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Dear Client,

Humans are unique in our ability to continuously upgrade our collective quality of life. Chimpanzees use rocks to crack nuts, beavers chew down trees to flood streams, and octopuses carry coconut shells as mobile homes. But they are one trick ponies repeating the same action for millennia while humans are on an exponential journey of technological advancement.

Technology is defined as **the application of scientific knowledge for practical purposes**. Advancements comes from understanding the world and conceiving ways to improve it which establishes a new frontier of understanding, snowballing into a repeating process of knowledge and discovery. Today's high tech – iPhones, the cloud, space travel – stands on the shoulders of giants: farming, printing press, steam engines, electricity, antibiotics, airplanes, computers, the internet, etc. **And the pace of change is only accelerating.**

Advancements in automation and artificial intelligence (AI) have emerged as powerful forces with the potential to reshape our society, revolutionize industries, improve efficiency, and enhance our quality of life. However, they also raise concerns about job displacement, ethical implications, and the need for thoughtful regulation. **The confluence of automation and AI is kicking off a new innovation cycle with enormous long term implications.**

Automation is the use of software and robotics to perform processes traditionally performed by humans including manufacturing, logistics, customer service, and data analysis. **Automation is meant to augment or replace human action.** AI is the development of computer systems to perform tasks that typically require human intelligence. AI enables machines to analyze data, recognize patterns, make predictions, understand human language, and interact with their environment. **AI is meant to augment or replace human thought.**

AI plays a significant role in automation by providing the intelligence and decision-making capabilities necessary for automated systems. **AI algorithms can be employed to enable systems to adapt to changes in the environment, learn from experience, and make adjustments to their actions.** Some practical applications include:

- In industrial automation (factories), robots can be programmed to perform specific tasks in a manufacturing process. Machine learning algorithms can analyze sensor data and optimize the robot's performance, making it more efficient and effective.
- Customer service departments employ AI-powered chatbots and are perfecting interactive voice responses. These systems utilize natural language processing and machine learning algorithms to understand customer inquiries and provide appropriate responses and get better with every conversation. Eventually they will be indistinguishable from a real person (and likely more pleasant!).
- In healthcare AI algorithms can analyze vast amounts of medical data, leading to faster and more accurate diagnoses, personalized treatment plans, and better patient outcomes. Robotic surgery and

AI-assisted procedures are reported to enhance precision, minimize invasiveness, and reduce recovery times.

- Self-driving vehicles could enhance road safety, reduce congestion, and optimize fuel consumption. AI-powered traffic management systems can analyze real-time data to optimize traffic flow, reduce commuting times, and improve air quality in cities.

McKinsey predicts that 45% of tasks could be automated with existing technology, great for profit margins but detrimental to employment and social stability. Modern day Luddites will doubtless seek protections - look no further than the striking Screen Writers Guild demanding a ban on AI in Hollywood. We may eventually need expanded social safety nets for displaced workers who are unable to keep up. **Longer term, new technologies have a track record of sprouting new industries, replacing far more jobs than lost.**

Investing trends come in and out of fashion and it can be difficult to distinguish what is real and will power the future, and what is hype and will eventually fade. **The long term potential for automation is clear and adoption is growing.** You are invested in an industrial automation company that makes robotics and software for next generation factories and a software company that recognizes, replicates and improves mundane back office processes.

AI is a nascent technology and thus more prone to hype. **We feel the same way about it as we do about the internet in the 90s; it was obviously a transformational power, but we couldn't possibly have imagined it would evolve into today's "digital everything" world.** A lot of once promising internet companies went bankrupt along the way, so rather than guessing how AI might evolve, we would rather invest in the infrastructure it relies on. You are invested in two cutting edge semiconductor companies whose technology provides the computational power for data heavy AI algorithms.

For better or worse, automation and AI are here to stay and will create winners and losers between companies and individuals able to harness its power and those unable to adapt. It is the opportunity and the challenge of the century both economically and socially. It is still early in the cycle of knowledge and discovery but it should move quickly as this time the machines are in charge. We can't wait to see what the future looks like.

Sincerely,



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