

PERSPECTIVE

Innovation

Innovation is the driving force behind a dynamic civilization. Inspired by creativity, innovators penetrate the boundary of what we know and change the world we live in.



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Business Lo





Employee Centricity: The People Behind Innovation in Businesses and Companies

By Seoyoon Eunie Choi

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Companies often look for ways to innovate their process and results, and to come up with new ideas. This is the only way to ensure that their consumers consistently buy their products or use their services because if the goods become outdated, there would be no need for the customers to keep coming back for something that is no longer the greatest, most efficient, and overall desirable thing in the market. But sometimes, the drive to create something new and better causes companies to lose the humane aspect of their work and forget the exact reason why they started.

This is where companies and employers must be reminded of employee centricity again. Innovation doesn't come from more machines and a greater number of goods produced but from the employees themselves and the energy and thoughts of the entire organization. This is especially important if the companies focus on products that require constant renewing and reviewing, as the employees most likely would have been hired to input their creative and original ideas instead of handle manual work that machines could easily do. The separation between things that machines can do and jobs that only people can handle is crucial here, because critical thinking, problem solving, creativity, and innovation are, essentially, what defines humans and separates them from machinery. Many companies and organizations have been hurtling towards introducing more technology and machinery, and it is time that they return the "humanity to [their] work", as Chris Brauer, one of the speakers of the 2019 Innovation Roundtable, said.



Furthermore, there needs to be an incorporation of the entire organization or company in order for true innovation and creativity to surface. Businesses are made up of more than one level of work and employment, and it is crucial that all of these levels are taken into consideration and engaged in innovative activities, not just the top-level ones. Shifting the company's focus from the products and services to the people will allow for there to be a higher level of innovation. Also, larger companies and organizations are spread all across the world nowadays, thanks to technology and better connection. As much as this is a positive development, it is important to recognize that the different institutions are all part of a collective group or business, and different talents and positive aspects must be acknowledged, as well as different places that could be improved and added to. This will allow for there to be top-notch levels of critical analyses, ideas, and different sources of creativity, all of which will lead

to positive innovation.

Finally, the employers and businesses must recognize their employees' desires to work for a company that allows them to think and speculate freely, and also gives them a space to bring those ideas to life and push concepts and thoughts forward to become realities. This is a crucial step in innovation because that is what the advancements are all about- changing and revolutionizing. Both of which can only be done through people thinking, planning, creating, and ultimately innovating.

In conclusion, companies, organizations, and businesses these days must remember their employees' humane aspects and their drive for reform and discovery. This can be done by focusing on human employees' benefits and the difference they have from the newest piece of machinery, incorporating all aspects of the organization into bringing a new idea to life, and recognizing the employees' needs for the company to support them in order to bring about innovation. This is because innovation doesn't start with technology, even in the twenty-first century. It starts with the people.

Seoyoon Eunie Choi

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O2
Society/Culture



Society – Online Education

By Katelyn Oh

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The coronavirus pandemic has brought many changes to our society. With the rapid spread of the virus and its unprecedented effects, schools have had no choice but to transition to online education, a system that has never been used before.

Although the idea of online education may not sound very appealing, there are quite a few benefits students and teachers can earn through this experience. Being able to study at home in more comfortable conditions is an obvious example of this. This could cause students' productivity to increase and could ultimately result in the completion of work to a higher standard. In addition, depending on the student's normal life habits, self-isolation and spending more time on their own without as much human interaction could relieve stress provide the perfect environment for relaxation.

Since online education is done at home, students and teachers may find self-isolation very difficult due to the lack of fresh air and human interaction. Also, students may find themselves not working as efficiently as they would have at school, whilst also creating lazy habits in an overly comfortable environment. This could eventually lead to a decrease in productivity and could cause students to be less motivated as a result. Unfortunately, with online education, when students fall into a state of demotivation, teachers are unable to provide the support they would have been able to give in normal classroom situations. Additionally, teachers may have experienced fatigue and stress due to the rapid professional development they had to go through

when facilitating the process of planning the online learning sessions and the exposure to a wide variety of new apps and technology. Technical difficulties are also very common in online education sessions. Not only are the challenges very frustrating but they can also waste time and worsen the overall experience for both the teachers organizing the lesson and the students trying to learn. Furthermore, as online learning requires students and teachers to stay in front of a screen for a long period of time, students and teachers may not be able to avoid eyestrain and an over-exposure to blue light, which could affect the quality of sleep.

Because online education is new to everyone, it is not a surprise that it is not perfect. In fact, the system has proved to have many flaws and plenty of room for improvement. This could be a turning point for the industry, guiding an increased usage of this innovation.



Katelyn Oh

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K-Revolution

By Rachel Lee

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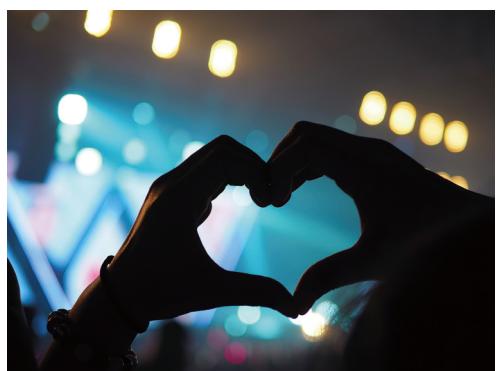
Decked out in almost identical tops in shades of bubblegum pink, an ensemble of nine girls expertly gestured toward the cameras moving toward them as they sang and danced along to their latest pop single. Top girl group TWICE, who debuted in 2015 with their hit song “Ooh-Ah,” were promoting “Heart Shaker,” which was topping charts in Korea and Japan at various music broadcast shows in 2017. But unlike singers in the United States, who typically guest as the sole musical star of late night or daytime talk shows, TWICE was performing at one of many shows centered solely



on K-Pop idol groups. Their massive fanbase had gathered to watch their polished dance moves and listen to their catchy song – in fact, it was difficult to hear the girls singing because of their fans’ synchronized cheers coordinated to match the lyrics of the song. TWICE and their fans are just one group out of the hundreds in the massive K-Pop industry, known for its rigor and distinctive style of training and approach to music and fandom. Today, K-Pop has grown into an internationally recognized genre; BTS has won a Billboard award and was even nominated for a Grammy. But the beginnings of the industry were far more humble and complex over twenty years ago.

The year was 1992. Most songs of the previous decade were ballads and folk songs on national singing contests broadcast on television, but came Seo Tae Ji and the Boys. They were like a breath of fresh air to the Korean music scene. For the first time in Korean history, they incorporated Western music

style with Korean roots, revolutionizing and pioneering what K-Pop meant and paving the way for more 90's boy/girl bands such as H.O.T, g.o.d, and S.E.S to experiment with bubbly, pop, and R&B styles. An instant hit with Korean teens and young adults, their hits such as “Come Back Home” addressed issues such as school violence or unhealthy aspects of Korean society – a stark contrast from the clean and regulated content of Korean music in the past.



This sudden addition that turned music into one of the most influential cultural commodities of current-day South Korea was only possible due to a government policy change in 1987. In the past, the government strongly regulated the music and entertainment

industry; in fact, only two television channels were available for Koreans. Prior to the liberalization and reformation of Korean entertainment, the scope of the Korean music scene was limited to “trot” music, which is a Korean form of folk, and ballad songs; pop and rock songs were only popularized through the debut of Seo Taji and The Boys.



Although almost three decades have passed since the emergence of K-Pop, Korean idol groups and entertainers continue to preserve and pass on the core values that musicians held in 1992. In 1992, musicians fought for their right to release work that represented their artistry and their dedication to the craft. In 2019, musicians fight against their labels and agencies to

break out of the “factory-style” mold that K-Pop is known for in order to showcase their unique, distinct traits. Although contemporary groups such as BLACKPINK, Twice, or BTS may be more exposed to an international audience than the early pioneers of K-Pop were, they would not have been able to release tracks and tour the world if it weren’t for the 1st generation of idol groups. And they honor these pioneers by preserving the roots and purpose behind idol culture in South Korea: challenging societal norms in a fight for individuality.

Rachel Lee

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Innovation: Everything Starts With A Small Step Forward

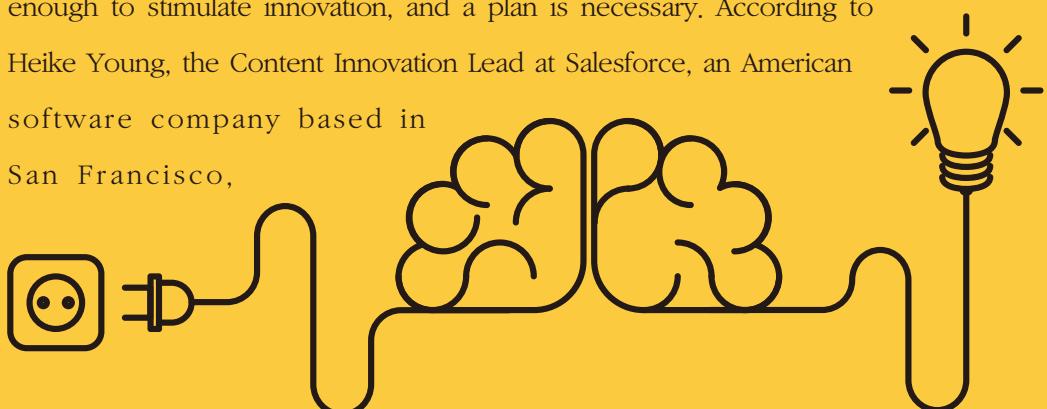
By Seoyoon Eunie Choi

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The printing press. The electric light. Antibiotics. These are some of the largest, most impactful modern innovations. And they all started with a spark of an idea, followed by a tentative tread forward.

Many people advise others to think of the bigger picture, to imagine how everything should turn out in the long run. Because, ultimately, the product or outcome would be the most important. But when thinking of something huge, something as revolutionary and innovative as the inventions and developments mentioned in the beginning, small steps are equally as important.

One of the biggest blockers of innovation is having no short-term vision. An idea is relatively easy to have, as one can manifest spontaneously. But carrying out that idea to make it a reality is quite difficult. Even a clear vision, not just a vague idea, is not enough to stimulate innovation, and a plan is necessary. According to Heike Young, the Content Innovation Lead at Salesforce, an American software company based in San Francisco,



California, the “end result seems great, but the ‘how’ is unknown. That’s…[what makes it] hard.” Heike Young has a lot of experience turning her ideas into reality, as she is the creator of many popular marketing podcasts and different creative software, and she said that having several pathways, with clear, simplified steps, really helped her bring her visions to life.

So not having short-term goals can impede innovation. Then how can we fix that?

The first step is to build at least three different pathways. Even before the small steps are specified, a general direction should be established. Each of the pathways should consider effort and realism, as well as the true vision of the new innovation. Then, all of the pathways should be pursued until one rises to the top, meaning that it turns out to be the most efficient and realistic as well as similar or even identical to the original idea. This is where the small steps come to play.

First of all, the short-term goals should not feel too comfortable and bring challenges that need to be dealt with in the far future. In order for innovation to occur, comfort zones must be strained and pushed to the limit. Because the innovations mentioned in the beginning? They didn’t just happen while someone sat back and watched.

Furthermore, the small steps shouldn’t be too focused. That is because if the small step is extremely crucial to the grand scheme of things, but is very constrained, there would be no room for trial and error, which is also an important factor in innovation. It can also kill creativity and create a false sense of security that, when failure hits, can cause even deeper disappointment and make it easier to give up. It is important to find the right balance between a step that pushes limits and a step that is relatively

loose, because they will all build up to a grand final product. But if a step fails, if it isn't as much of a happy medium between the two requirements as initially imagined, giving up shouldn't be an option. It is a way out, not a way through. And through compromises but also an adherence to those small steps, the idea for innovation can become a reality.

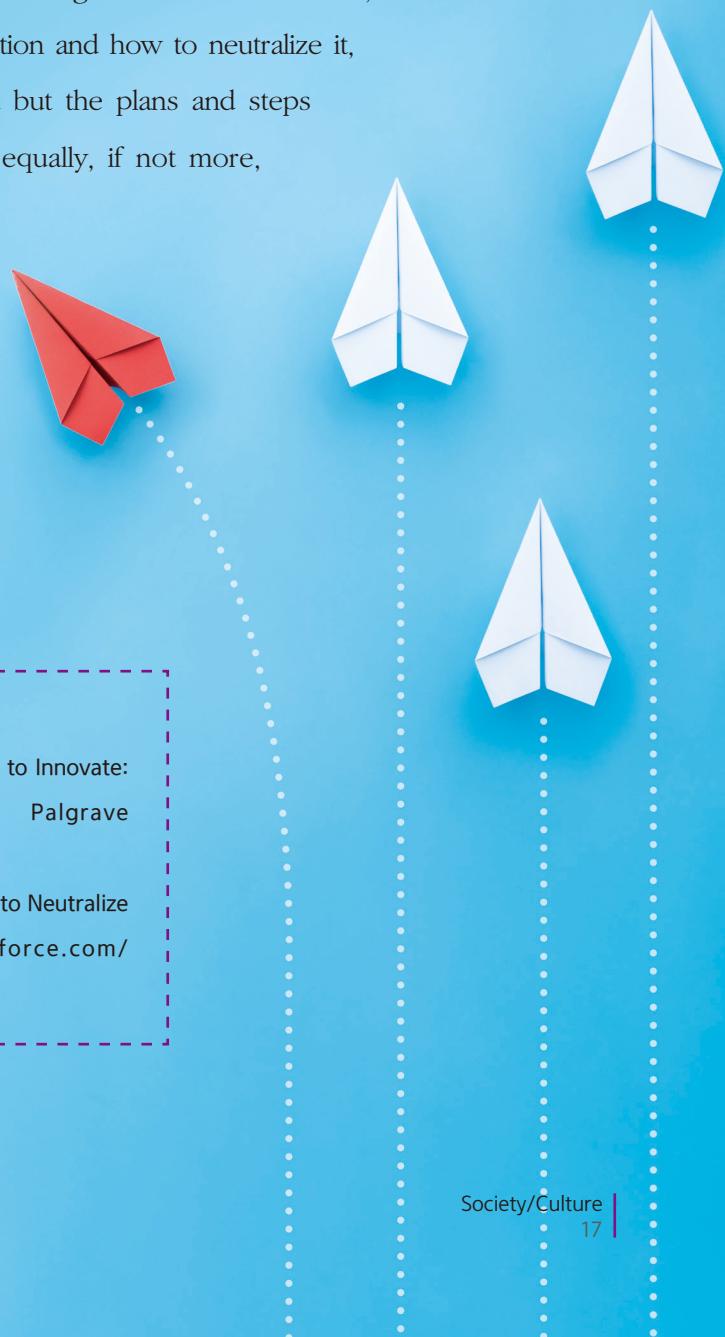
This article did not focus on how to come up with an idea for innovation, nor did it specify a solid set of steps needed to bring an idea to life. Instead, it focused on one of the biggest blockers of innovation and how to neutralize it, as ideas for innovation are important but the plans and steps necessary to carry out the idea are equally, if not more, crucial.

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03 Science & Technology





Nintendo Switch

By Sean Koo

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When people think of innovative ideas, they often think of objects not commonly used in our world. However, the Nintendo Switch, which people use in everyday life these days, is one of the most innovative ideas in the world in my opinion. Because of the corona, people started buying switches for entertainment. This object is sold out of online shopping stores unless you want to pay at least over \$130.

The Nintendo Switch first came out on March 3rd, 2017. It's making was developed by Kimishima who stated that the "younger employers" led this development. The Switch's selling rate surpassed the older records and is known as one of the fastest-selling consoles. The Nintendo Switch sold out in 2020 mostly because of the COVID-19 making it expensive by at

least \$100. According to GamesRadar, most of the best games are Nintendo Switch products.

Many people may be thinking right now what is so good about a Nintendo switch? Isn't it similar to the Nintendo 3DS? The answer is no. There are many differences between the old Nintendos and the switch. While the old Nintendos were only a one-person device, the Nintendo Switch is a one-person or family device. Its controllers at the side could be taken off and be used for 2 people or 4 if a person bought 2 more remotes. Another difference is that games could be downloaded. In the old Nintendos, most of the games needed to be bought as a chip. However, as the Eshop expanded, it became possible to download all the games online without needing to go out. The last major

differences are its forms. While the 3DS and other games could only be used as a holding device, while the Nintendo Switch can connect to a TV, can become portable, and can split up.

Innovation ideas aren't always supposed to be found uncommonly, it can also be found in common places in our everyday life. One of these best examples is the Nintendo Switch. In conclusion, the Nintendo Switch is a widespread innovative device. Nintendos new creation is wide selling and worth to buy.

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Chemists Discover New Way of Identifying Molecules

By Thomas Yonghee Song Jr

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Recently, chemists came up with a revolutionary way of mapping and analyzing chemical structures that can save massive amounts of time. This new way of mapping chemical compounds serves as a positive implication for molecular scientists working in many different fields other than just chemistry, including medicine, forensics, and physics. Scientists have already started applying this novel method in the verification processes of drugs.

Prior to this discovery, identifying and mapping chemical structures of substances was a very crude process that involved months of hard work with numerous trials, amounting to results that were barely satisfactory. Scientists usually used X-ray crystallography for this purpose, which involved shooting x-rays at a substance and observing the paths of the rays as they rebounded from it to create a general model. Since X-rays usually pass through material in order to create images, they had to shoot fairly large “crystals” with the X-rays, normally measuring at least 50 micrometers on one side(although this is still incomprehensibly small, it is actually quite a big measurement when dealing with such fields of chemistry).

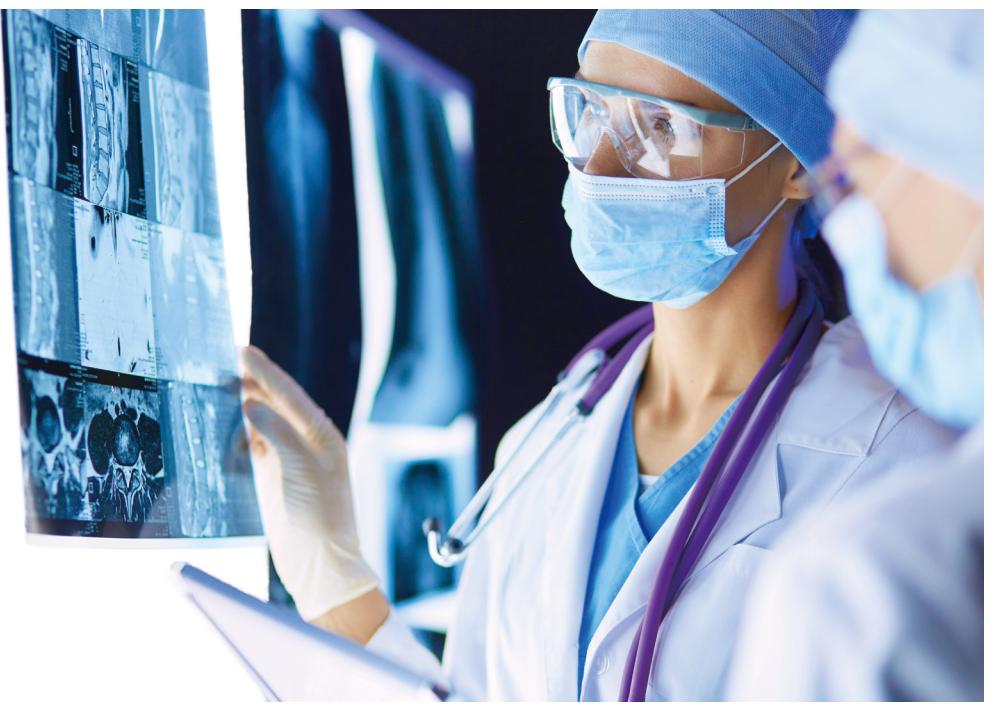


Therefore, after many trials of shooting crystals at the substance, what the scientists obtained was a very approximate model; many described it as using a sketch to analyze something as complex as an HD photograph. These crystals, large in size, also took a lot of time to produce, as they had big, complex structures. Creating the crystals itself could take years, and they often failed to create ones that were fully functional.

However, this was changed drastically with the development of a new technology which was spurred from an endeavor by a team of scientists. They tried shooting electrons at molecules instead of X-rays, and found that this yielded much smaller crystals at 100 nanometers. Due to this smaller, more compact size, the scientists first of all gained the advantage of feasibility. 100 nanometer crystals are very common, often ready on shelves of chemistry labs. Furthermore, it allowed for greater precision, as the particles were smaller and steadier.



Thus, this innovative experiment ultimately afforded chemists all around the convenience of reduced time required to map out molecules and an increased accuracy of results. Furthermore, this development has many unprecedented implications for the future; shortening the required time from months and years to mere hours and days provides workers in a variety of fields with limitless possibilities. For example, it is easier for investigators in forensics to identify different substances



found in crime scenes. It also becomes very easy for people to detect recreational drugs, verify medicine, and to map out newly found/created substances.

Although this

isn't necessarily the first time whereby scientists thought of creating models through electrons and smaller crystals instead of the conventional method of X-rays, this is the first time in which the idea was actually tested out in a lab; the results, in fact, turned out to be very successful. Many chemists are enthusiastic about the great progress that has been demonstrated through the creation of this method, and hope that they can further refine and harness it to potentially benefit countless different fields of studies. In science, it is critical that researchers find ways to diverge from conventional methods to create ones that are new and better.

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Technology – How Email Has Changed Our Lives

By Katelyn Oh

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Email has become an indispensable part of our lives. It is the primary means of communication for many people around the world. With email, people can transmit messages in the form of electronic signals to anyone anywhere at any time in a split second.

The history of email extends over 50 years. In 1965, the first email system named “MAILBOX” was created and used at Massachusetts Institute of Technology (MIT). Similar to leaving a written note on someone’s desk, the first form of email was simply a message placed in the receiver’s file directory so that when the receiver logs in, the message can be read. However, after the invention of the Internet, the email system had to become a little more complex in order to deliver the electronic messages to the correct address. To solve this issue, in 1971, Ray Tomlinson developed and sent the first networked email and chose to use the ‘@’ symbol to indicate the sending of messages from one computer to another, marking the start of the modern email system. Eventually, as the Internet developed, the electronic mailing system began to gain popularity and finally, by the late 1990s, the age of email had begun.

Before emailing became the norm, people relied on paper and slow hand-written mailing systems for all communication. The introduction of email brought many benefits to society; the process of communication had become so much more efficient since communication was accessible and able to be done at an instant. For



example, before email, all mail was hand-written and physically sent to the recipient. This process took a very long time, incomparable to the speed of email. In addition, anyone you encounter over the age of 15 is most likely to have at least one or two email accounts in use, which adds to the overall convenience of email.

Currently, more than 600 million people around the world use email and over 100 billion business emails are sent every day. With all the advantages we are given through the use of email, it is obvious that the fact that email has revolutionized communication is not an exaggeration, since it has forever reshaped the way we communicate and manage our lives.

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Virtual Reality

By Eric Yoon

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These days, virtual reality (VR) might be one of the most well known and representative examples of innovative technology that is continuously developing and will maintain in the future. Virtual reality, also known as artificial reality, cyberspace, or virtual worlds is a simulated experience that allows one to venture outside of the real world. It can be similar to the real-world, or it can be completely different. A lot of people, especially the younger generation might know virtual reality as entertainment technology. It is true that entertainment is one of the well-known applications of virtual reality, but it also has been used in other fields and shows a lot of positive aspects and rapid development.



Virtual reality has begun to be widely used, and is becoming increasingly common in the medical field. For example, virtual reality technology can help educate residents, doctors, and surgeons by allowing them to virtually perform surgery before an

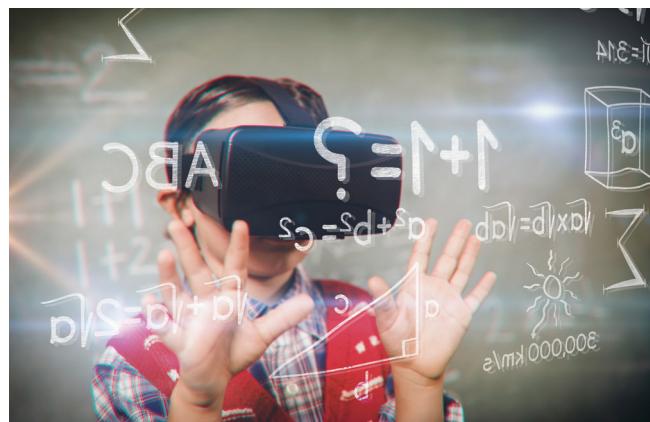
actual surgery takes place in order to plan or find various surgical methods and prepare for it. This can result in increases in success rate and decrease the probability of failure and risk. Furthermore, virtual reality in the medical field is not only used in surgery or training, but it is also used in treatment, such as Post-traumatic stress disorder (PTSD), phobia Therapy, pain management, and dealing with addiction. In fact, VR-enabled therapy is a proven way to deliver rapid, lasting improvements in mental health. According to Oxford VR, virtual reality treatment has been successful in reducing 70% of patients' fear. They also added that virtual reality can even help patients with depression, schizophrenia, and paranoia.



Another representative field that virtual reality uses has potential for future development is the military. The reason why the military started to use and further develop virtual reality because it has great positive aspects, one of the main advantages being that it can provide safety. As virtual reality is able to fabricate realistic situations, the military can find their weaknesses or strengths and can create plans that

best suit their army. In addition, by using virtual reality, the military can reduce the cost of training. The replicas of weapons or vehicles cost less than actual inventory, and it allows the army to practice by reproducing the same situation they would face on a real battlefield. Furthermore, due to virtual reality, the military can predict war situations in advance and train more practically, increasing combat efficiency and reducing risk.

Finally, virtual reality is also used in students' education. By using virtual reality, students can experiment with various places by going on virtual field trips. For instance, visiting museums, going to outer space, going back in



history, or even experimenting with future life. This can result in more engagement from students than just learning from a textbook. It allows students to be more interested and have a better understanding by immersing themselves and exploring the other worlds. Virtual reality is still in the early stage in education, but many different countries including Canada are starting to conduct virtual reality activity classes in high school. Besides that, a lot of experts are looking forward to seeing how virtual reality in education will develop in the future.



In conclusion, the introduction of the virtual reality system has many positive aspects. Such as: practicing and preparing in advance, increasing our safety while minimizing risk. Also, as it is used in many fields,

there is a high possibility for future development. With innovative technologies such as virtual reality, we need to maintain our attention and support so that various new technologies that we have never seen before can continue to develop and improve our quality of life.

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DDT innovation

By Andrew Nam

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The title of the book “silent springs” symbolizes the death of mother nature. This book highlights the downsides of DDT. There has been a controversial debate that discusses the use of DDT. The absence of life depicted through a harmless town, where all forms of life had to the shadow of death, inspired many to be aware of the environment and all the concerns. There is no secret that DDT made a substantial impact back in the days. DDT was so innovative in that it changed the way how people dealt with diseases that are spread through insects.

DDT was a commonly used pesticide in the 40s. A man by the name of Paul Hermann Muller discovered its potency as an all-purpose insecticide. During the second world war, insect-borne diseases like malaria, dengue fever, typhus, and others killed millions of civilians, leaving them hopeless and afraid. DDT was used in America and was common among American troops who needed it to control their illness. After the war came to an end, farmers started to use its effectiveness in controlling pests. Before the book “Silent springs” was published, nobody had believed that DDT was hurting nature. However, some scientists noticed that DDT was mailing the



environment and was a severe threat to the wildlife population. Even though there was detrimental to wildlife, humanity has never seen an insecticide that could save individuals from insect-orientated diseases.



There was a town in lower Idaho, where life has been prospering and good. The city was filled with friendly people, hillsides of orchards, vibrant colors of animals, and green fields. The dogs barked upon the grazing hill as the sun shined on them. This town was beautiful, filled with natural beauty. One mysterious spell swept the whole city, sweeping the animals with maladies—these tragic events where the effects of DDT. DDT also negatively enters the food chain, as food chains from small birds and

pests, then birds to birds of prey are concentrated on DDT in birds causes weakness in their eggs and reduce their population. This reduction in the wildlife population is another reason why this insecticide was so innovative. This innovation destroyed the animals and the environment detrimentally. DDT was also innovated in a negative manner.

Through the help of Rachel Carson's book, DDT is now banned as it is harmful to wildlife. As the harm of DDT became more relevant to society, countries worldwide are starting to ban this pesticide or restrict the use of this deadly weapon. By 1970, European countries such as Hungary, Norway, and Sweden had begun to ban DDT. After a long and hard-fought debate, America finally prohibited the production of DDT in 1972. This decision split the country since there were frequent moments in which DDT was necessary. With the exception of most countries, India and sub-Saharan states are still legalizing DDT, as malaria is still considered to be a deadly threat to them. All in all, DDT had a lot of downsides and benefits, but this insecticide was innovative with no doubts.

Andrew Nam

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The Brain and Computers: A New Way of Living Life

By Jason Lee

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The year is 2060, and humanity is at its peak. We avoided dying out of climate change, created better and better medicine that allows us to live for longer and longer, and created equality for all. A part of this future world is neural implants, that allow humans and computers to interact with each other, even with the internet, allowing the human mind to transfer any data at the whim of thousandths of a second both in and out. This would make all humans superhumans, as they would all be very smart and be able to learn/do anything immediately. However, this could also cause life to lose meaning as if everyone can do anything, then nothing would be fun to do, and nothing would be original. It's as Syndrome from the Incredibles once said, "And when everyone is super... no one will be." So, what is this new, potentially revolutionary technology, and what will become of it? To understand that, we must look at how it functions, its potential capabilities, and what society has/will make of it.

First and foremost, let's take a look at how these implants are even supposed to function, and how they're going to be implanted. For simplicity, during this essay, we will mainly be looking at an innovative tech startup founded by Elon Musk, named Neuralink for examples of how this technology is being developed. So, how will this brain-enhancing technology be implanted? Well, according to Zoë Corbyn, a journalist for the Guardian who specializes in tech, Neuralink will actually be using A.I. and a sewing machine-like robot to implant the thousands of electrodes, or what are essentially wires, into the brain, and a small microprocessor that rests on the skull

[1]. This is extremely interesting, as this would not only potentially lead the way for surgeons to lose their jobs in the future, a point I will elaborate on later, but also because it has never been done before, and will surely set humanity upon a new era of medicine and technology. So, that's how technology is going to be implanted, but how will it work? Well according to New York Times Journalist John Markoff, who is a long time knowledgeable tech reporter, there will be a small processor that is part of the neuralink implants, that rests on the surface of the skull and connects to all of the implanted electrodes in the mind, interacting with synapses and sending and receiving small, controlled electrical signals to transfer information to and from the brain [6]. This is very interesting, as it could change the way that we look at our body forever, i.e., incentivize the creation of better humans physically and mentally.



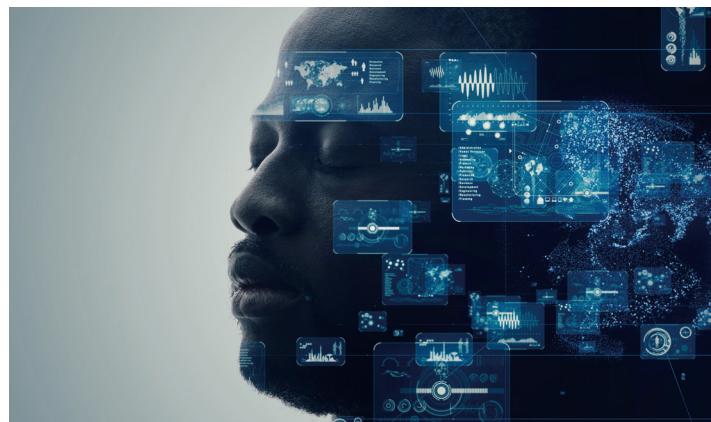
Also, on a more down-to-Earth note, the advent of small processors and such would help electronic manufacturers, as they could make more and more powerful

phones and computers that are lighter and more compact. Adding on to this information, according to Kenny Li, who is an MIT graduate and a Medium journalist, Neuralink will also use a wearable outside of the skull that resides behind the ear called the link, which will house the battery for the processor and such, plus the operating system. It will be fully detachable/removable in case you need to do things like recharge it [5]. What this means is that people will be able to see things in their eye as if they were Iron Man in his suit, as this little add on will allow the human eye to actually “see” something using the operating system.

Now that you can understand how this sort of technology will work, let’s look at how it’s actually going to be used in society by consumers, doctors, etc.. For an answer to this, we can again look towards John Markoff of the New York Times’ extensive research on this technology. According to him, Neuralink is mainly being proposed to the government and doctors as a way to help people with disabilities and nerve damage. To elaborate, by implanting such electrodes in certain areas of paralysis and such, and then connecting said electrodes to the brain, they could potentially fix



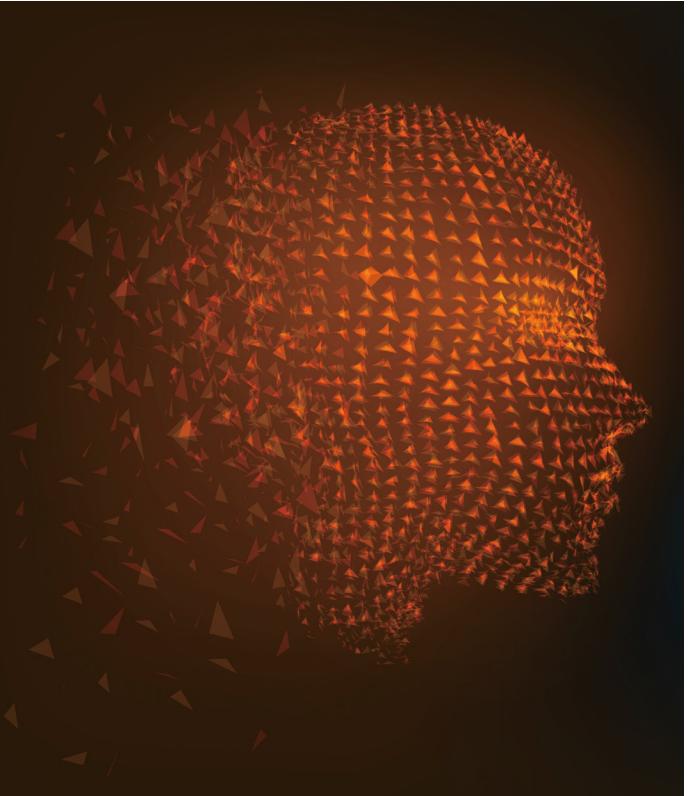
a lot of problems that physically disabled people have [6]. This is important, because this would actually, literally change people's lives for the better. It could save people from depression, and make many more people a lot happier, just with a relatively simple fix. Other than that, according to Science Focus, a trusted scientific magazine that is a branch of BBC News, this technology would also make doctors, engineers, etc.'s jobs easier. To add on to this claim, jobs that require the worker to follow steps and such would be made easier to do and potentially make the final product better if said workers can get live instructions through their eye or something along those lines [2]. This would be interesting, because it would make humans faster and better at their jobs, and could even potentially give employers a better reason to not just replace all humans in the manufacturing business with robots, which would save a lot of people's jobs. And finally, another very cool potential use of this technology could be communicating with people and browsing the internet. According to Kenny Li of Medium, Neuralink is developing parts of its product that would allow for its users to do things like privately



browse the web inside of their brain, enabling things like instant shopping through just a few thoughts. Also, it would allow humans to instantly communicate with one another through their thoughts [5]. This is very important, as a world where a human can access any information instantly or send information instantly from anyone anywhere in the world will change the school infrastructure, job infrastructures, it would be a revolution of computer/artificial intelligence-enhanced people that would change society forever. Plus, on a less extraordinary note, it would be very fun to be

able to telepathically communicate with your friends. Jokes aside, this technology, if successful, will change everything in only the span of maybe a couple of hundred years.

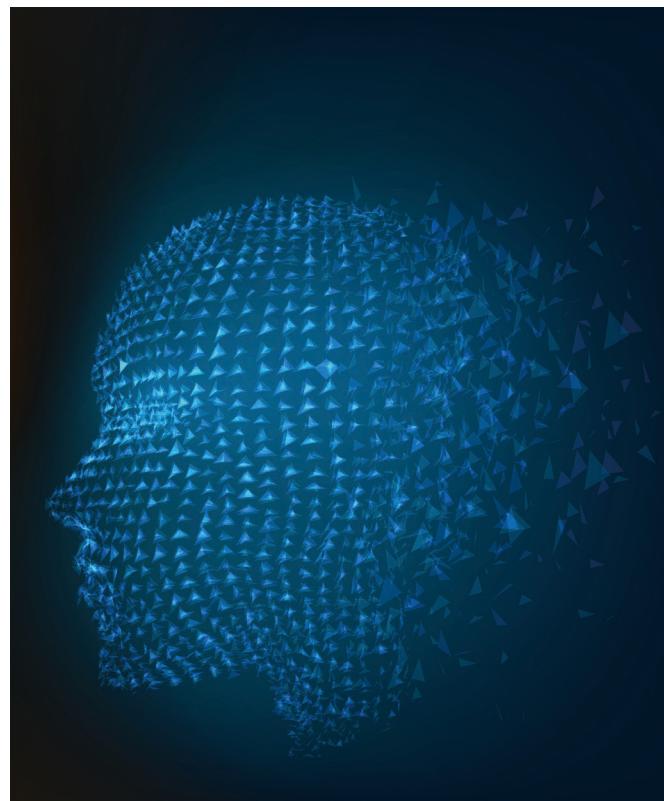
And last but not least, what ethical or moral backlash does/will this technology have from the public? Well, for one, according to Andrew Maynard, Director of the

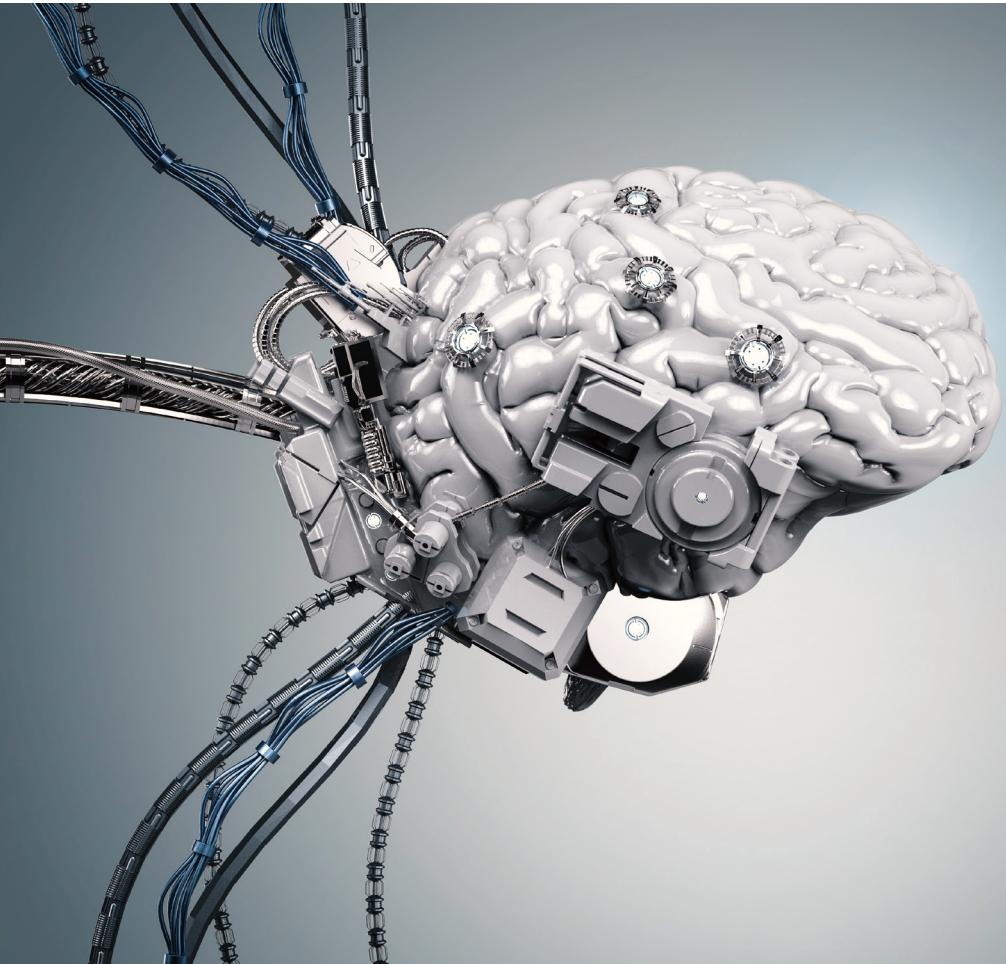


Arizona State University Risk Innovation Lab, Neuralink will probably, and already has from some experts and people from the public via social media, face a lot of backlashes as it would change almost everything about how humans lived. As I talked about earlier, this tech would allow people to interact differently, would render most educational tests not viable, and so on. This would disrupt many, many social norms and customs, and would thus surely anger a large number of people [7]. This is important, as if the public does not support this technology, then it will never take off and have the

supposed positive benefits that it could bring to humanity. Also, if this isn't supported by the public, arguably more important enhancing technologies such as CRISPR would also probably never take off and could lead to the preventable death or pain of a lot of people. Another potential form of backlash that companies like Neuralink could receive from the public is regarding the possibility of people hacking other humans. According to Isobel Asher Hamilton, a tech reporter for Business Insider,

there is a possibility that an intelligent hacker would be able to get inside of the operating system of brain implants, and would thus theoretically be able to control people [3]. This is obviously extremely important, as if people could control other people using this technology, then it shouldn't be allowed. However, Neuralink and other companies still have not come up with a good security system to combat this, which could be an especially big problem in the future if there are a lot of users. On top of all of that, ethics regarding the enhancement of humans would be very prevalent if this technology were to ever come out. To add on to that, according to Sven Ove Hansson, a Swedish Philosopher, and professor of Philosophy, if this technology comes out and makes almost everyone in society super-smart, as they have all of the information in the world in their mind, it would make the good mental qualities among people redundant, as nobody would be unique. Pair this with technologies like CRISPR that could change the physical appearance of people, and it's no wonder why people may not want this technology to be released [4]. This is important because, while it is true that the potential future where no human is special and life thus has little to no meaning, this technology has real possible benefits for a lot of people, and so these ethical problems need to be addressed, because otherwise this technology may be shunned, and would thus be a missed opportunity in the history of humanity.





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In the end, the merging of human brains with computers is not far off, and thus so too is the drastic change of society and how each human will live their life. So, keep this technology in mind, as it is very important. It can be the future of humanity, whether good or bad and will prove to be very interesting as it expands as a concept and possibly into an actual product. This technology has the potential to change the world as we know it, but both for the good and for the bad. So, the question is, will it lead to our prosperity, or our demise?

By Jason Lee

Seoul International School, 9

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Innovation in the Industrial Revolution

By Nancy Koo

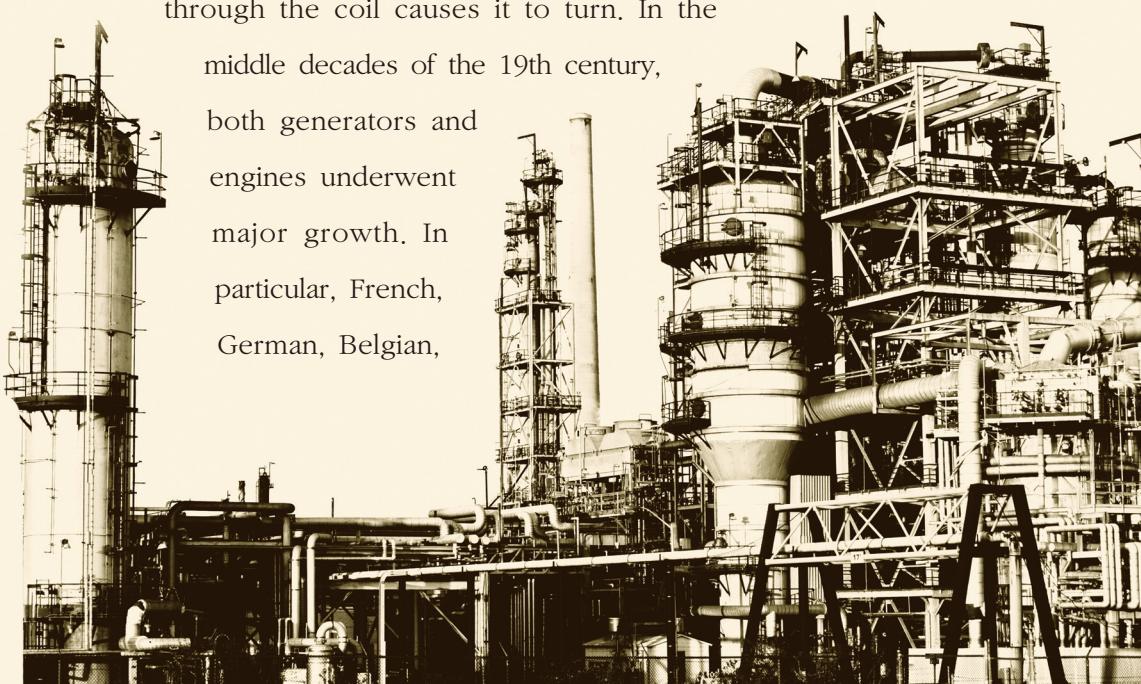
Seoul International School

The Industrial Revolution was a time of great industrialization that started in mid-18th century Great Britain and spread to other European nations, including Belgium, France and Germany, and the United States. It's considered a significant event in history that marked the beginning of the new era we live in. The driving force behind the Industrial Revolution was the discoveries and technologies that constantly fuelled the event by providing better and better means for increasing production, creating new processes and improving distribution. Innovations such as the spinning jenny, water frame, and power loom transformed the cotton industry, which became the revolution's biggest driver; the steam engine of James Watts powered locomotives and ships to revolutionize transport; the telegraph transformed the face of communication and laid the groundwork for future advances in telephones, fax machines and the Internet; and the light bulb sparked a rapidly expanding lighting industry across cities and towns around the world. British windmill design was greatly enhanced by the refining of the sails and by the fantail's self-correcting system, which held the sails pointed into the wind. Spring sails replaced the windmill's traditional canvas rig with the equivalent of a modern venetian blind, whose shutters could be opened or closed, to allow the wind to move through, or to provide a surface on which to exert its weight. For the "patent" sail in 1807, Sail architecture was further developed. In mills fitted with these sails, a lever inside the mill connected by rod connections through the windshaft to the bar controlling the shutter movement on each sweep operated the shutters on all the sails at the same time. Through hanging weights on the lever in the mill, the mechanism could be made more fully automatic to calculate the maximum wind.

pressure above which the shutters would open, and the wind would spill. Conversely, counterweights may be installed to hold the shutters open. British windmills adapted with these and other modifications to the increasing demands on power technology. Yet, in the 19th century, the use of wind power declined dramatically with the spread of steam and growing power consumption rate. Windmills which had satisfactorily provided power for small-scale industrial processes could not compete with large-scale steam-powered mill production. Windmills which had satisfactorily provided power for small-scale industrial processes could not compete with large-scale steam-powered mill production. This combination of steam power followed the emergence of electricity as a source of power late in the 19th century. An international group of scientists, including Pennsylvania's Benjamin Franklin, Alessandro Volta of the University of Pavia, Italy, and Britain's Michael Faraday, had done the groundbreaking work. It was the latter who in 1831 had shown the existence of the enigmatic relationship between electricity and magnetism, and his experiments provided the starting point for both the mechanical generation of electric current, previously only available from chemical reactions within voltaic piles or batteries, and the use of such current in electric motors. Both the mechanical generator and the motor depend on the rotation between the poles of a strong magnet of a continuous coil of conducting wire: turning the coil generates a current in it, while moving a current

through the coil causes it to turn. In the

middle decades of the 19th century, both generators and engines underwent major growth. In particular, French, German, Belgian,





and Swiss engineers invented the most satisfactory forms of armature, the wire coil, and developed the dynamo which made commercially feasible the large-scale generation of electricity. In conclusion, the innovation that happened during the Industrial Revolution had a major and long-lasting effect on people's life-style and still has a profound effect on everything around us. It has been noted as one of the most important and innovative phases in history and should be remembered and learned from.

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04 Current Events

How South Korea is Ahead of the Curve of the Coronavirus

By Kristin Cho

Havergal College

COVID-19, the novel virus, has been inundating the news and media globally. With the exploding increase in the number of people getting infected all around the world, countries are putting great efforts to handle this pandemic. South Korea is especially getting applauded because of the nation's quick actions and high technology to mitigate further spreading of the virus. Despite not being able to quickly create vaccines or medicines, making test kits that are effective in diagnosis is South Korea's strategy in coping these difficult times. The government's investment in PCR (polymerase chain reaction) test kits and the competition between companies creating financial motivation, is driving the production of test kits in South Korea.

At the Seegene Laboratory, tests are done by automated liquid handling machines allowing 15,000 test per day and each sample is carefully opened inside a negative pressure room. First, the virus' RNA is extracted to be isolated from any other substances. Then, the RNA sample is mixed with reagents and is the converted DNA is later put in the RT-PCR machine to amplify the DNAs. Most labs target one or two from three types of genes but the Seegene Allplex 2019-nCoV Assay offers unique technology to target all three genes in one tube which saves time immensely.

Luckily, thanks to these accurate and quick test kits; educated citizens wearing masks and washing their hands; applications notifying where people with confirmed cases have been; and the hardworking frontline healthcare workers, the number of daily cases in South Korea has gone down from over 800 during the peak in February to only 8 on April 19th. South Korea's government and healthcare workers have made

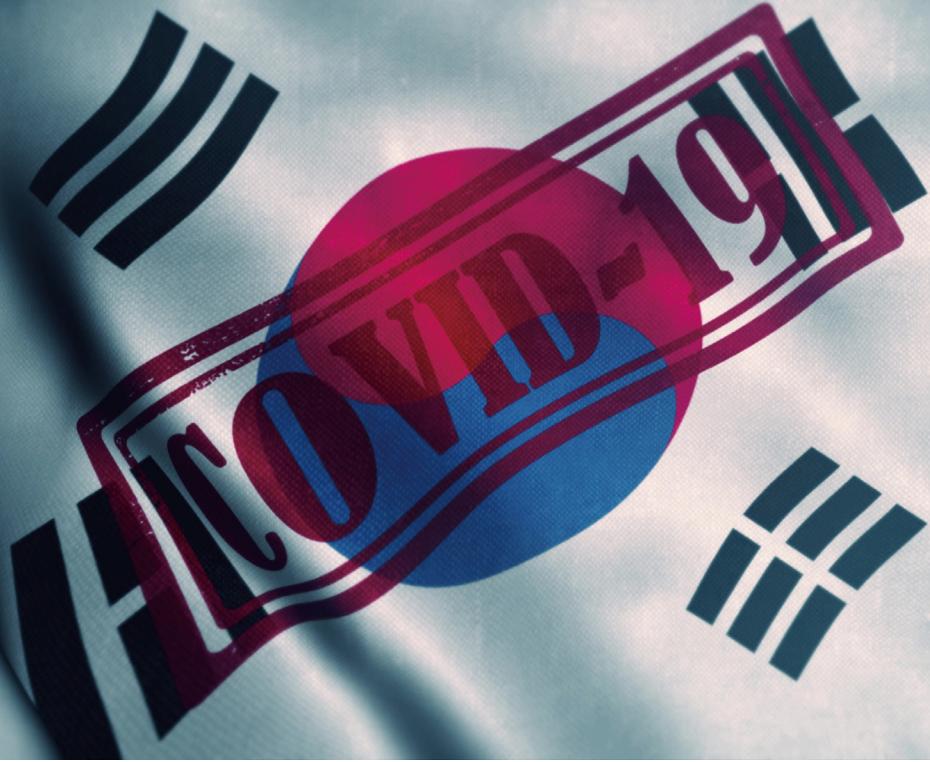


COVID-19 testing the most accessible in the world. Anyone in South Korea who wants to get tested for COVID-19 can do so with the test being free for those with respiratory symptoms or those with a doctor's referral. Additionally, the establishment of over 600 testing centres, drive-through methods and even a walk-through clinics, testing is made even more available throughout the country. According to Dr. Jong-Yoon Chun, the CEO of Seegene, using diagnostic machines

take only four hours to test samples from 94 patients, which is approximately four times faster than people manually mixing solutions. Additionally, it reduces the risk of any human error or contamination. Factors that could possibly be slowing other countries can also include using test kits that only test one gene per tube which is less efficient. Although South Korea is currently in the lead of controlling this outbreak, nobody should already be relieved. The moment anyone becomes arrogant, things will only get worse.

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Possibilities of a Vaccine for the COVID-19 Pandemic

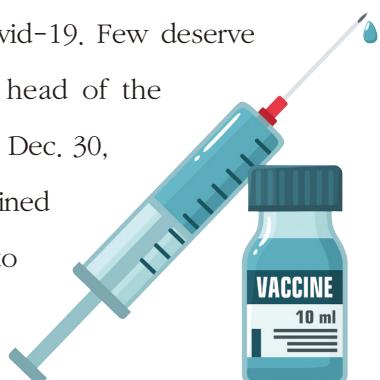
By Grace YongEun Song

Seoul International School

With the World Health Organization(WHO)'s final declaration of the COVID-19 as a pandemic, the respiratory disease has spread wide across regions all over the world. However, the development for a vaccine to treat this virus is an excruciatingly slow endeavor. Even the top scientists are spending long, hopeless hours in labs, performing experiments after experiments to develop a vaccine for the COVID-19.

Oxford University researcher, Sarah Gilbert says: "I've got 57 million things to do at once,". She has already devised a possible vaccine for the viral disease and is considered as one of the main frontrunners to prevent the outbreak. Gilbert also expresses exhaustion such as her deprivation of sleep and time as she cobbles together funding and field calls on how to quickly get the vaccine into production.

Gilbert is considered a hero of the crisis, as thousands of experts across the globe are trialing vaccines, developing new tests for the virus or devising innovative public health strategies to control the outbreak. The story of the COVID-19 outbreak dawns in China, where doctors and scientists played pivotal roles in alerting the world about what would come to be called Covid-19. Few deserve more credit for sounding the alarm than Ai Fen, head of the emergency department at Wuhan Central Hospital. On Dec. 30, she received a lab report on a patient with unexplained pneumonia. "If I had known how this was going to play out, I wouldn't have worried about being reprimanded," she told the Chinese magazine



Renwu. “I would have spread the word everywhere.”

When Gilbert first heard about the virus, she instantly gained a sense of what might be at stake. She’d been overseeing clinical trials of a vaccine against another coronavirus that causes respiratory pneumonia and sparked a global public health crisis in 2014—Middle East respiratory syndrome (MERS). When it first emerged, MERS looked exceptionally dangerous, killing about a third of those infected. But while it spread to 27 countries and more than 850 people died from the virus, it isn’t as easily transmitted as the virus that causes Covid-19.

Gilbert’s Covid-19 vaccine is one of roughly three dozen in development around the world. While they all have their strengths and weaknesses, and some are farther along than others, scientists say it’s a good thing to have so many competing ideas, because any of them risks being quickly shut down if safety concerns emerge.

“We’re working around the clock,” she says. “We have a lot of plans to develop.”

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Religion is at the Core of the Rapidly Spreading Contagion in South Korea

By Grace YongEun Song

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The largest number of Covid-19 infections outside of China is now in Korea. Health officials there have confirmed more than 1,000 cases and the virus has so far killed 11 people. About half those cases are linked to the Shincheonji Church of Jesus, a group the government describes as a cult, prompting officials to test all 200,000 of its followers. Authorities linked another cluster of cases to a church in the southern city





of Busan, and yet another to a group of Catholic pilgrims returning from Israel. The virus also infected a number of people at the Myeongseong megachurch in Seoul, which has 80,000 congregants.

In response, the Catholic Church today suspended all masses in Korea. Buddhist temples and Protestant churches around the country have also suspended religious gatherings. Shincheonji halted its services too. The moves to limit religious activity in Korea are by no means specific to Korea—churches and temples in Singapore and Hong Kong have made similar decisions. But organized religion has played a far bigger role in the spread of Covid-19 in Korea. Explaining the linkages between religion and the outbreak in Korea, Francis Jae-ryong Song, a professor in sociology at Kyung Hee University in Seoul, described the country as a “zealous Christian state.” He said many

Korean Christians have an “evangelical mindset” and their religious activities, like attending worship sessions and outreach multiple times a week, and their unwillingness to curb those activities, may have led to the large-scale spread of the contagion.

About 30% of Korea’s 50 million people identify as Christian, according to some estimates. The church is also politically active in Korea and exerts a powerful influence on government policy. The impact of Korean evangelicals is also felt strongly abroad: The country sends the second-largest number of missionaries overseas. In the context of the coronavirus, that religious fervor in Korea has played a role. A former member of Shincheonji told the New York Times that members were told not to be afraid of sickness and focus only on converting more followers. Now, as the virus tears through the Shincheonji community, the municipal government in Seoul has banned all of the sect’s gatherings in the capital.

Even as the virus spreads, and after the Korean government advised the public against mass gatherings, some have continued to attend church, and

not all churches in Korea have canceled services. Paul Cha, an expert on Korean history and religion at the University of Hong Kong, emphasized the importance of church-going as a ritual for many Korean Christians. “It constitutes an important part of your faith and devotion. Unless you’re really sick on your death bed…you go to church,” he said. He added, however, that Koreans may also be more likely to continue going to group activities as they do not have the “social memory” of living through SARS as people in Hong Kong did in 2003.

Grace YongEun Song

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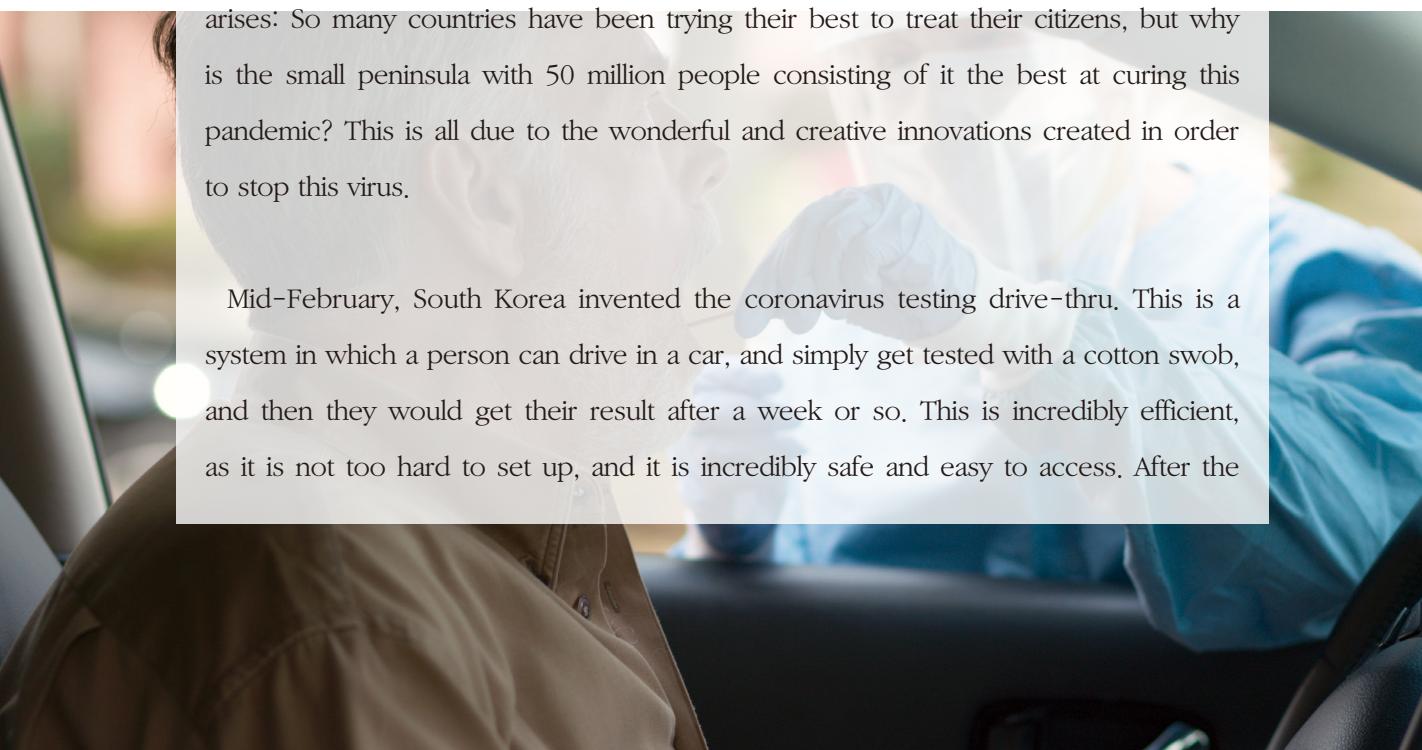
Korea's Innovative COVID-19 Pandemic Prevention Method Should Be Applied In Every Country

By Andrew Kim

Seoul International School

On March 13th, Katie Porter, a democrat and a representative from California's 45th Congressional District questioned and grilled Head of CDC, Robert R. Redfield into saying yes to free coronavirus tests, during a House meeting. For reasons such as the CDC head and the government not being able to make decisions on time that would benefit their country, the United States is currently suffering incredibly from this new virus. Currently, this is not the only nation with the issue of not being able to handle the COVID-19 with ease. For example, Italy is known for not treating elders at the age of 80 or older as they leave them to gruesomely die. Or in Japan, where people are aware of this new virus and yet they don't bother to wear face masks at all. There are various reasons in many different countries that cause this virus to spread. However, one of the first countries to contract the coronavirus, South Korea, is testing more than 20,000 people each day which places first out of all the countries. The question arises: So many countries have been trying their best to treat their citizens, but why is the small peninsula with 50 million people consisting of it the best at curing this pandemic? This is all due to the wonderful and creative innovations created in order to stop this virus.

Mid-February, South Korea invented the coronavirus testing drive-thru. This is a system in which a person can drive in a car, and simply get tested with a cotton swab, and then they would get their result after a week or so. This is incredibly efficient, as it is not too hard to set up, and it is incredibly safe and easy to access. After the



implementation of the drive-thru in South Korea, lots of other nations considered this idea. However, other nations that have not implemented this strategy have been suffering and haven't shown much improvements. The numbers, though, prove that these types of innovations and inventions are the solutions to this pandemic, as they are incredibly efficient and safe. According to CNN, "After filling out the form, doctors survey the drivers. They say this is safer than testing in a clinic or hospital where others could be exposed." It is so much more safe than visiting a hospital, as a hospital consists of many germs itself. Therefore, this innovative thought or invention must be implemented in every other nation in need.

Additionally, at the start of March, South Korea came up with the customer sanitizing booth, which is where a customer can simply get inside a booth where they would get sanitized, and the experts would test them through a system commonly used by biologists when studying dangerous or harmful animals. It is like a cage but with holes with gloves around them so the doctor and patient don't really physically interact. This is extra safe because some were worried from the idea of a drive through that there is a risk of germs transferring when interacting with the doctors directly. This is another innovative idea that has risen from South Korea that everyone should use. This is because these inventions are so much easier to use and they satisfy the customers a lot without much concern. Another benefit is that the doctors don't need to do as much work. They do not need to be worried everyday about their own health, as they are now assured that these new innovations will keep them safe from being infected, as well as the customers. This innovative invention must also be implemented in other nations as the statistics show that going to the traditional hospital is not helpful.

Such innovations mostly from Korea are the ideas and inventions that will power our search for a cure. Since this pandemic does not have a cure at all, there is a need

for lots of temporary treatments. Korea, using these inventions and ideas to their advantage, should help other nations set up these prevention methods so that the world as a whole can be safer. I wish all nations are able to successfully overcome this critical pandemic, and I hope that there is a cure for the virus soon. Until then South Korea's pandemic prevention method must be implemented in all nations.

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Sweden's Coronavirus Tactics

By Andrew Kim

Seoul International School

As each day of quarantine passes, the less excited a worker is that they cannot make money today no matter what. The less exhilarated children are to wake up and notice that they can only meet their friends through a screen. The less pleasant a preacher feels each day, waking up that everyone they used to see is now only visible through a screen. All of mankind, waking up and cooped up inside of their houses and rooms like jail cells, not knowing, will this pandemic get any better? Will I have enough masks? And most importantly, do I have the virus? All of these questions and concerns just cause another day to be filled with even more scary and worrisome thoughts. According to the HDI (Human Development Index), a measurement consisting of the factors: Health, income, and education, Sweden places a whopping eighth place. Judging by how the countries above Sweden in the HDI rank dealt with the coronavirus such as Hong Kong or Germany, Sweden needed a new strategy that was going to separate them from the other high-ranking countries. This thought arose a quite absurd idea in Sweden.

The unreasonable idea that arose was to not worry about the virus at all, and Sweden therefore

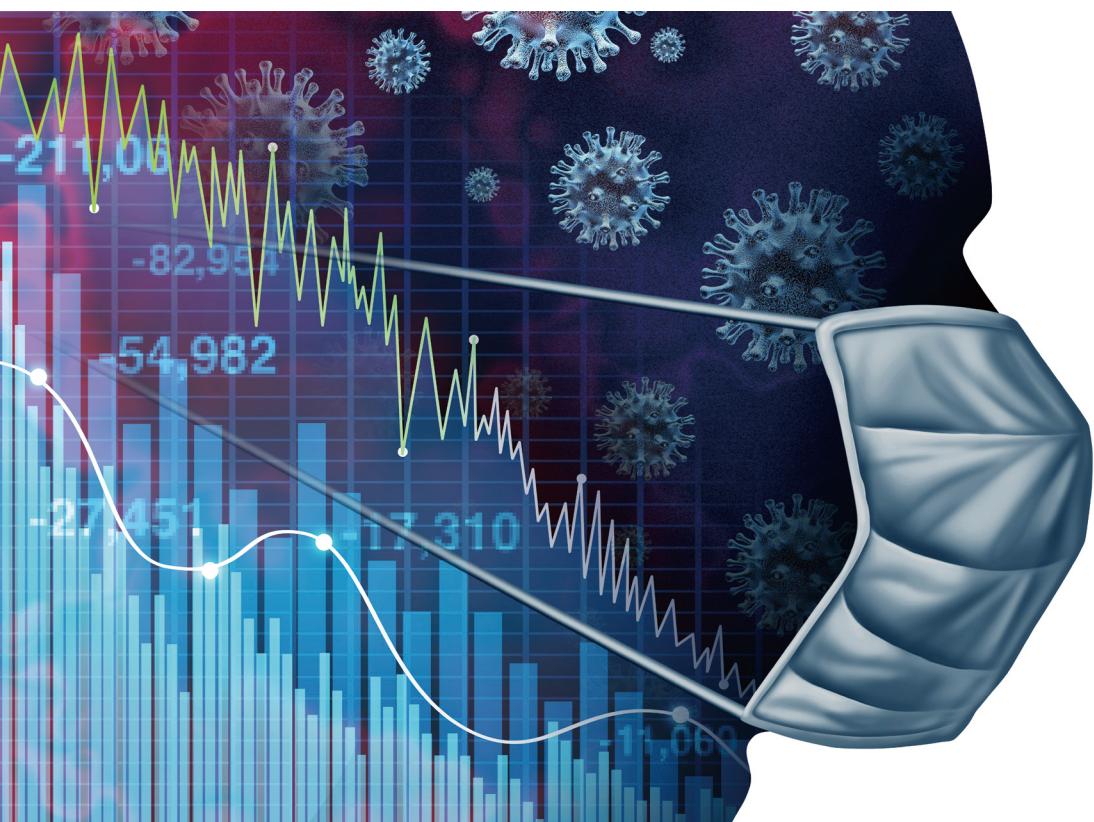


did not place social distancing orders. While New York was suffering its hardest times such as when they had no other place to put the corpse of the victims, Swedish people were peacefully walking around in streets as if nothing was going on in the world. Full restaurants, no online classes, no online churches or praying, and no one caring if the person next to them coughed or sneezed. Now the media was incredibly mad at the Swedish government for this “foolish” behavior. However, as countries with even more strict stay at home policies have shown worse outcomes than Sweden. How is that this absurd idea is working better than the other stay at home policies? Is it actually that this strategy is an innovative and effective method? The answer was not decided until recent dates. According to the dates of April 20th, Sweden has 14,777 confirmed cases of the coronavirus. These 14,777 people are not the last. There are



so many more to come as Sweden's strategy leaves no clue of how deadly the virus can hit on Sweden.

An incredibly important factor that has to be taken into account is the size of the country. Sweden is a pretty small country consisting of 10.23 million people. Being a pretty small country, although the free-to-roam policy is made and is being used, not too many would be outside. Sweden is quite different from China or any other big countries as if a lot of the Chinese people were to get out and be free to roam



around, their confirmed cases would sky rocket. However, for Sweden, not many people were outside even if most of the population was practicing free-to-roam. Because of this fact it is believed that this strategy may not be bad for Sweden. However, this solution is only temporary as the coronavirus spreads too quickly that

even the small amount of people outside may all get infected from one single person. That person spreads it to a family, and then a group, and then the country. The small size of the country therefore does not mean that the free-to-roam strategy is a long term cure.

As mentioned before, the coronavirus in Sweden skyrocketed as the virus spreading speed outnumbered the small number of people that were outside. However, it is almost as if that the curve has flattened right now. Some are questioning if this was Sweden's plan after all. Others like to believe that the virus just lost most of its power, or that it got weaker because of the weather. However, the health organizations that have come up with the free-to-roam idea states that seeing the outcomes of New York or China, although they have forced stay at home policies, they were still getting an incredible amount of confirmed cases. These researchers believed that the fast spreading of this virus was just not containable and thought: If the virus is going to reach most of the people either way, why is there a stay at home policy? Why can't we live normal lives and build social skills? This was once again considered an incredibly absurd statement, but all the statistics and data proved that this was correct. Just going back to the comparisons, New York reached 134,500 confirmed cases. This is around nine times as much as Sweden although they actually had a strict stay at home policy.

Thus, although during the beginning and middle of this "pandemic war," the Swedish tactics were considered absurd, the ending and long term result that this strategy was quite successful. However, no one ever knows how many the number of 14,777 may increase by.

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