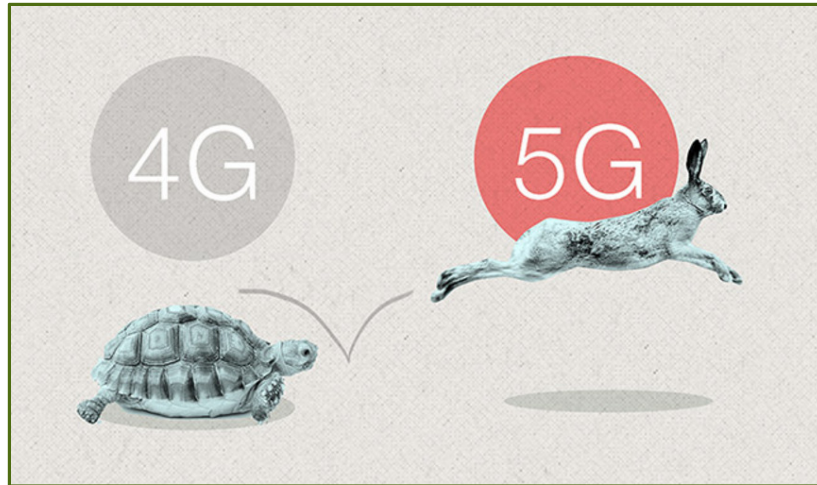


## *Investment Opportunities Associated with the Future of 5G*



*December 8, 2016*

*“Players across the global telecom ecosystem are aligning strategies to capitalise on what could emerge as a quantum leap in service quality and bandwidth support provided by fifth generation wireless systems — 5G.” - Barclays*

As a Registered Investment Advisor, it is vital for our firm to keep up with the ever-evolving landscape of technology. One of the biggest changes we expect to see over the course of the next three to five years is a transition from a 4G network to a 5G network. By 2020, we can expect to see mobile data speeds grow from one gigabyte per second to ten gigabytes per second, which will significantly change how we interact with any wireless-enabled devices.

### ***Low Latency, High Capacity***

All wireless networks, from 1G to 4G, operate on radio frequencies. Each time we upgrade to a new generation, we go to a higher radio frequency. This allows data to move at a significantly higher rate as it allows individual users to carry more (data) traffic; however, it does not allow the data to travel as far. The solution to this will be the addition of signal boosters (input and output antennas), which can carry the data farther. This means that not only will our data move faster than we imagined possible, but there will be less of a lag while downloading data. For example, while watching last night’s broadcast of the New York Rangers hockey game on my

iPhone 7, there were frequent delays. Once we transition to a 5G network this problem will no longer exist.

### ***New Opportunities***

According to Cisco, there is an anticipated boom of 50 billion connected devices by 2020, up from 15 billion connected devices today. The expected growth also means there will be an 827% increase in mobile data traffic over the next five years (source: Cisco). The current 4G network would make it very difficult to maintain our current speeds, much less improve them.

A 5G network will migrate to the clouds, which means faster speeds, greater bandwidth capacity and dynamically managed data traffic. Using cloud based software opposed to costly equipment also allows for improved utilization, better traffic management, lower operating costs, lower data delivery cost and new revenue opportunities (source: Barclays).

Barclays recently shared a chart highlighting alternative opportunities that we can expect to see as 5G becomes more of a global reality (below):



## Looking to the Future

We are constantly looking forward for new opportunities for our client portfolios. Innovation technology is a sector that requires much research but may provide some nice returns as the industry grows and improves.

Our core holdings, which are either directly or indirectly positioned to benefit from the migration to 5G, include:

- Lumentum (LITE)
- Cisco (CSCO)
- Verizon (VZ)
- ABB Ltd. (ABB)
- Semiconductor Industry ETF Trust (SMH)
- SkyWorks Solutions (SWKS)

As always, we thank you for your business and your interest in our firm. Please feel free to call us if you have any questions related to this article or in general.



Andrew D.W. Hill, CFA  
President and Co-Founder  
239-777-3188  
Andy@ResponsibleAdvisors.com



Jennifer Figurelli, CTFA  
Managing Director and Co-Founder  
239-777-3129  
Fig@ResponsibleAdvisors.com

### **Disclosures**

*Information sources used to prepare this report include Argus Research, Value Line Investment Survey, Zacks, Barron's, Kiplinger's, Fidelity, and Decision Economics. Founded in 2010, Andrew Hill Investment Advisors, Inc. is registered as an investment advisor and only transacts business in states where it is properly registered, or is excluded or exempted from registration requirements. Andrew Hill and clients of AHIA hold positions in the investments mentioned in this report. Please contact Andrew Hill Investment Advisors, Inc. if there are any changes in your financial situation or investment objectives, or if you wish to impose, add or modify any reasonable restrictions to the management of your account. Our current disclosure statement is set forth in Form ADV, Part 2 and is available for your review upon request. Tax and estate planning advice is general in nature and the firm is not engaged in the practice of law*