

# Estimating the Speed of Exponential Technological Advancement

in

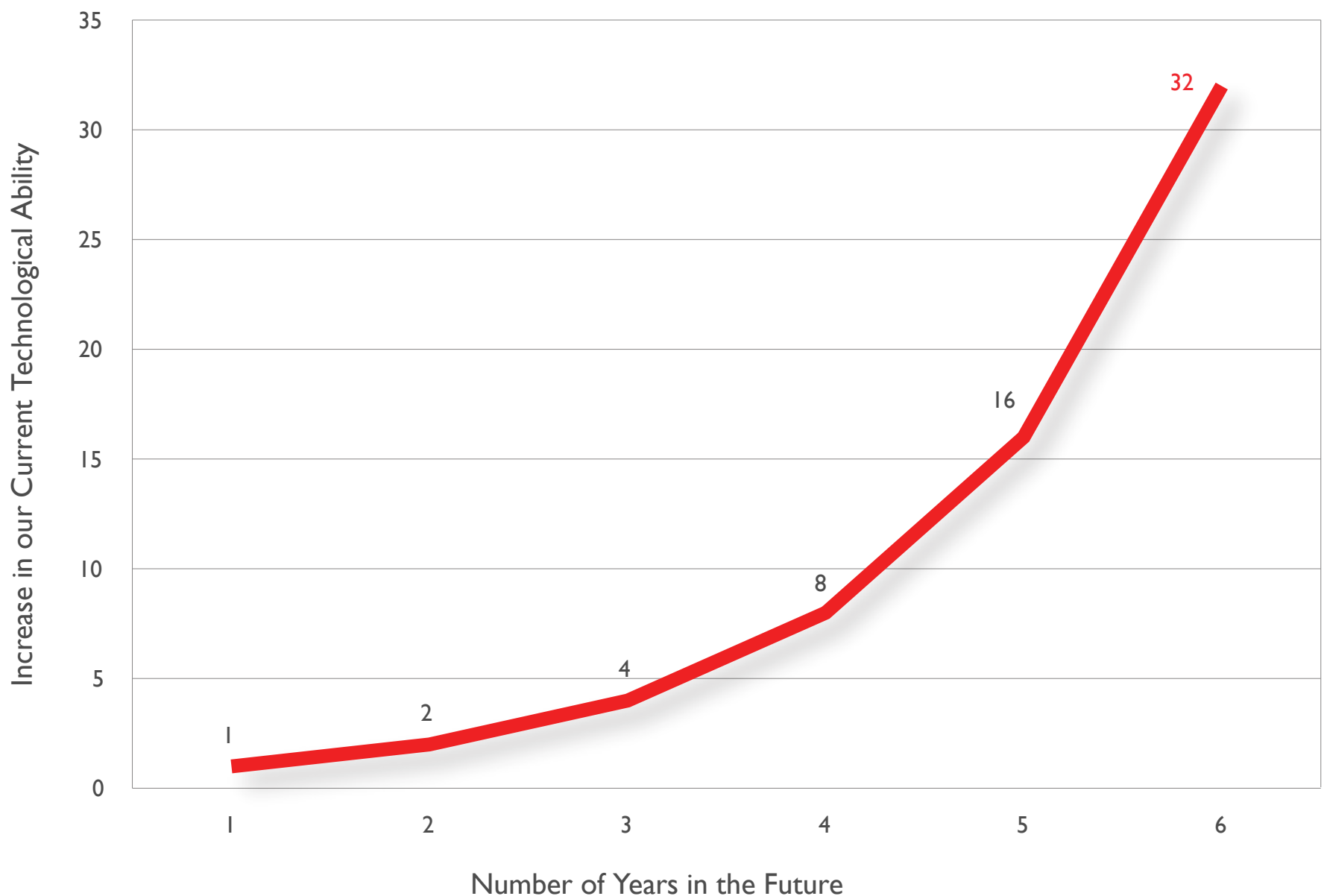
Five Years  
Ten Years  
Twenty Years  
Thirty Years  
Forty Years  
Fifty Years

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# Human Intuitive Perspective of Technological Advancement in Five Years

Thirty Two Times More Advanced



Every twelve to eighteen months, computers double their capabilities, and so do the information technologies that use them.

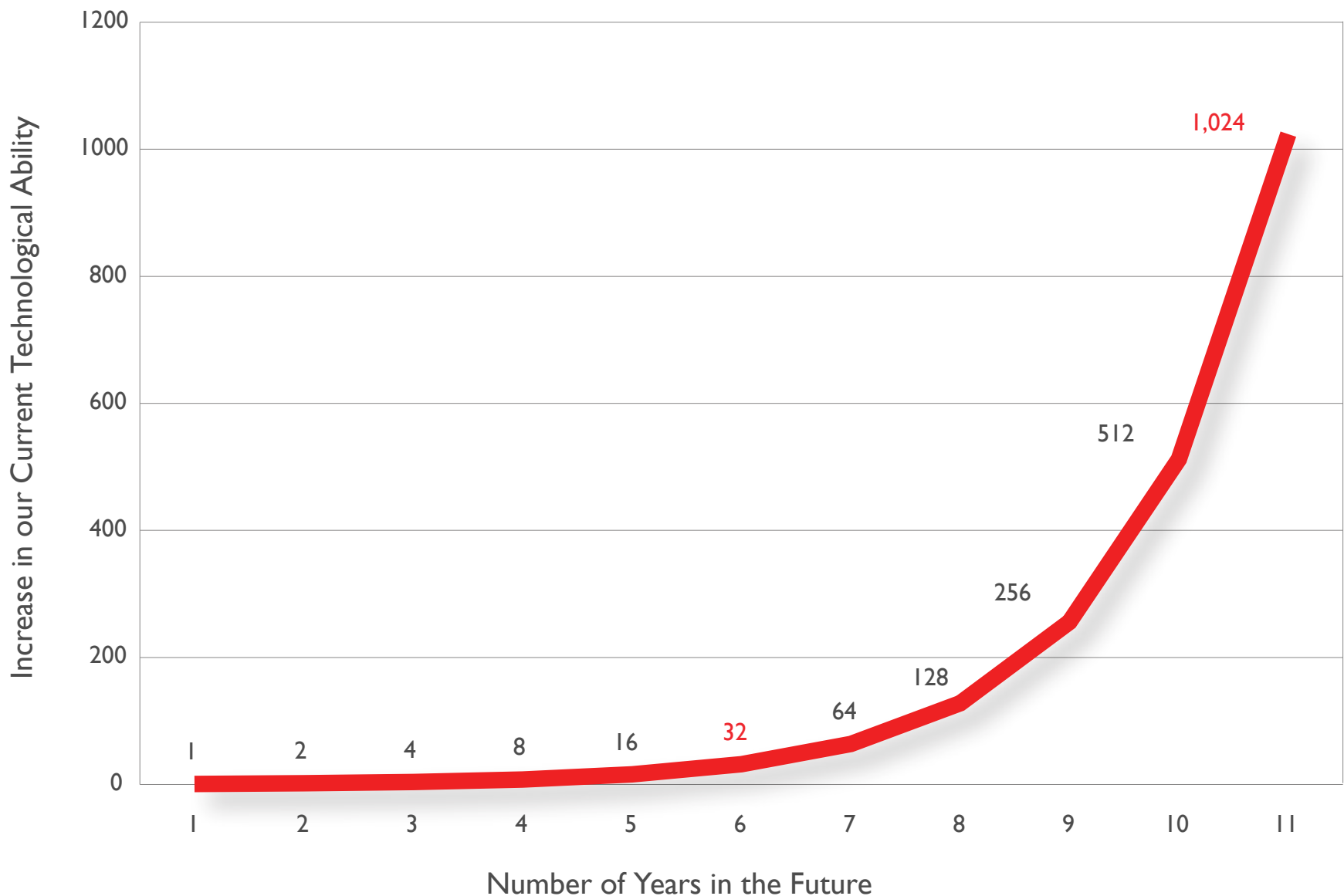
Governments and the largest companies in the world use Ray Kurzweil's historical trends of exponential growth charts for predicting the future.

The chart above shows the improvement level that our technology will have during the next five years. Notice that we can clearly distinguish and reasonably intuit these eight, sixteen, and thirty-two times improved technologies, predicting the next five years.

But what happens to your five year intuitive perspective when you look at the ten year perspective on the next chart?

# Human Intuitive Perspective of Technological Advancement in Ten Years

A Thousand Times More Advanced



Notice how the previous chart clearly showed a marked difference each year. Yet, when compared to the ten year span of exponential growth, that "great thirty-two times advancement in technology" is just a measly three percent gain.

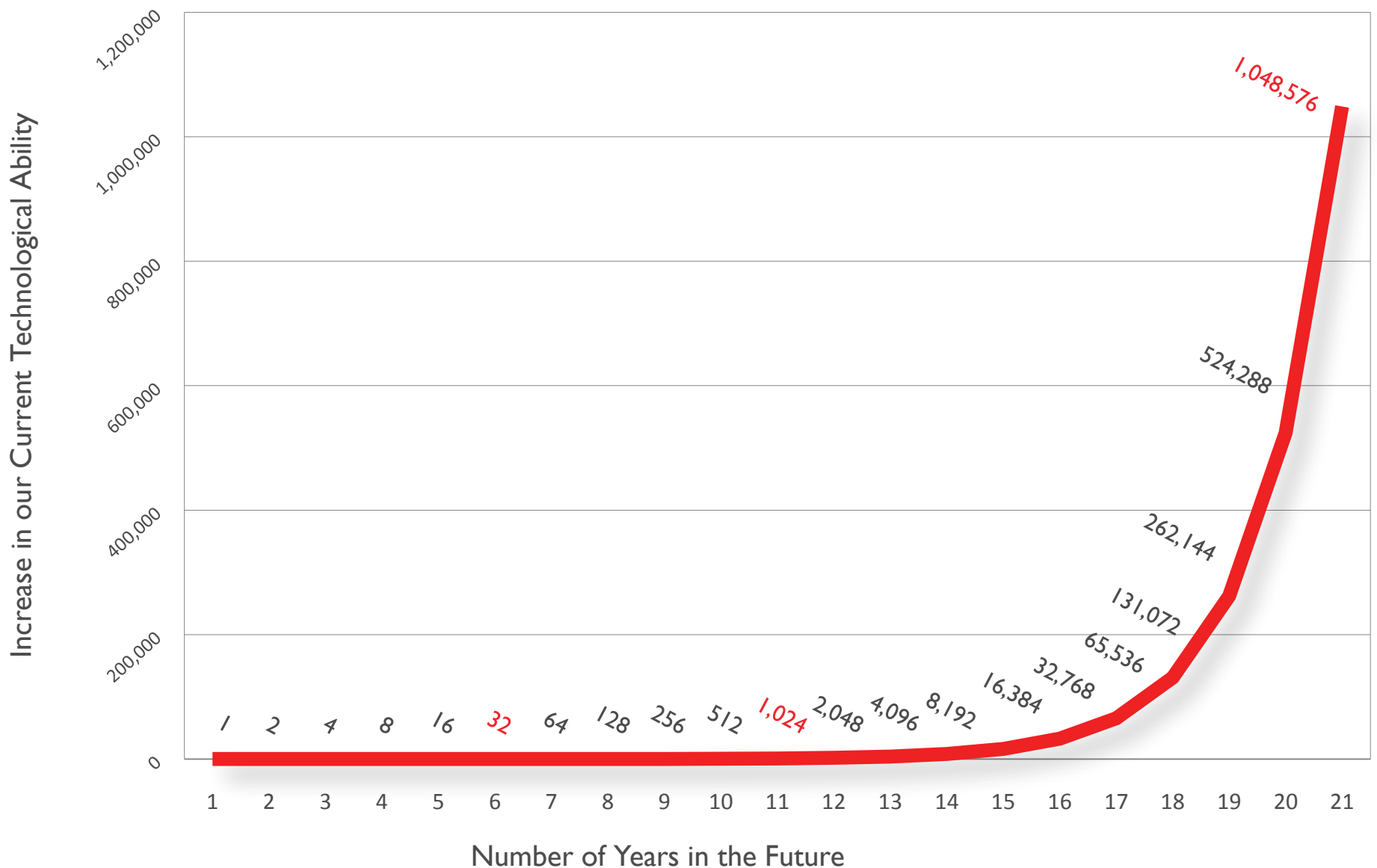
So just how good is your ability to predict the changes that will occur when our capabilities become increased hundreds of times more each year?

Currently our computing power and sensor capabilities are starting to quantify cellular and molecular structures easily and cheaply, and our tools are able to manipulate molecules. Today small companies are creating the paradigm changes that were the domain of large corporations, universities, and government agencies. Now boost it 1,000 times.

The twelve to eighteen month doubling rate known as "The Law of Accelerating Returns" is getting faster.

# Human Intuitive Perspective of Technological Advancement in Twenty Years

A Million Times More Advanced



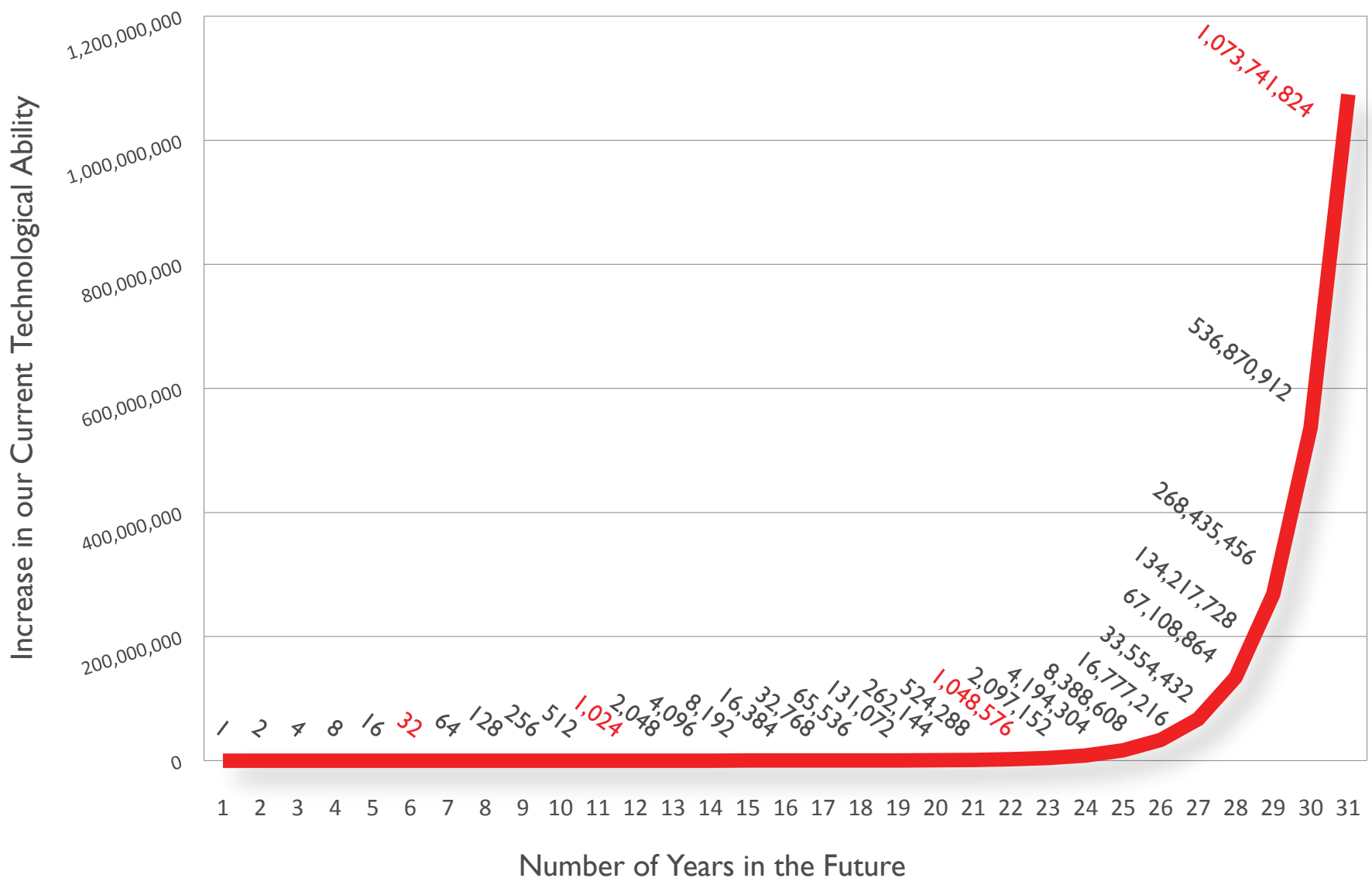
Eighteen to twenty years out, technological advancements will be hundreds of thousands to a million times more advanced. That makes our first fourteen years of exponential growth seem flat lined (no progress), when in fact, it will be 4,000 times more advanced then today.

We currently have regenerative medicine in clinical trials and consumer wireless computer brain interfaces for \$300. If we can do this today, what will it be like in twenty years, when technology is a million times better?

Three dimensional processors and memory drives along with biological, photon, and quantum computing will keep the rate of information improvement at an exponential pace.

# Human Intuitive Perspective of Technological Advancement in Thirty Years

A Billion Times More Advanced



This is the time period that "The Singularity" is supposed to occur. This means that bio, nano, robotic and computer technology will become so rapid, so advanced, and so profound that today's limited understanding does not allow us to describe, within reason, what life will be like. In the early 2040's, the rapid pace of improved changes will be hundreds of millions of times faster than today as each year passes.

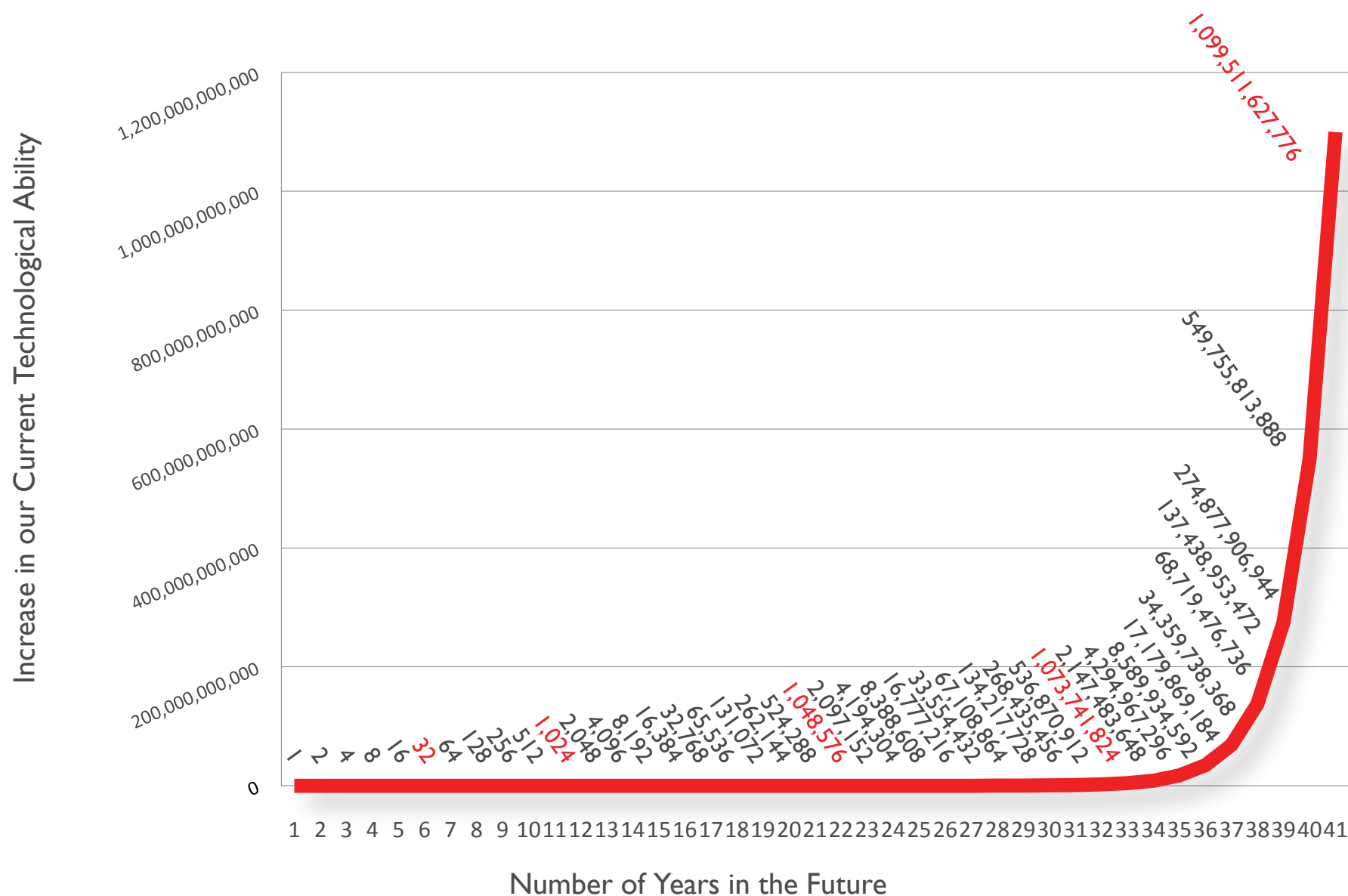
The only way humans will be able to keep up or even know about these changes will be with virtual assistants and computers inside us, and around us.

Evolution will bring about artificial general intelligence (AGI). AGI will come in the form of intelligent machines that have the ability to create and improve its own software and hardware, and evolve according to its own interests (if interests still exist).

Without the fear of death, poverty, boredom, disease, pain, or even maintenance, preoccupation with self-interests may diminish or even dissolve. "Living" may become a spontaneous series of events.

# Human Intuitive Perspective of Technological Advancement in Forty Years

A Trillion Times More Advanced

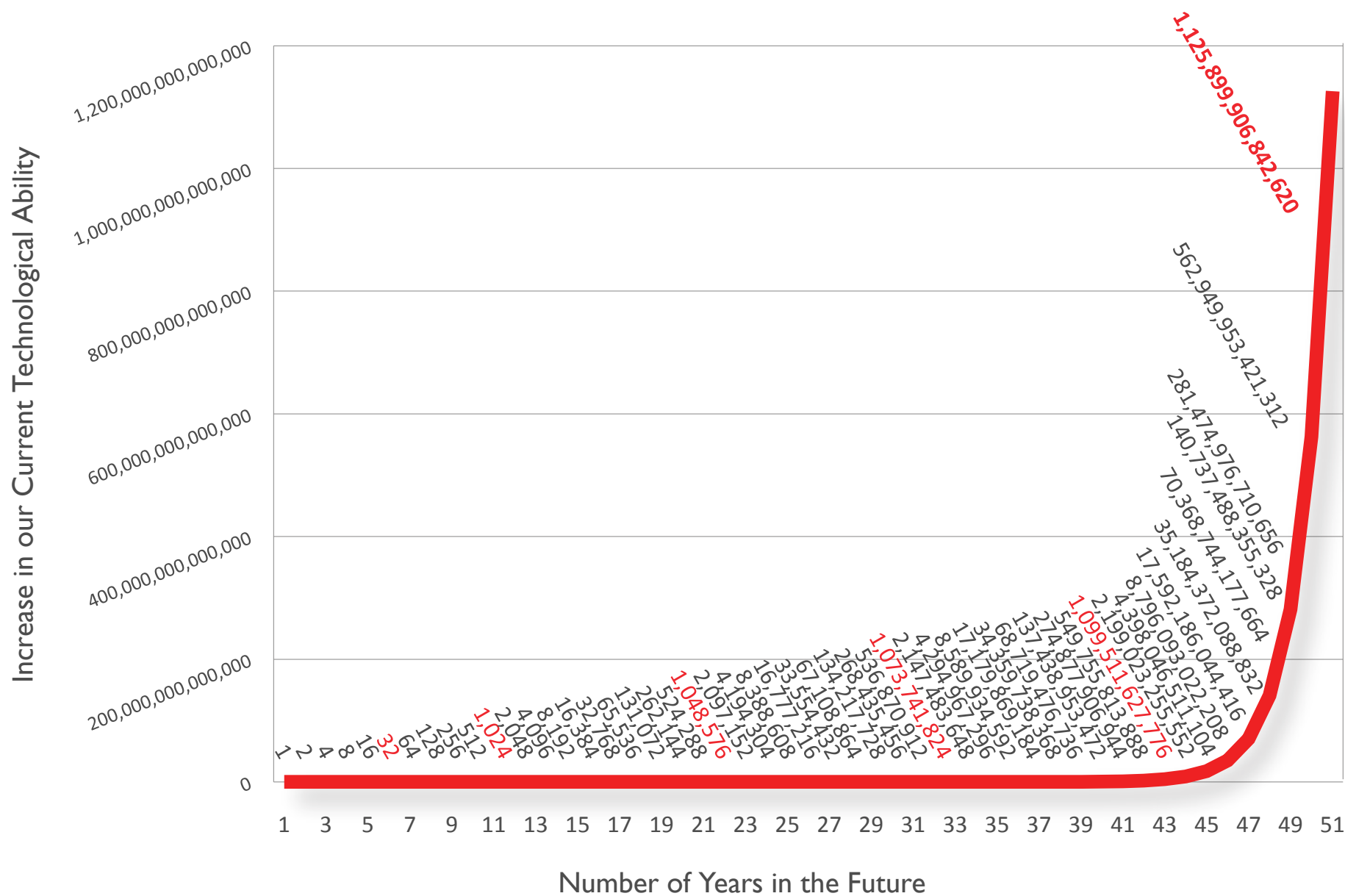


Forty years out, with technology a trillion times more advanced than today, we will be so far away from our current knowledge base that it is pure guess work as to what will be going on.

Paradigm after paradigm, the development of an interactive environment, quantum tech, and radical life extension, will advance minute by minute. Accelerating intelligence, genetic engineering, nanobots, and computer brain technology will bring about human, animal, and machine communication.

# Human Intuitive Perspective of Technological Advancement in Fifty Years

A Quadrillion Times More Advanced



Fifty years out, the technology that is a quadrillion times more advanced than today will give us the ability to perceive a quadrillion. There will be an explosion of highly intelligent biological, non-biological, micro, nano, virtual, mixed, and morphing life forms colonizing the solar system and beyond. Life spans will develop into life continuums.

These charts show us that today “The Emerging Future is Twice as Good”, and immediately cascades into exponential rates of technological advancement, giving us the most incredibly smart and creative future that is beyond our wildest dreams.