

Technology Assessment and the Fear of Obsolescence

Presentation to TAG 2017

Thursday, July 27, 2017

Presented by:

Dr. Chris Alexander, P.E.

Today's Schedule (1/2)

7:00 to 8:00 AM	Breakfast and registration
8:00 to 8:10 AM	Welcoming remarks (Terry Lechinger)
8:10 to 8:40 AM	Role of Technology Assessment (Chris Alexander)
8:40 to 9:10 AM	Using Technology to Achieve Competitive Advantage (Chad Zamarin)
9:10 to 9:30 AM	Unplugged with TransCanada's Richard Kania
9:30 to 9:50 AM	Technology from an Innovator's Perspective (Larry Cercone)
9:50 to 10:10 AM	Innovative Technology Use for Small Business (Brady Brown)
10:10 to 10:40 AM	MORNING BREAK: Exhibitor & Booth Time
10:40 to 11:00 AM	Technology from a Regulator's Perspective (Joshua Arnold)
11:00 to 11:20 AM	Robotic Crawlers for Unpiggable Pipelines & Tanks (Steven Trevino)
11:20 to 11:50 AM	MORNING PANEL SESSION
11:50 to 1:00 PM	LUNCH BREAK: Role of Safety & Sustainability in Technology (Matt Boucher)

Today's Schedule (2/2)

1:00 to 1:20 PM	Advanced Technology in Internal Pipeline Isolation Plugs (Rush Selden)
1:20 to 1:40 PM	Recent Innovations in Guided Wave Technology (Steve Owens)
1:40 to 2:00 PM	The Role of R&D Tax Credits (Team from KPMG)
2:00 to 2:30 PM	AFTERNOON BREAK: Exhibitor & Booth Time
2:30 to 3:00 PM	Using Technology to Achieve Industry Readiness for Stakeholders (Chris Yoxall)
3:00 to 3:30 PM	AFTERNOON PANEL SESSION
3:30 to 3:45 PM	Wrap-up and closing comments (Chris Alexander)

Today's Discussion

- ▶ Why are we here?
- ▶ The Technology Innovator's Quandary
- ▶ The *Three Stage Technology Cycle*
- ▶ WAR STORIES
- ▶ There has to be a better way...
- ▶ Parting thoughts

Why are we here?

Technology Providers

Service Companies

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Operators /
Technology
Users

Regulatory
Agencies

Technology
Investors

The Technology Innovator's Quandary

- ▶ Let's face it, running a business is HARD!
- ▶ For technology companies, it's even more difficult
 - ▶ Smart people are hard to manage
 - ▶ Constant state of paranoia
- ▶ The rewards can be big, but so are the risks
- ▶ Bottom line - *be nice to the innovators because we all need them!*



Three Stage Technology Life Cycle

1. Meets minimum standards
2. Need for differentiation
3. Exceed client expectations

Very few companies ever get to Stage #3...

TECHNOLOGY WAR STORIES



The Pony Express



- ▶ The Pony Express started in April 1860
- ▶ Used horse and rider relay teams to shuttle mail along a 2,000-mile route between St. Joseph, Missouri, and Sacramento, California
- ▶ Involved 500 horses, 50 riders, and 190 relay stations
- ▶ Eventually folded in October 1861, having lost as much as \$200,000 (\$5.2 million today)
- ▶ Failed within days after the transcontinental telegraph reached Salt Lake City, Utah

Motorola's Iridium



- ▶ Global satellite phone company backed by Motorola
- ▶ Idea conceived in 1985 by a Motorola engineer
- ▶ Started with \$6 million in seed money plus \$150 million from industry partners
- ▶ To work properly, the system needed 66 satellites
- ▶ Each handheld unit cost \$3,000 and operation costs were \$3 per minute



Motorola's Iridium iridium® Everywhere

- ▶ Technology would not work in buildings, cars, or metropolitan areas (line of site required)
- ▶ In 1993 raised \$800 million in funding and in 1994 raised an additional \$734 million
- ▶ Only managed to get 10,000 of the 500,000 projected customers
- ▶ Technology never worked as planned and cell phone coverage was constantly improving
- ▶ System cost \$5 billion to build and Motorola defaulted on \$1.5 billion in debt

OUR WAR STORY

Common Threads

- ▶ The power of “Creative Destruction”
- ▶ From the onset both businesses were destined to fail (bad ideas)
- ▶ Innovators did not properly anticipate competing technology advances
- ▶ We all need a Devil’s Advocate, although we might not like them!
- ▶ Remember the mantra, “Hope for the best, but plan for the worst”

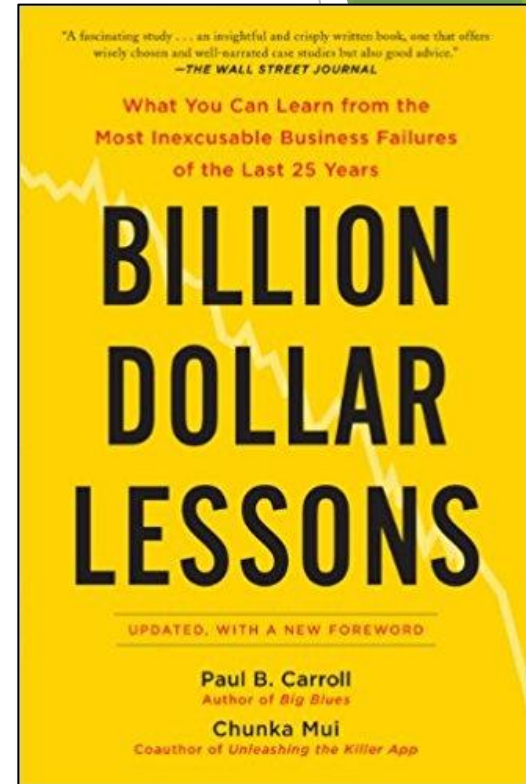
There has to be a better way for tech companies...



- ▶ The 4C Technology Implementation Process integrates the processes of:
 - ▶ Critique
 - ▶ Calibrate
 - ▶ Certify
 - ▶ Connect
- ▶ The goal is to get great products to market, but *reduce the time it takes*

Parting Thoughts

- ▶ Ideas are critically important to any venture
- ▶ Ideas are to a *business* what a *foundation* is to a *building*
- ▶ Recommend reading the book, *Billion Dollar Lessons*
- ▶ Finally, remember to be nice to the innovators...





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Thank You!