

# THE CREATION OF KNOWLEDGE

## HOW TECHNOLOGY IS CHANGING THE KNOWLEDGE ECONOMY

The world has developed for centuries by the passing on of knowledge from one person to another. In its earliest forms, civilizations passed on knowledge by simple observation. Hunter-gatherer societies learned by observing each other and imitating what they saw. Then spoken languages started to form, adding a new element to knowledge sharing. People could pass on ideas through word of mouth instead of just observing. Then through the conception of writing tools, knowledge started to be transferred in manuscripts. At certain times throughout history, we see how technology and advancements within society changed how knowledge was shared. Today, we are on the cusp of another knowledge revolution.

In the high tech world we live in, our lives are constantly surrounded by computers, smartphones, and tablets. People are already developing even more advanced personal technologies such as smartwatches, smart glasses, virtual reality, and even emotional artificial intelligence systems. As technology continues to grow at an extraordinary rate, how will knowledge sharing be effected? This is the question that we as a global community are faced with.

One technology that has become increasingly popular due to the innovations within the video game industry is the use of virtual reality. What started as an idea for multimedia consumption is now becoming a new technology that could change the knowledge sharing landscape within organizations. Managers in the corporate sphere have often focused on human-to-human knowledge transfer. With the use of virtual reality technology, human-to-human knowledge transfer can now be enhanced. For this we can use the example of NASA, who have used virtual reality programs for years to train their astronauts in conducting missions. NASA often recreates the environment of space and uses virtual reality to help astronauts get acquainted with what they will encounter. This kind of simulation conditioning helps astronauts learn about the machines they will be working with on a daily basis and also the environment of space which differs greatly from the environment on earth. Virtual reality has allowed astronauts who have already completed real space missions to design unexpected environments that new astronauts may encounter. Through these simulations, the surprise factor they would face in space is eliminated making them better prepared to handle the vast unexplored landscape.

When virtual reality started to become more popular, organizations began to look into how virtual reality can assist in knowledge sharing. If one is to think of the possibilities associated with virtual reality, one will soon realize that its uses are immeasurable. Think of a professor, able to share a lecture to his students who have missed class. Think about how it would transform exchange programs between universities, especially for underprivileged students that have a desire to go abroad. Virtual reality allows people to experience something completely new without even having to leave their living room. It is a much more immersive experience than simply watching a video as virtual reality brings you completely into a new realm. Organizations can utilize this technology to train new associates without needing the pay for the manpower to train such people. Instead these new associates can be taught simply through a machine that has been programmed once before. This is the kind of radical impact virtual reality can have in the area of knowledge sharing.

Another technology that is becoming more and more utilized in the knowledge sharing environment is machine learning. Machine learning has actually been around for a long time, but it is not until recently that machines have developed the capacity to automatically apply complex mathematical calculations to big data over and over again. As computer systems advance, the speed at which they operate has accelerated machine learning to a degree that is even faster than human beings. So where do we see machine learning? Actually we interact with machine learning all the time. Every single time you do a search, a machine learns more about you. The more searches that are archived, an even larger machine can learn about a whole country. Did you ever realize that Netflix has a machine algorithm that can learn about your movie preferences? It can even develop a correlation of the movies you watch and compare it with a whole population. This is the power of machine learning. What we consider small bits of data, or a series of choices can lead to a discovery of trends that the human eye could never locate.

Organizations today realize the potential that lies within machine learning. Machines have a strong advantage over human beings in that they are far more capable to crunch large amounts of data at an extraordinary rate. With the development of certain algorithms, these machines can now learn from certain inputs and behaviors. The more data you have on a certain subject, the more fine-tuned the results can be. Machines are now even learning from the data they have received and developing new knowledge. Some machines are even able to produce recommendations for a company based on what it has learned about the company's consumers. Machines today can learn so much about us just from small bits of data or choices that we make. They can sense patterns in our behavior and even adapt accordingly to meet our needs. As this technology continues to advance, researchers believe that true artificial intelligence systems will finally be able to be created. Ones that not only know about human beings, but ones that can even behave like one.

In the world we live in, knowledge sharing is once again about to take a huge step forward. Knowledge that was once shared only between human beings can now be mimicked by machines who do not have any kind of emotional bias. As digital innovations and advanced technologies become much more commonplace, knowledge sharing techniques will also need to adapt. Today information is moving across continents at very high volumes and at very high rates. To keep up with the amount of information that needs to be processed, we need to have the capabilities to handle it. Companies understand the necessity of technology in processing information. As this information is processed, we will inevitably be able to create real knowledge from this data. Machines are becoming more advanced to the point that they can even make decisions based on the data that is processed. As continue in this direction, we as human beings need to learn how to work alongside these machines to increase the amount of knowledge sharing that is being done. Knowledge is the unique key to shaping our future. Based on how we learn along with the technology around us will ultimately determine how we will grow as a society.