

Governing Energy

Self-Decision

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According to the marketing pitches, by 2018 we will all be riding in self-driving automobiles—certainly by 2021 at the latest.ⁱ This is all wonderful, especially for us Baby Boomers.

Between Machine Learning, and Self-Driving machines we will either be completely replaced or our life much easier and safer. We are told that someone will still need to sit in the driver's seat, but what if over time we forget how to drive? Especially in an emergency, this could lead to disaster.

In 2010, Qantas Flight 32 from Singapore to Sydney, Australia experienced an engine explosion shortly after takeoff.ⁱⁱ Many readers may know that the Airbus A380 is a very sophisticated and highly automated commercial aircraft.

Aviation is full of success stories (business cases) where the flight crew is able to overcome substantial odds, confusing information (both the human and computer kind) and safely land the aircraft. A recent example of that was depicted in Sully, the movie. According to this rendition, the experience of the Captain and his ability to hold conflicting data in his head and make the right decision in just over 200 seconds averted a possible catastrophe in the New York metropolitan area.ⁱⁱⁱ

In the case of Qantas Flight 32, the crew dealt with volumes of conflicting data from damaged or missing sensors. Massive technology failures from the exploded engine required the crew to make many correct decisions from a “quarter million sensors and computers that sometimes can't tell the difference between garbage and good sense.” They were able to manage turning and landing with “only the smallest changes in thrust and the tiniest navigational adjustments.”^{iv}

There is one question we all will have in our emerging automated world. If the systems we have come to rely on fail, how will we respond? This answer to this question is at the core for a High Reliability Organization, whose five traits are:

- Sensitive to operations
- Reluctant to accept "simple" explanations for problems
- Have a preoccupation with failure
- Defer to expertise
- Are resilient^v

By piloting a self-driving car, we all are required to become High Reliability entities. Then at work, we extend this model to our Digital Firm.^{vi} Physical lives and organizational survival will depend on this capability.

Psychologists tell us that when we are facing a critical decision, often with information overload, having a preexisting Mental Model in place will make all the difference. Mental Models can be defined as, “psychological representations of real, hypothetical, or imaginary situations.”^{vii}

“What if” my automobile automatic braking is failing? “What if” a visual sensor fails, and so on and so forth.^{viii}

It appears that there is one skill we will all have to learn from our automobile learning permit days until we retire and let the golf cart control our golden years. The ability to develop and use “good” Mental Models will not become just part of our *job description*, it will be part of our *life description*.

Your technology might not be the best decision maker. Then again, it might! Each of us pilots must know when the right Self Decision is made by systems—every time!

How do you know if your firm’s technology is actually adding shareholder value?

About the Author

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End Notes

ⁱ <http://www.businessinsider.com/companies-making-driverless-cars-by-2020-2016-10/#bmw-will-introduce-its-self-driving-cars-in-china-in-2021-5>

ⁱⁱ <http://www.businessinsider.com/frightening-photos-from-the-report-on-the-qantas-a380-incident-show-exactly-what-happened-2013-7>

ⁱⁱⁱ <http://airfactsjournal.com/2016/09/sully-impossible-turn/>

^{iv} <http://lifehacker.com/the-power-of-mental-models-how-flight-32-avoided-disas-1765022753>

^v <http://www.beckershospitalreview.com/hospital-management-administration/5-traits-of-high-reliability-organizations-how-to-hardwire-each-in-your-organization.html>

^{vi} <http://blogs.wsj.com/cio/2016/10/18/digital-firms-are-changing-rules-of-management-analyst/>

^{vii} <http://mentalmodels.princeton.edu/about/what-are-mental-models/>

^{viii} <http://lifehacker.com/the-power-of-mental-models-how-flight-32-avoided-disas-1765022753>