

## Technology is Advancing Rapidly – Why Is This So and What Lies Ahead?

When people are children, things appear to be how they always have been. It is only when someone gets older that they start to realize that things are changing and changing more and more rapidly. Schools talk about inventors and inventions, but progress seems like a far away land that does not truly come to life until it is seen firsthand. When science fiction starts to turn into reality, do you wonder what else lies ahead and how soon it will happen? More importantly, what will prove important and how can greater personal benefits be realized? Here are a few fundamental thoughts.

We are told to look to the past to predict the future. Okay. So, why then did cave men start using fire a million years ago and we were still using horses, had no personal computers, airplanes, automobiles, cell phones, radio, telephones, television, air conditioning, refrigeration, satellites, space travel, artificial body parts, nuclear energy, even electric power, until a few short years ago?

Looking at any of these innovations, it is hard to fathom how they could have progressed so rapidly once they were conceived. For example, the Wright brothers first flew at Kitty Hawk in 1903. They could barely get off the ground for a few seconds. Later, simple planes became novelties that delivered the mail and were used in World War I to drop crude bombs by hand. Fifty years after the first flight, paying passengers began to endorse air travel, but along with it came concern and trepidation that their flights would not make it safety to their destinations. Metal failure was a constant issue with engines and wings falling off bringing total loss of life. Even into the 1970s, this meant visiting a machine to take out an insurance policy and then mailing it to a loved one before stepping onto a plane. Since then, we have seen jets, supersonic and hypersonic aircraft, for military and some commercial use. More importantly, "fatalities per million miles traveled" has dropped below that for automobiles, and air travel has become affordable for virtually everyone.

It is obvious that progress in the second fifty years has been considerably greater than that in the first fifty years. Without going into greater detail, this does not simply apply to air travel. It applies to countless other innovations. Why is this so? Is there one reason or multiple contributing factors?

**Could aliens really have landed** in Roswell, New Mexico in 1947? Have they been coaching us ever since to improve our technology? This seems highly unlikely, although there are many mysteries about the origins of technology. For example, how can we explain the fact that the ancient Egyptians built better pyramids than we are able to recreate today? With such exceptions, I believe that advances in communications have facilitated sharing of ideas and collaboration about applications. The more ideas, the faster they are shared, the greater the progress. Now, computers are further accelerating progress by assuming more and more of the load of development efforts and facilitating communications.

The process keeps gaining momentum as the infrastructure becomes more and more complex, but the complexity is managed by machines. Even electro-mechanical switching devices and office calculators were much better than doing everything by hand. Then, along came smaller, faster and cheaper electronics. Today, people connect their own calls and there are no more manual switchboards and telephone operators. Machines, along with smart phones, mask behind the scenes complexity, assisting us to do the things that need to be done.

Better and better computers are leveraging the capabilities of individuals in many ways. Together, humans and machines are making faster and faster progress. For the first time, human intelligence is being augmented by more than its own evolution and manual efforts. This means that computers are now able to leverage human progress beyond simply improving human to human communications. Computers are networking with each other to bring synergy and extend their own capabilities. They help us to do this better and faster and to bring more and more ideas into the mix. It is

not simply better, more sophisticated airplanes incorporating better subsystems; it is an increasing array of external systems equipped with such things as weather and navigation satellites and complex forecasting models that extend the airplane's capabilities with greater efficiency and safety.

Satisfying needs begins with ideas and imagination. Who is willing to accept things the way they are when they can be better? When there is no solution, isn't it commonly believed that there will be a solution when the need is recognized by enough people who believe in it and are willing to work together to create one. Hence, Manhattan projects, Moon Landings, think tanks, Skunk Works and the like.

**Sharing ideas and collaborating on solutions is getting more and more efficient.** First, there is the Internet. Essentially, this provides the revolutionary vehicle that supports a growing variety of innovative tools to support mass interaction, research, collaboration and a growing list of others. Anyone can see live demonstrations and have virtual visits with children, relatives and colleagues that cannot be visited as regularly as we would like.

Messages come alive visually and reach millions. Communications can be shifted from one-to-one to one-to-many and reach any audience, person or group. This dramatically increases our ability, and efficiency, to communicate ideas, solutions and opportunities. Tools are far from being limited to marketing and sales. On demand features allow us to archive any message for viewing over and over again at any time day and night. This is another example of creative ways that leverage ideas and reach more people who can help to implement them.

**Technology is exploding.** This paper has merely touched the surface. Our message is to think out of the box. Consider that nothing is impossible. Make you needs known to the vast audience that is at your fingertips. There is an army of people like us who are out there to help.

To learn how we can help you, please contact us.
Outcome Improvement
973-635-1970
Info@OutcomeImprovement.com
www.OutcomeImprovement.com

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