century would probably have a heart attack if they walked into a modern classroom during a lesson. Gone are the days when teachers stand in front of the classroom and talk at their students all day.

Now, you will likely find students working together using various forms of educational technology. In this context, the term technology refers to any device used to supplement and enhance student learning. There are various types of devices that fall under this umbrella, and each can be studied in more details if one has any interest on them and these information can be found on internet. However, generally speaking we can list them here as follows:

- Computers
- Tablets
- Interactive Whiteboard
-

Are few that we can mention and point them out. Also, a recent staying home policy have forced us to conduct classroom via a technical approaches such as Zoom and eLearning, where instructors and students

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can come together remotely and interact with each other.

Concerned about preparing today's children for tomorrow's world, the partnership for 21st century technology and skills and even international society for technology transfer in education have drafted frameworks and guidelines that outline what our students need to know to meet the challenges of the modern age. Mastery of core content areas, such as language Arts (including English language arts, reading, Spanish, etc....), mathematics, science and history, remains the centerpiece.

Day's of standing in front black or white board is over and no longer students have to be physically present themselves in the classroom of traditional and old fashion form. Today's with technological tools and electronic gadget in our hand, a lot education instate are pushing their classes into eLearning form and offering even advanced degrees in variety field of educations.

With technology of 21st century tools, one can easily become overwhelmed by the variety of Web-Based tools that are available to us on online today. Thus, in order to effectively choose the appropriate tool, being aware of your intended instructional outcomes is key issue and most schools and universities that are offering their courses online are aware of them and their administrations are encourage everyone to participate and learn how to use them into their mutual benefits.

In summary, today, more than ever before, students and instructors must be able to think critically and dynamically to apply Science, Technology, Engineering and Mathematics (STEM) to solve complex problems. Without developing key 21st century skills (such as critical thinking, problem solving and teamwork) and STEM education will not be possible and we have to adopt ourselves and tune our thinking to it.

6.0 Other E-Technologies Driven by Modern Technology

In past decades we have seen a lot of technical move toward E approaches, with given electronic gadgets and toys in our hand. For example, our Smart Phones are playing a back role in our daily life. It provides with best accurate navigation system that we could not have it 10 years ago and we were forced to use paper map that they were not as up to date as we are seeing today in real-time. Stock Market can be done through E-Trading, Banks are pretty much gone digital and past few months of home confinement due to corona virous is a good evidence of it.

Food industries have gone totally digital with their services driven by companies like DoorDash, InstCart shop are operating based on E-technology by providing an App on your smart phone, so it allows you to have delivery of foods and groceries at your doorstep.

Another revolution that is taken place in modern technology is in aviation industry, where science fiction meets science and that is perfection of drone or Unmanned Vehicle (UV) also known as Remotely Piloted Vehicle (RPV). Application of drone can obviously be seen is, specifically in military and in general in civilian life.

Military is using these RPV in tactical battlefield of today's warfare, where they attack their target globally and it is taking place in real-time, while civilian aspect of these drones integration can be see in law enforcement and firefighting in remote areas, where direct communication with resources are out of reach.

So, as we can see a good impact of this technological renascence of 21st century, by default and necessity push us as humans to E-life, whether we want of or not. Modern Technology is, without our consent is aligning us with these types of E-Technologies.

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7.0 Conclusions

As humans, we usually decide that is based on the assumptions and analysis that we make about the circumstances, which we are encountering. This process to some degree relies on individual ways of thinking and his/her beliefs and values. Therefore, the impact of technology on our brain and behavior may have an everlasting impact on our decision-making process.

However, to understand this decision-making process, we need to discriminate the modern technology from the traditional one that we are accustom to. We no longer need to build our analysis on old fashion infrastructure of Business Intelligence (BI), yet we should rely on Artificial Intelligence (AI) to gives a paradigm of forecasting path based on real time data analysis of past with present. By defining technology definition, we would be able to see the renascence of 21st technology by providing tools and capabilities to allow us to make right-decision at the right-time with a set of right-information as power in hand.

If we define technology as a means to achieve human needs, then as discussed in the introduction, since the beginning of human history, technology has been an important factor and to some degree responsible for all changes in human life. The relationship between technology and humans has always been unique and interrelated. By interrelationship between the two we mean that people shape technology and technology shapes people's behavior toward each other and their surrounding areas. That is why the nature of the future of any paradigm will be heavily influenced and shaped by the change, improvement, and evolution of technology.

Considering all these, we can easily divide the subject of technology in two categories as:

- Traditional technology, and
- Modern Technology

By tradition technology, we mean the kind of technologies that have evolved slowly and are still in use in some countries. For example, in many developing countries agricultural work is done in an ancestral manner. The ground is plowed using a plow, and the farmers harvest the crops by hand. In countries like that introducing modern technology not only may not be profitable, but it also can hurt the people and their communities.

On the other hand, when it comes to modern technology, we have seen drastic changes in our life and the way we think and behave accordingly.

As we have seen during the past few decades in more advanced countries, technology has drastically changed the way that humans may live, behave, work, study[6], and interact with one another and their surrounding environment[7]. The change in the way that we interact with one another is a good example. We are more and more distancing ourselves from personal and face to face interaction and are heavily relying on the internet and social media[8]. Even when we are in the same house, we prefer to talk

[6] Many studies show that students who are using social media, online search tools and text messaging, having more trouble focusing on their leaning. In online classes, for example, I have many students even at master level, who are heavily relying on quotations from others rather than using their own words, in order to answer questions posted to the Threaded Discussion.

[7] If we survive the digital revolution and do not replace by the robot, then the relationship between human and technology will be the most fascinate outcomes that we will be discussed in the future.

[8] In some cases, technology makes people have less patience for face-to-face interactions. I have had students in my online courses that were more active in threaded Discussions than those in the face-to-face cases.

to each other through text messaging or by voice mail.

Children are more and more playing and in fact, interacting with robots[9].This also true of our business interactions. Our business relationship is growing through the internet and cyberspace. Business meetings are taking place on Zoom or similar platforms. Watching our houses, tracing where our kids are, and how they are doing is done through cyber cameras.

As Samuel Greengard said:

"It is no secret that humans have an innate urge to connect with one another. In fact, research shows that well-adjusted people spend more time engaged in social interaction and activities. However, in the age of always-on digital technology, the notion of friendship – is changing radically. Increasingly the route of human interaction is through a digital device". [15]

If we assume that humans will still be the main decision-makers and not totally dependent on robots or any Artificial Intelligent machines, then understanding the impact of technology on human behavior and how technology is going to be used in different industries, societies, and even the world, is crucial for forecasting the future in any industry or society, or the world. This becomes especially important if we consider technology as a living entity with a thousand faces. Sometimes we see him as an outstanding physician who could cure all our medical problems and another time as Dracula with very bloody teeth that are ready to finish us.

8.0 References

1. History World, www.Historyworld.net
2. UNFCCC, "What is the Paris Agreement," 2017. [Online]. Available: https://unfccc.int/process-and-meetings/theparis-agreement/what-is-the-parisagreement.
3. Zohuri, B. and Rahmani, F. M., "A Model to Forecast Future Paradigms: Volume 1: Introduction to Knowledge Is Power in Four Dimensions" Apple Academic Press; 1st Edition (January 10, 2020).
4. Zohuri, B. "Small Modular Reactors as Renewable Energy Sources" Springer Publishing Company, 1st Edition June 18, 2018.
5. Zohuri, B., "Nuclear Micro Reactors", Springer Publishing Company, 1st Edition July 9, 2020.
6. Wolfram, C., Shelef, O. & Gertler, P., 2012. How Will Energy Demand Develop in the Developing World. Journal of Economic Perspectives, 26(1), pp.119–138.
7. Elliott, D., 2016. Balancing green power : how to deal with variable energy sources, Bristol England Temple Circus, Temple Way, Bristol BS1 6HG, UK: IOP Publishing.
8. C. Colbert, "New Nuclear: Small Modular Reactors and Opportunities for Kansas," Nuscale, Kansas, 2017.
9. E. Markelj, "Small modular reactors - SMR's," Univerza v Ljubljani, Ljubljana, 2017.
10. Zohuri, B. and McDaniel, P. J., "Energy Insight A Guide to Energy Essentials Knowledge of Energy Management and Efficiency" TO BE PUBLISHED
11. Holman, J.P. (1988), *Thermodynamics, 4th ed.*, McGraw-Hill, Inc. (New York).
12. Zohuri, B. and Rahmani, F. M. "Our Daily Life Dependency Driven by Renewable and Nonrenewable Source

[9] The research, conducted at the University of Plymouth, found that while adults were not swayed by robots, children were. "The fact that children tended to trust robots without question raised ethical issues as the machines became more pervasive, said researchers." BBC News, 15/8/2018

of Energy", 1 Vol.14 2020 Journal of Energy and Power Engineering.
13. Zohuri, B. and Rahmani, F. M., "Energy Sources Driven Electricity Production A Global Tactical and Strategical Paradigm" TO BE PUBLISHED by Journal of Energy and Power Engineering in 2020
14. Zohuri, B. and Rahmani, F. M. "A Model to Forecast Future Paradigm, Energy", TO BE PUBLISHED, 2020.
15. Samuel Greengard, "Living in a Digital World", Society, Vol 54. No. 10 2011
16. Zidong An, João Tovar Jalles, and Prakash Loungani, IMF Working Paper, " How Well Do Economists Forecast Recessions?" International Monetary Funds, WP/18/19, March 2018.
17. Philip Tetlock - Why Foxes Are Better Forecasters Than Hedgehogs
18. Economic forecasting: why it matters and why it's so often wrong, The Conversation, February 23, 2016