# Week 07 Lecture:
# Disruptive Technologies of the Future:
# Making the World a New Place

***"History reveals the power of certain technological innovations to transform the mental life of an era–the feelings, sensibilities, perceptions, expectations, assumptions, and above all, possibilities that define a community. From the social influence of the medieval castle, to the coming of the printed book, to the social and physical upheaval associated with the rise of the automobile–each specific example serves to drive home a similar message. An important technological innovation is not usefully thought of as a unitary cause eliciting a series of discrete effects. Instead, it can be seen as an alteration of the material horizon of our world, with transformative implications for both the contours and the interior texture of our lives. Technology makes the world a new place…"***

Shoshana Zuboff "In the Age of the Smart Machine: The Future of Work and Power" pg 388 (1988)

Over the past two weeks we have looked at technological disruption through the lens of industries and how they will be impacted. In our lesson from Weeks 5 and 6 you were asked to consider these types of questions as you applied your readings to examining disruption:

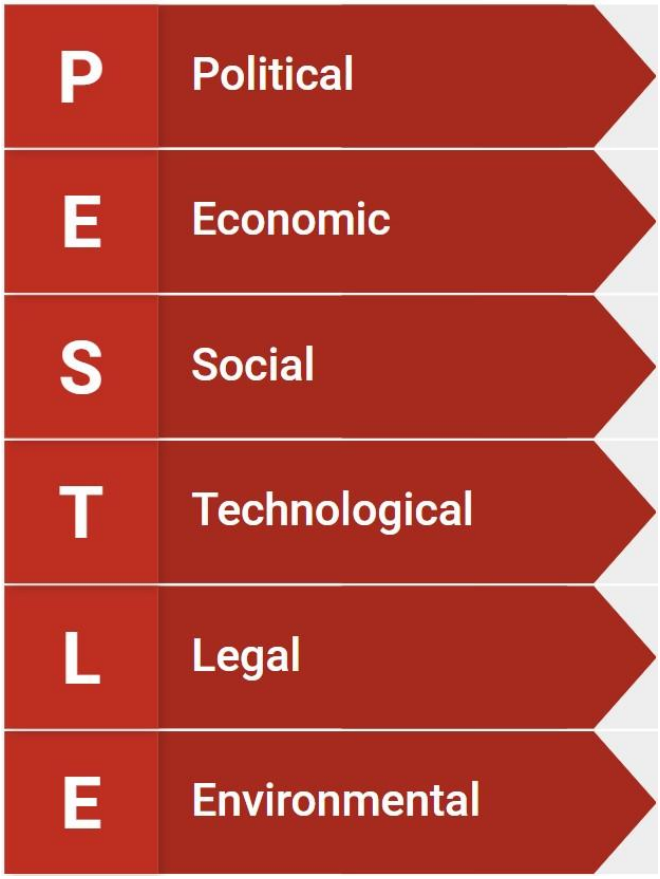
- What would it look like if…
- How might [technology/innovation] change the way we…
- If [practice] went away tomorrow, how might that impact…
- If [technology/innovation] becomes mainstream how might that change…
- How long might it take for [technology/innovation] to become mainstream?
- What will it take for [technology/innovation] to become mainstream?

We also took a look at "scenarios" of the future.

This week we examine more closely the societal impacts of technologies as we take the long view … into the future. Our future. A future where technology makes the world a new place.

**PESTLE as a Framework for Analysis**

PESTLE is an acronym for the six factors that shape an industry or company's external environment:




The PESTLE framework is a tool for analyzing the external environment—both macro- and micro-environments—in which a company operates. It provides a systematic approach to identify the key issues facing companies in different industries.

The political environment includes the political stability of a country and its government policies. The economic environment includes factors such as inflation rates and unemployment rates. The social environment includes factors such as education levels and crime rates. The technological environment includes the level of internet access in a country and the amount of people using mobile devices to connect to the internet. The legal environment includes regulations on trade and environmental regulations. Finally, the environmental environment includes meteorological conditions that affect trade routes or natural disasters that affect supply chains.

The six factors are not equally weighted; some may be more important than others depending on the industry and business model of a given company. For example, in industries with high levels of regulation (e.g., banking), political risk may be very important while in other industries such as retailing it may not be as important.

**Let's look at AI through PESTLE:**

- **Political - What are the political implications of AI?** The political implications for AI are not yet fully understood. There is a lot of discussion about the potential risks, such as job losses and bias. However, there are also opportunities that come with it. For example, AI can be used to improve democracy by making voting more accessible and helping people to vote more effectively. The use of AI in policing could lead to discrimination. Another is that the use of AI could lead to a loss of privacy, where people have less control over who can access their data and what they can do with it.

- **Economic - How will it affect economies and jobs?** A study by PwC predicts that AI will lead to a net loss of more than 7 million jobs in the next 12 years. However, it also predicts that those losses will be offset by an increase in new jobs created. AI is not going to replace humans entirely but instead take over tasks that are repetitive and uninteresting for humans. This means that people will need to learn how to work alongside AI, which can be seen as a challenge because it's something we've never done before. The question is not whether AI will change our economies and jobs, but how it will do so.

- **Social - What are the social implications of AI?** The social implications of AI are not as straightforward as one might think. It is not just about robots taking over the world, it is about how AI will change the way we live and work. Some people believe that AI will make our lives easier. For example, some people predict that self-driving cars will reduce traffic accidents by 90%. Others say that they will have less work to do because machines can do it for them. But there are also those who worry that AI will take away jobs like driving or working in manufacturing. The social implications of AI are not just about the technology itself, but also about how society adapts to it. The rise of AI will also affect our personal lives, with everything from dating apps like Tinder using algorithms for matching people, to robot pets becoming more common in households around the world.

- **Technological - What are the effects on technological progress and innovation?** AI has a huge potential to advance technological progress and innovation in many fields. AI can be used to generate ideas for new inventions or innovations. It can also be used to create new products that are more personalized and better fit customer needs. Furthermore, AI can be used to optimize company processes by performing tasks that humans would otherwise have done manually. AI is an important tool that has aided in the development of numerous technologies such as self-driving cars and medical devices. It has also helped increase efficiency in various industries such as manufacturing and healthcare.

- **Legal - How will it affect our legal system, privacy, and intellectual property rights?** The legal system is one of the areas that has been most affected by AI. The use of machine learning in the legal system has led to a new way of thinking about law. AI is not just used for research purposes, but it is also used to help assess and predict court decisions. This technology can help with things like bail and sentencing, as well as predicting which cases are more likely to be appealed .AI systems may be able to predict which data will be valuable in the future, which might lead to a change in how companies approach their intellectual property rights. AI is being used in the legal

system with chatbots, like DoNotPay, which can help people deal with parking tickets and other legal matters. The legal system is also using AI in order to predict crimes before they happen and even to predict who will commit crimes in the future. This is all done through data mining of social media posts and other online information. One key question is whether we should regulate AI or not and if so, how?

- **Environmental - What are the environmental implications of AI?** The environmental implications of AI are not yet fully understood. The most common concern is that AI will be a great power consumer. As it becomes more prevalent in our lives, the demand for electricity will increase and this will have an adverse effect on the environment. And yet, AI may also be able to help us find solutions for the problems that are affecting our planet. It is already being used for projects like collecting data on animal populations and tracking deforestation. For example, AI can be used to track illegal fishing, which is a major problem in the world. AI will also be able to help us with other environmental issues like climate change and water scarcity. For example, AI can help us predict floods by analyzing data from satellites and sensors. It can also analyze the water quality of lakes and rivers to provide early warning systems for contamination.

**Pause and Reflect:** You just read a "lesson" on PESTLE (except for the visual) that was constructed, curated and generated by rytr.me. While there were a few minor edits, the majority of the content here was pulled together through the interface of the rytr.me generator. How do you feel about that? Does this make you question the information in the lesson? Do you trust it less OR do you trust it more? Would you have even noticed if you weren't told? Here's a link to the document that was created.

Artificial Intelligence is but one disruptive technology that we have explored throughout our course. While the lesson above is valid, and highlights the many possibilities that we are facing now and into the future with AI, it brings with it a sense of deep questioning. The implications for education, assessment of learning, the sources we use to learn from, the validity of the content we read all come into question with this type of AI. It raises important questions about copyright and intellectual property. It may raise even more questions for you as you reflect on our lesson this week.

**A vision of the future…from the past.**

Back in 2004 (where were you in 2004?) Robin Sloan and Matt Thompson of the Museum of Media History created and published a short movie called Epic2014. It is a fictional look at the future of journalism, grounded in the realities of 2004.

Take a few minutes to watch the short film and consider carefully how this "future look" holds up now that we are in 2022.

Epic 2014 : Robin Sloan - Museum of Media History

Learn more about the individuals who put this together at the Museum of Media History page on Epic2014

Why ask you to watch this short film? As we come to the last weeks of our course together, and we think about the future implications of technological innovations that we might not even know about today, this short film is an excellent example of using scenarios to think about the impact of technology on individuals, communities, industries, and society.