

Fail fast, often – Fail Forward

Innovation Model for Cyber Security Risk

TRY FAIL SUCCESS

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CEO - Secured IT Solutions



Who am I?

- CEO and Principal Consultant of Secured IT Solutions – A Cyber Security and IT support and service provider for public and private sector organizations
 - Some clients include the following: Switch; Long Beach, CA; Burbank, CA; U.S. Dept. of Energy; NNSA; U.S. Dept. of Defense; Clark County Water Reclamation District; Federal Communication Commission
- Certified SANS Instructor
- Experience
 - 20 years in IT
 - 15 years in Cyber Security
- Masters of Science in Management Information Systems
- Top industry certifications:
 - GLSC, GSEC, CISSP, GCIH, GPEN, GISF
 - QSA (lapse)

PAID

What do we think when we hear
this word?



Why does it have such a negative connotation?



Probably because this is
engrained in us as kids

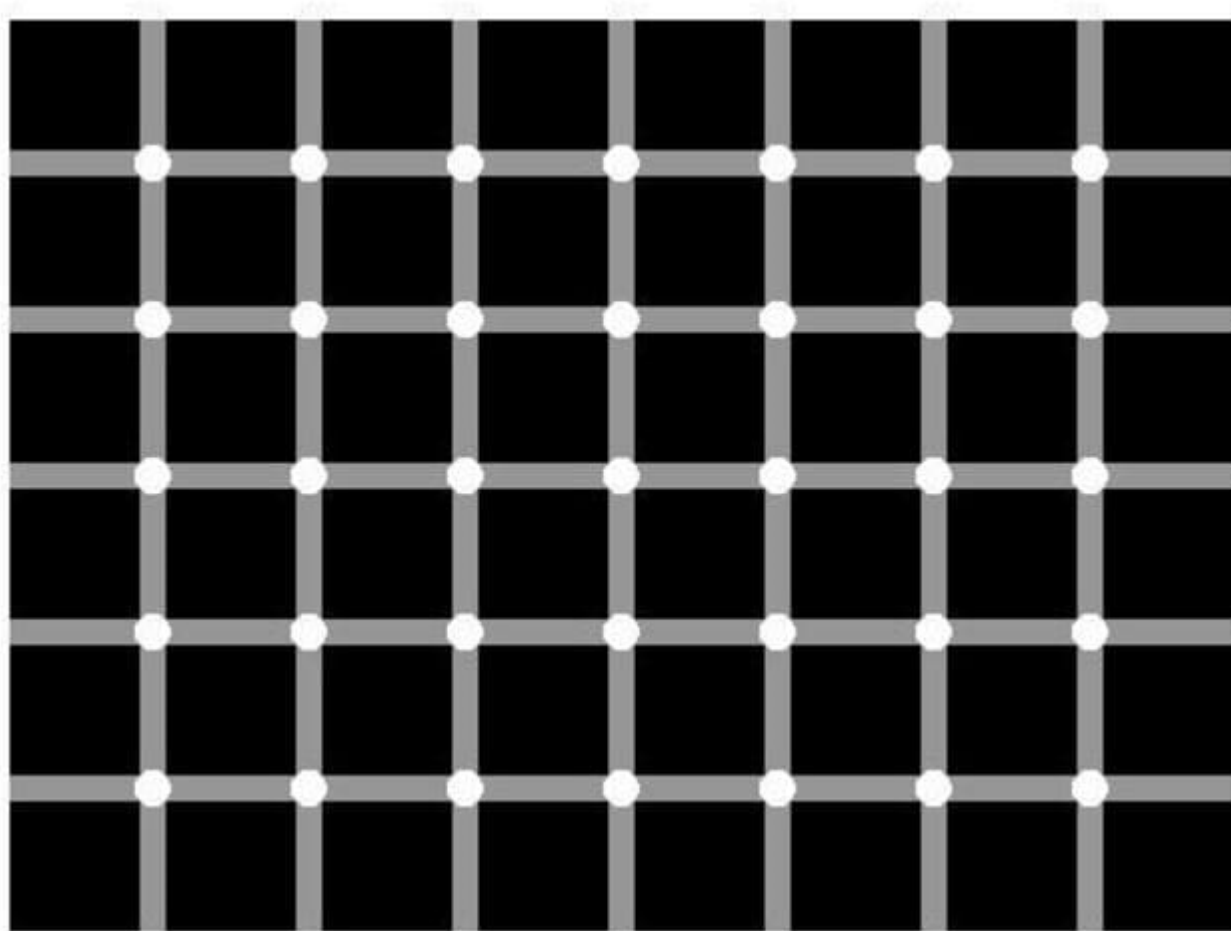


How many black dots do you count?

35?

15?

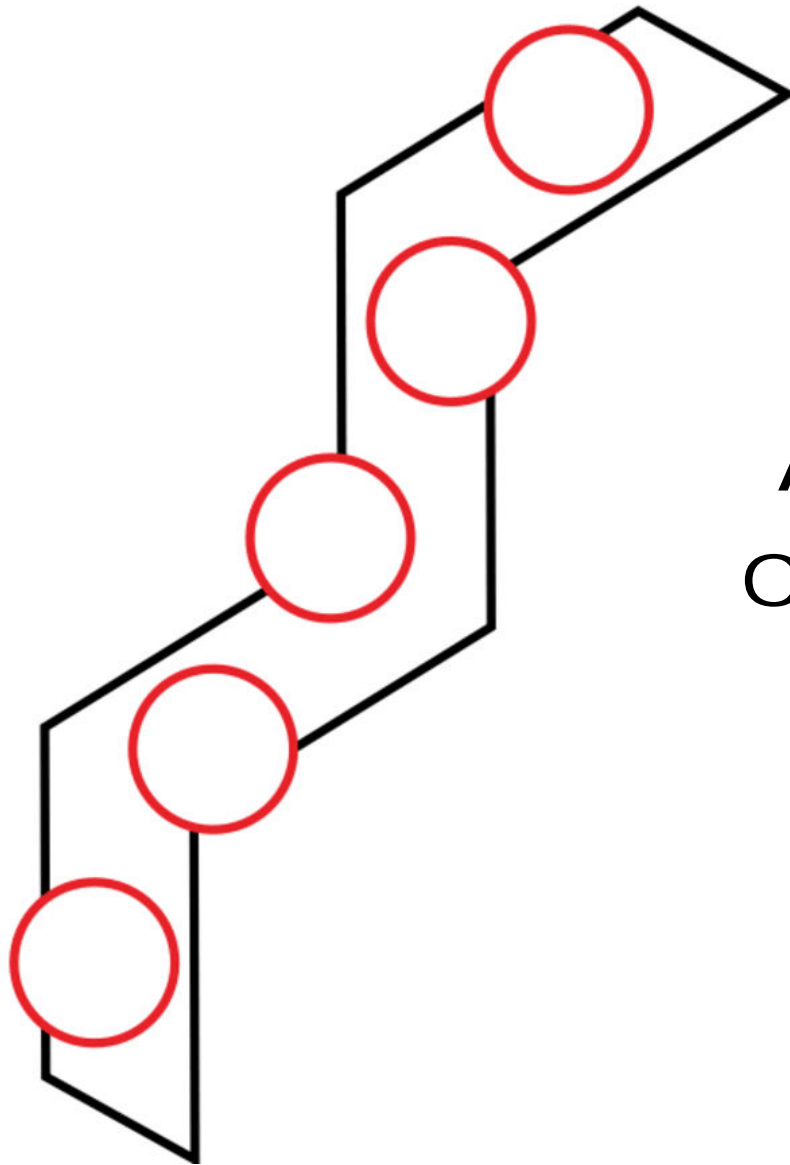
20?



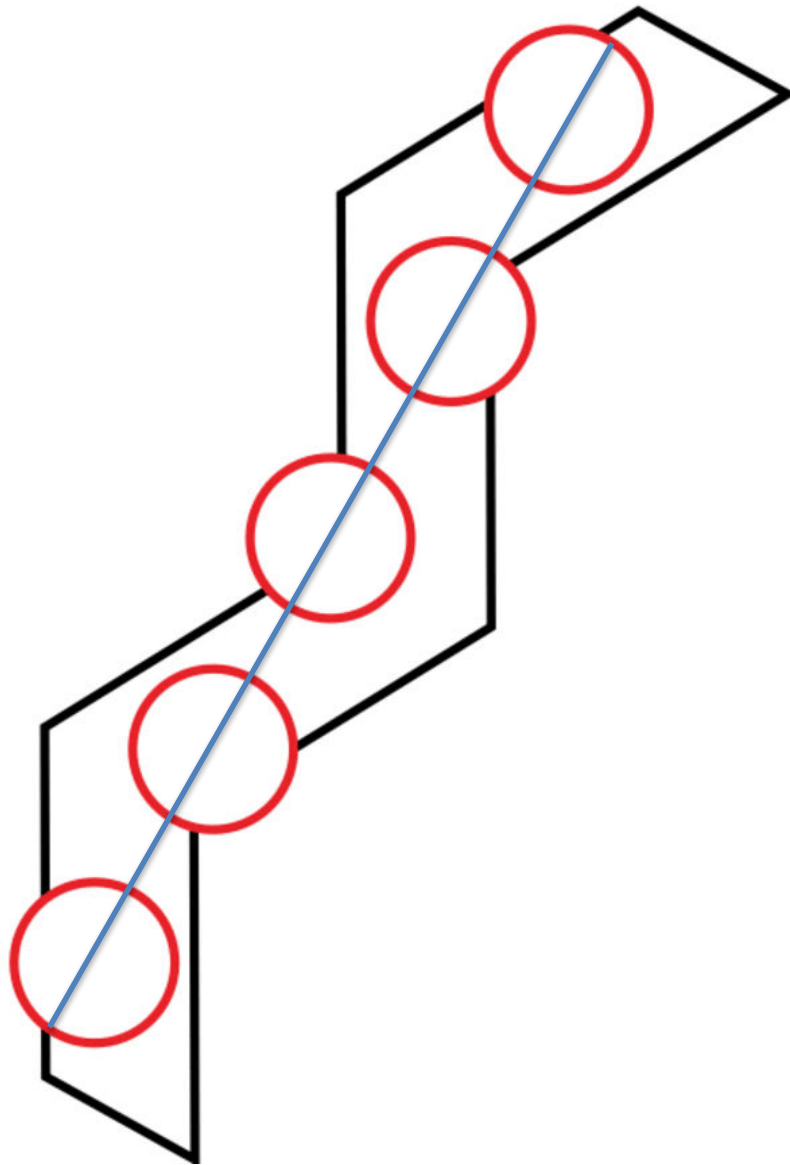
Keep pointing at the road that looks different



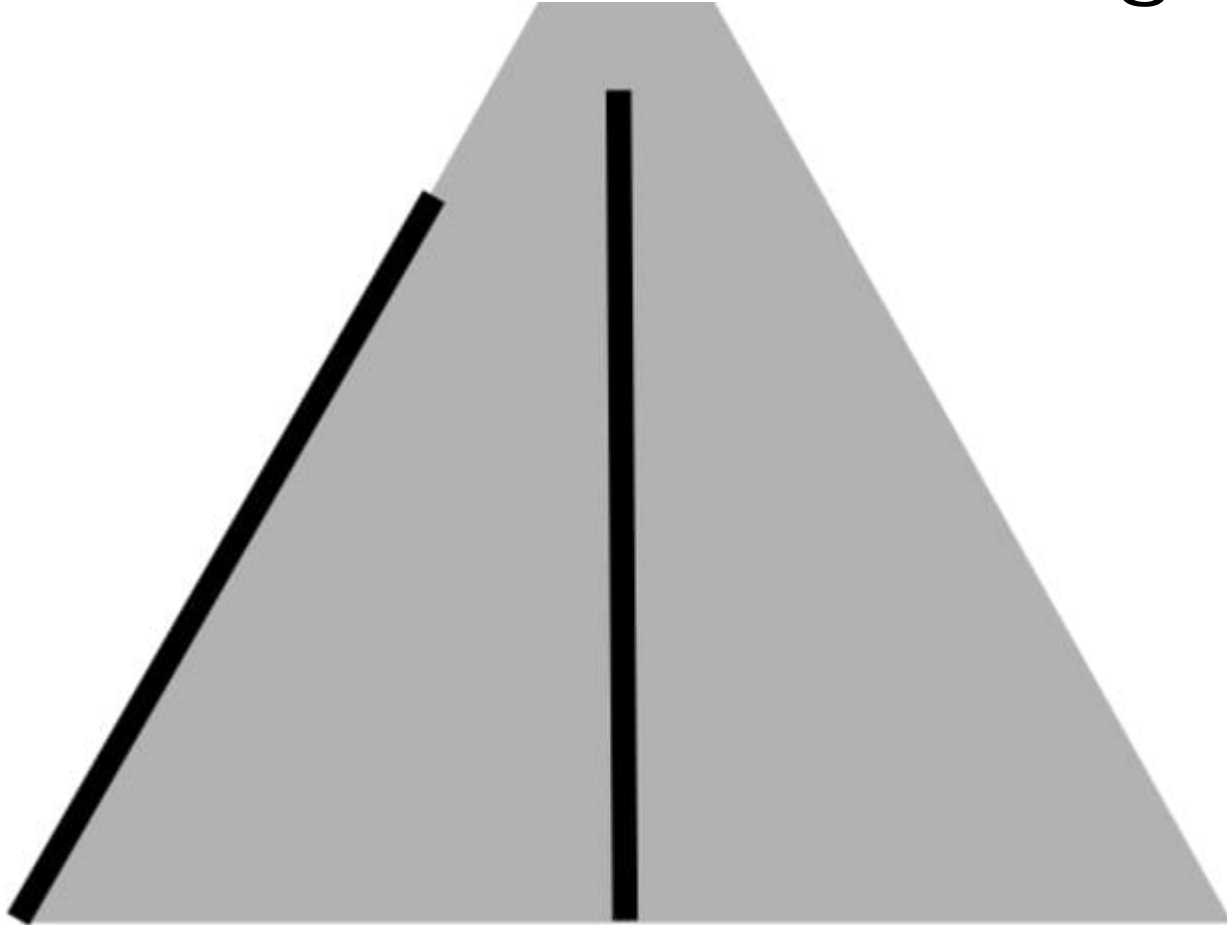
By Kimberley D. Orsten and James R. Pomerantz



Are these
circles in a
straight
line?



Which black line is longer?



What's the feeling we get from



Failure

- What does failure mean to us when it comes to cyber security?
 - Incident? Breached?
 - Fined – compliance?

Does it mean... being one these
firms?

Organizations with Massive Data Breaches

- Yahoo (2016 / 2013)
 - Initially thought 1 Billion
 - 3 Billion – Oct 2017
- Yahoo (2016 / 2014)
 - 500 Million
- eBay (2014)
 - 145 Million
- Equifax (2017)
 - 143.5 Million
- Heartland Payment Systems (2009)
 - 130 Million
- Target (2013)
 - 110 Million
- Tk-TJ Max (2007)
 - 94 Million
- JP Morgan Chase (2014)
 - 83 Million
- Anthem (2015)
 - 80 Million
- Sony Play Station (2011)
 - 77 Million
- Home Depot (2014)
 - 56 Million
- Ashley Madison (2015)
 - 32 Million
- Office of Personnel Management (2015)
 - 21.5 Million

Source: USA Today and Business Insider

OR does it mean... being victim
to



VIRUS

INTRUDER

SPYWARE

IDENTITY

UNSAFE

THEFT

PASSWORD

CRACKER

CODE

HACKER



<https://www.rt.com/news/china-blames-us-hacking-051/>





Images from: [IBTimes UK](#), Security Magazine, RT

What does failure mean when it comes to compliance?



**You're
Fired!**

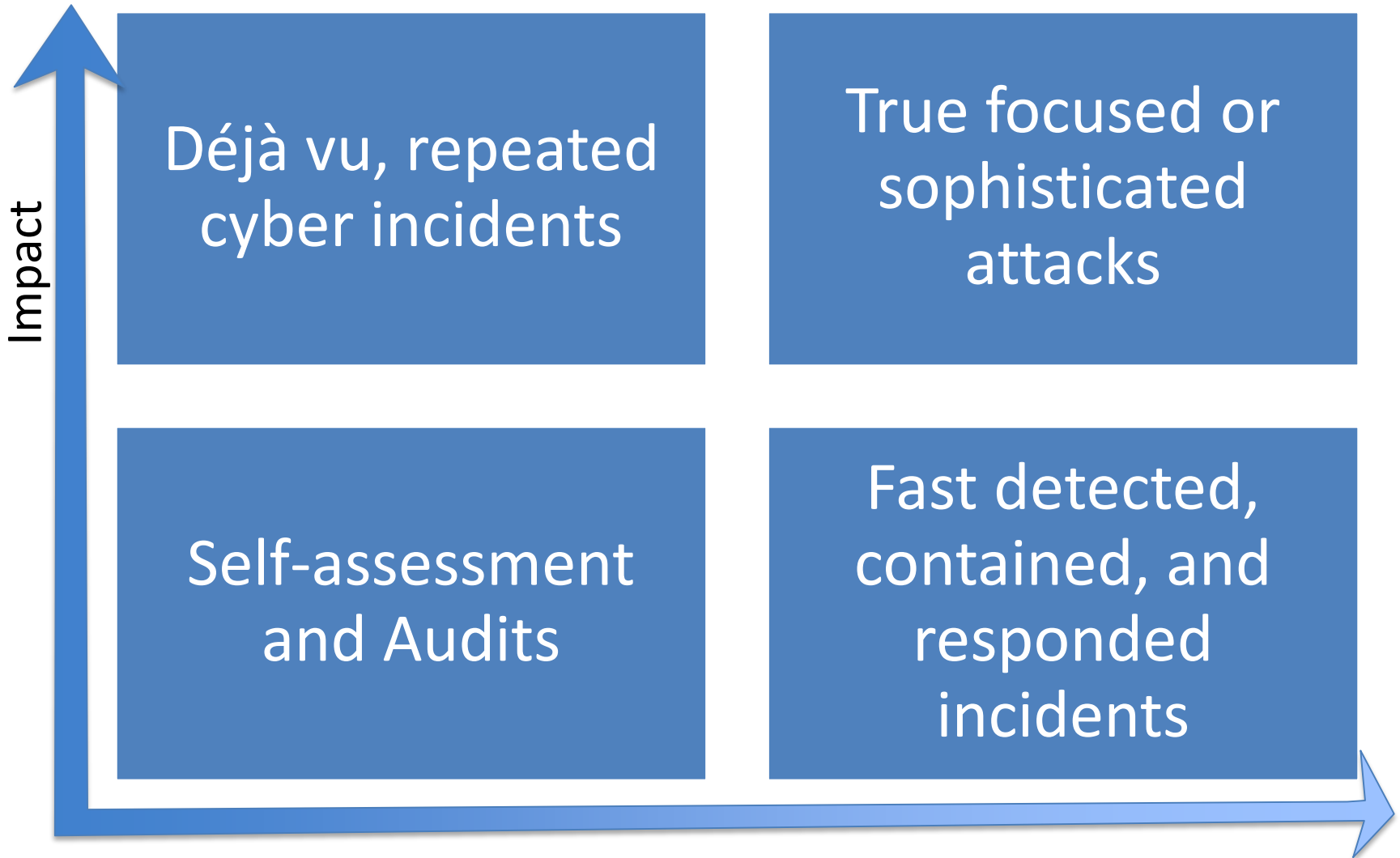


It's bad to fail our audits or pen tests.

WRONG

FAIL OFTEN AND FAST

- Fail often and grow (learn fast – fail forward)
 - Ok to fail Pen Tests
 - Ok to fail audits
 - Learn to be able to respond fast
 - Improves the meantime to detected and respond



Déjà vu, repeated
cyber incidents

True focused or
sophisticated
attacks

Self-assessment
and Audits

Fast detected,
contained, and
responded
incidents

Forward Failures

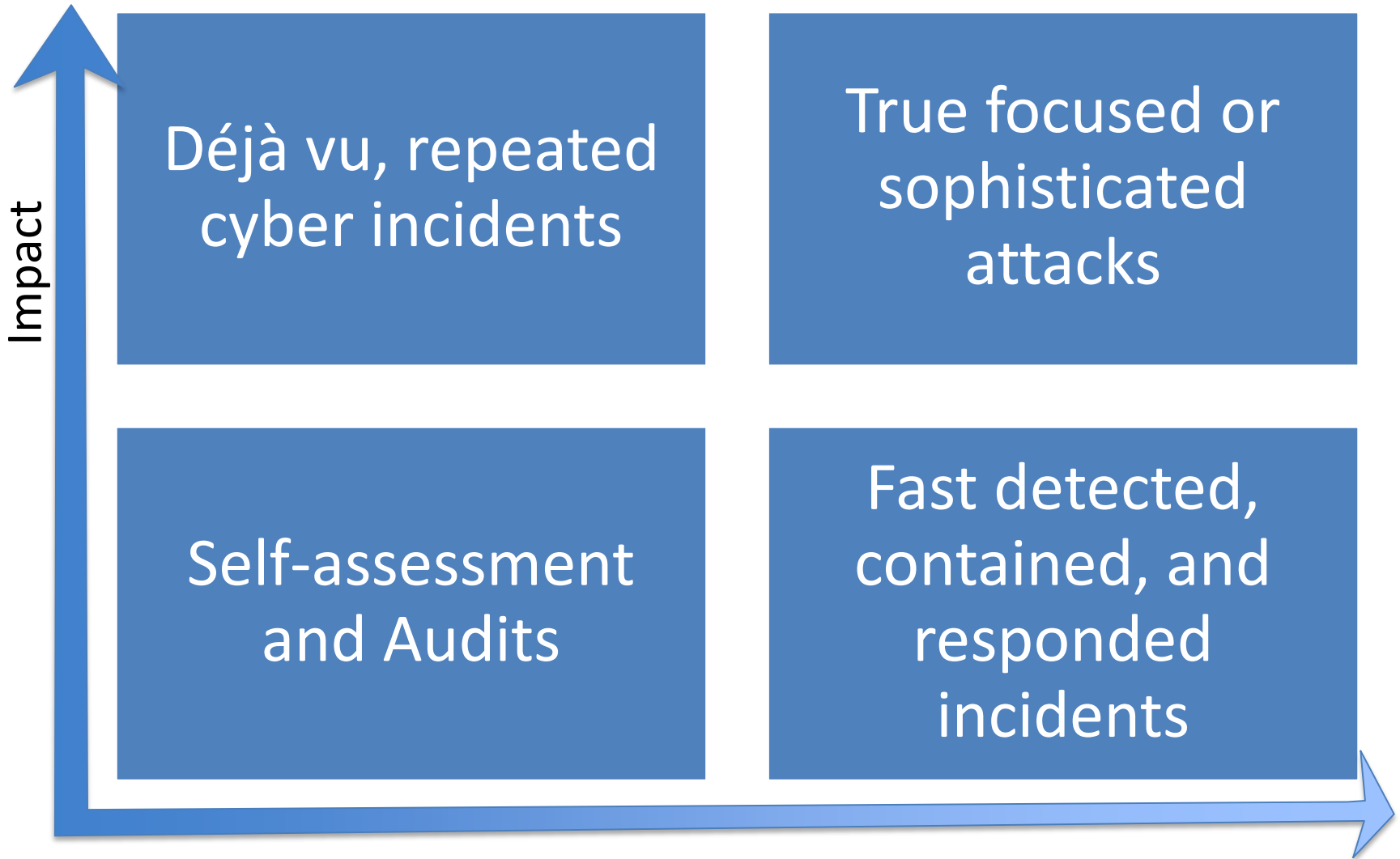
Pass the audits and become like:

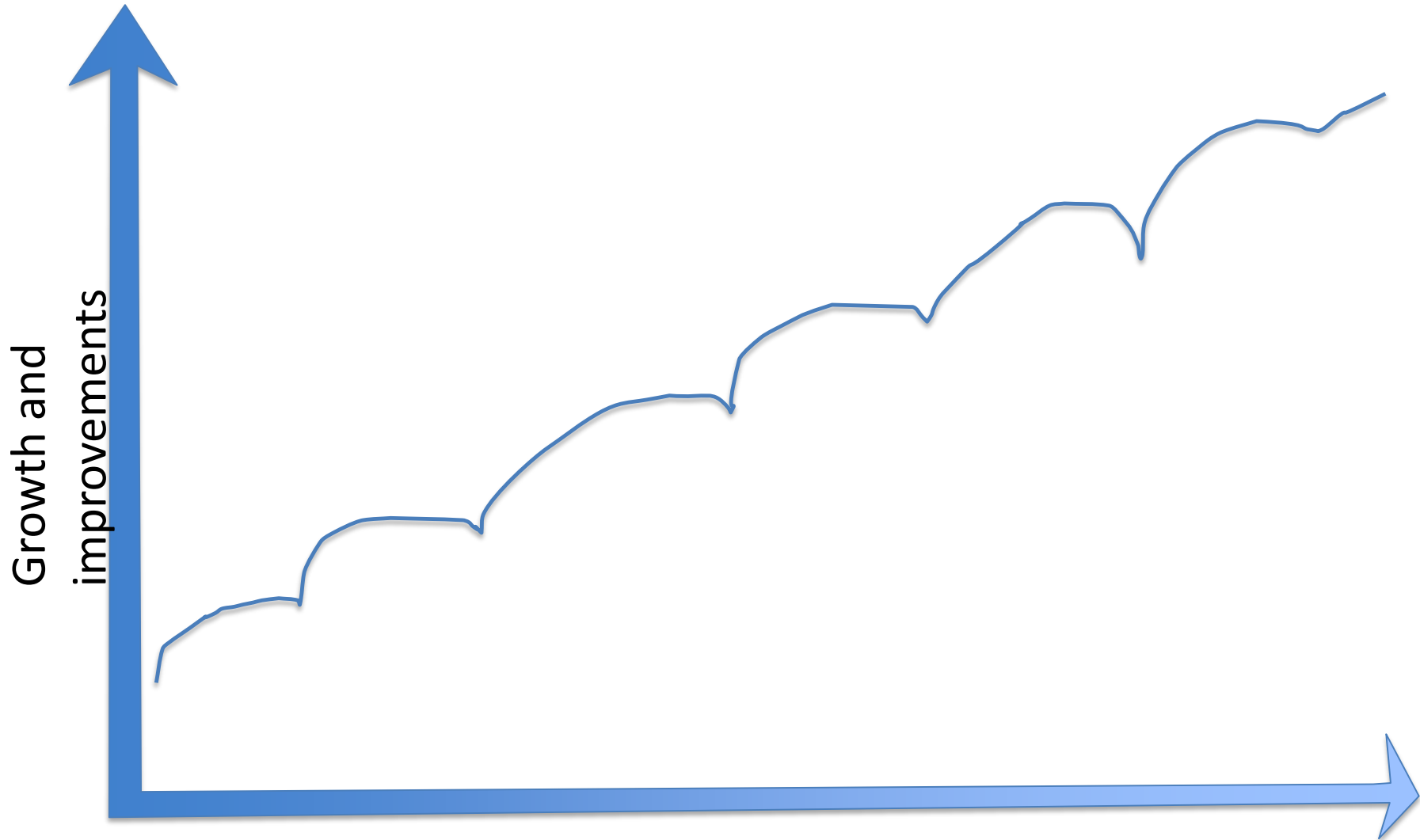
- Yahoo (SOX)
- eBay (SOX)
- Heartland Payment Systems (PCI)
- Target (PCI)
- Tk-TJ Max (PCI)
- JP Morgan Chase (GLBA, PCI, SOX, etc.)
- Anthem (HIPAA)
- Sony Play Station (PCI)
- Home Depot (PCI)

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The concept of failing fast and often

- Book Art and Fear by David Bayles and Ted Orland
- Ceramic class split into 2 groups and provided 2 different grading criteria
 - Group 1 was graded on **quantity** of pots they produce while Group 2 was graded on **quality** pot
 - Group 1 ended up producing the best work in quality (technical and artistic sophistication)

SPACE

The word "SPACE" is written in a white, pixelated, monospace font. A bright, glowing orange and yellow arc, resembling a rocket's exhaust trail, curves across the top of the slide from the right side towards the left, passing behind the text.

- An example of a company succeeding by experiencing many failures in the last 10-15 years.
 - became the first privately funded group to put a payload in Earth orbit, in 2008.
 - launching unmanned cargo vehicles to the International Space Station (ISS) and
 - has \$4.2 billion in contracts from NASA alone and its recent success in cracking the defense contract business
 - Late 2016 win contract (value of \$112 million) from NASA and early 2017 to fly astronauts

SP Failures experienced

- **2006** The first SpaceX launch fails just 33 seconds after lift-off. Cause: a rusty nut.
- **2007** The engines shut down prematurely and the rocket fails to reach orbit. SpaceX is 0 for 2.
- **2008** SpaceX's first payload for NASA; payload ended up in the sea instead. This third failure almost killed the company. It was saved—just a day after the crash—by billionaire Peter Thiel, the company's first outside investor.

SP Failures experienced

- September 2013: Hard impact on ocean
- April 2014: 1st Soft Water Landing
- July 2014: 2nd Soft Water Landing but breaks apart after landing
- August 2014: Engine Sensor Failed – Rocket blew up on air
- September 2014: Ran out of liquid oxygen
- January 2015: Ran out of hydraulic fuel
- April 2015: Stick throttle valve

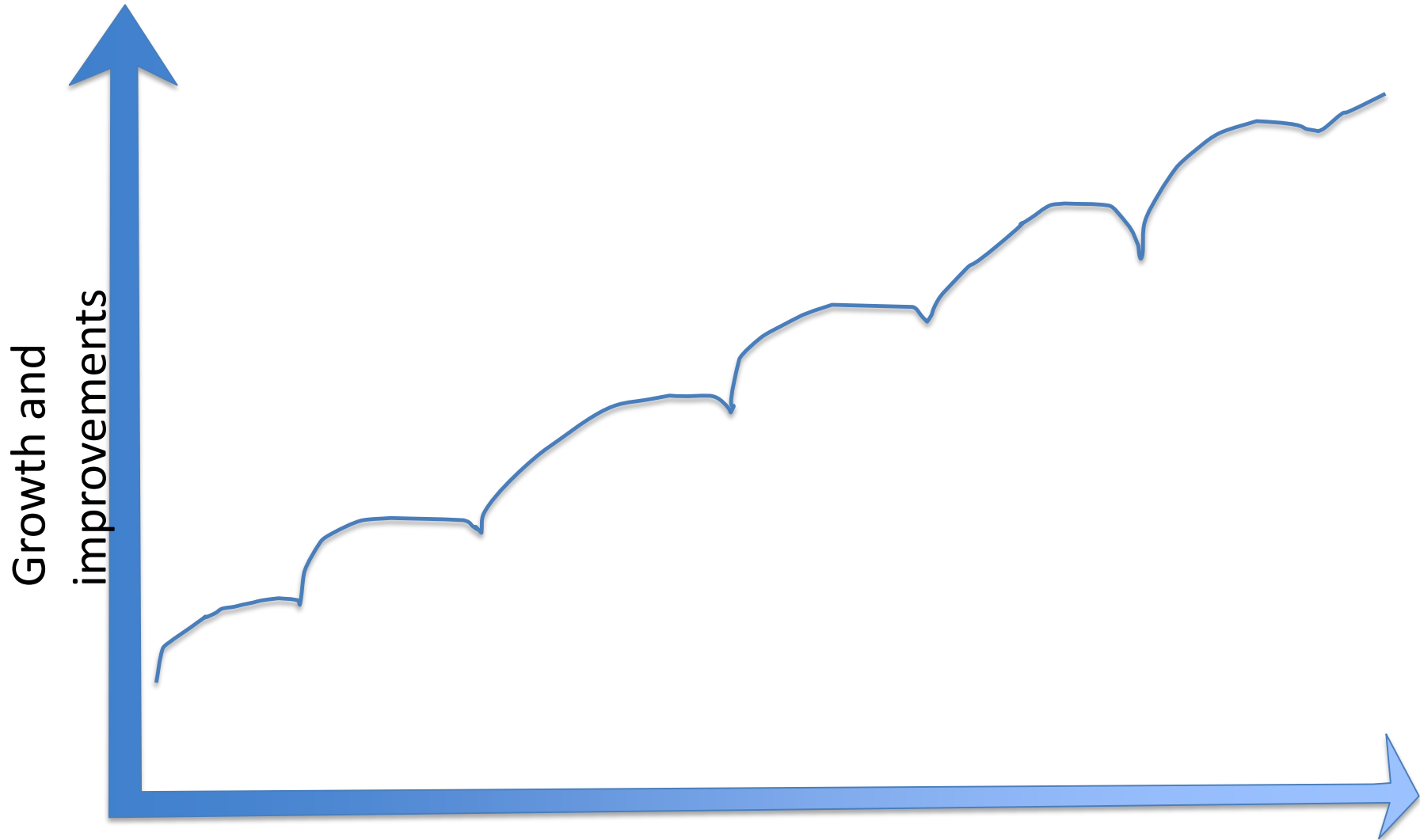
Dec 2015 first Successful Landing

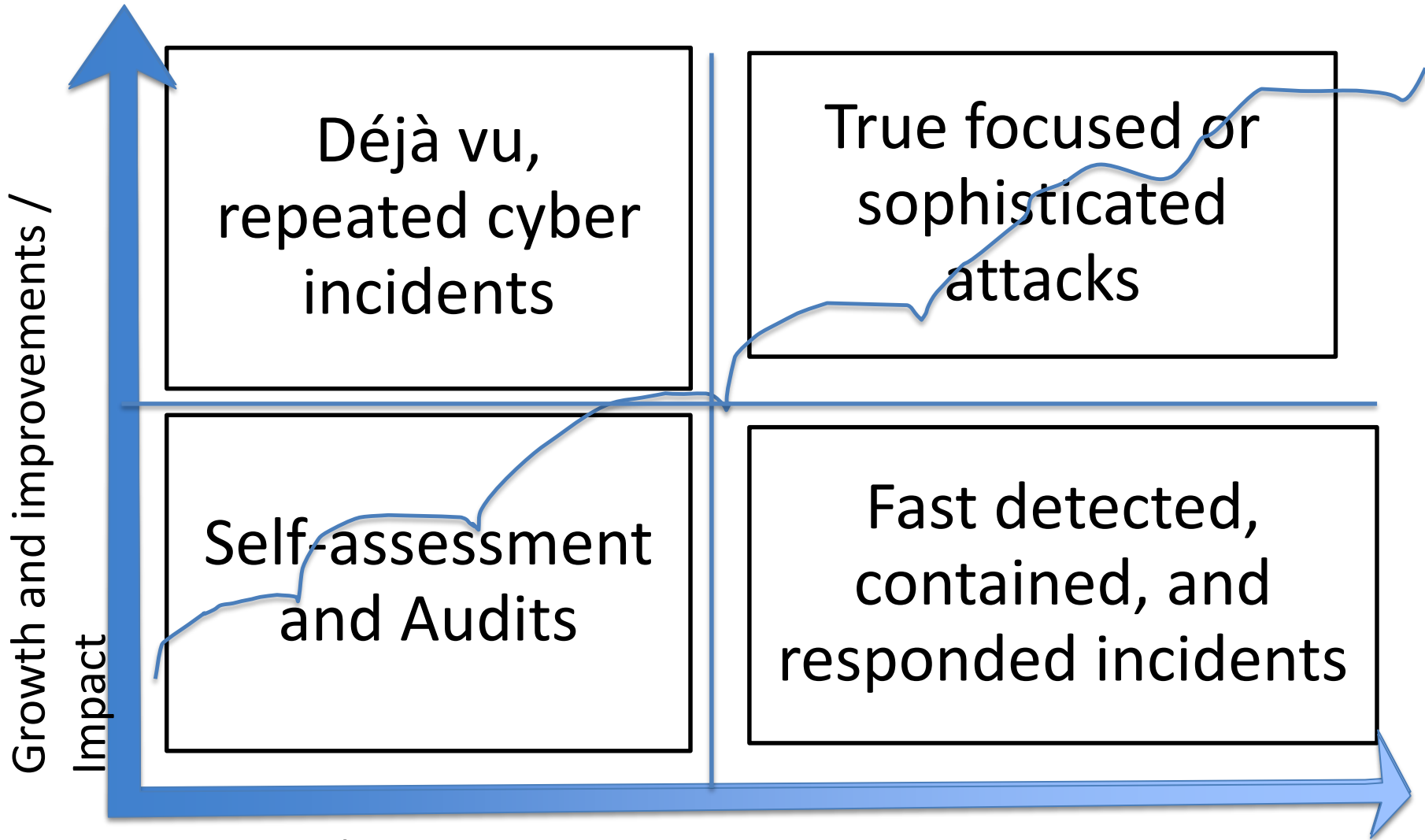
- Jan 2016: Landing leg collapsed
- March 2016 Landing burned failed

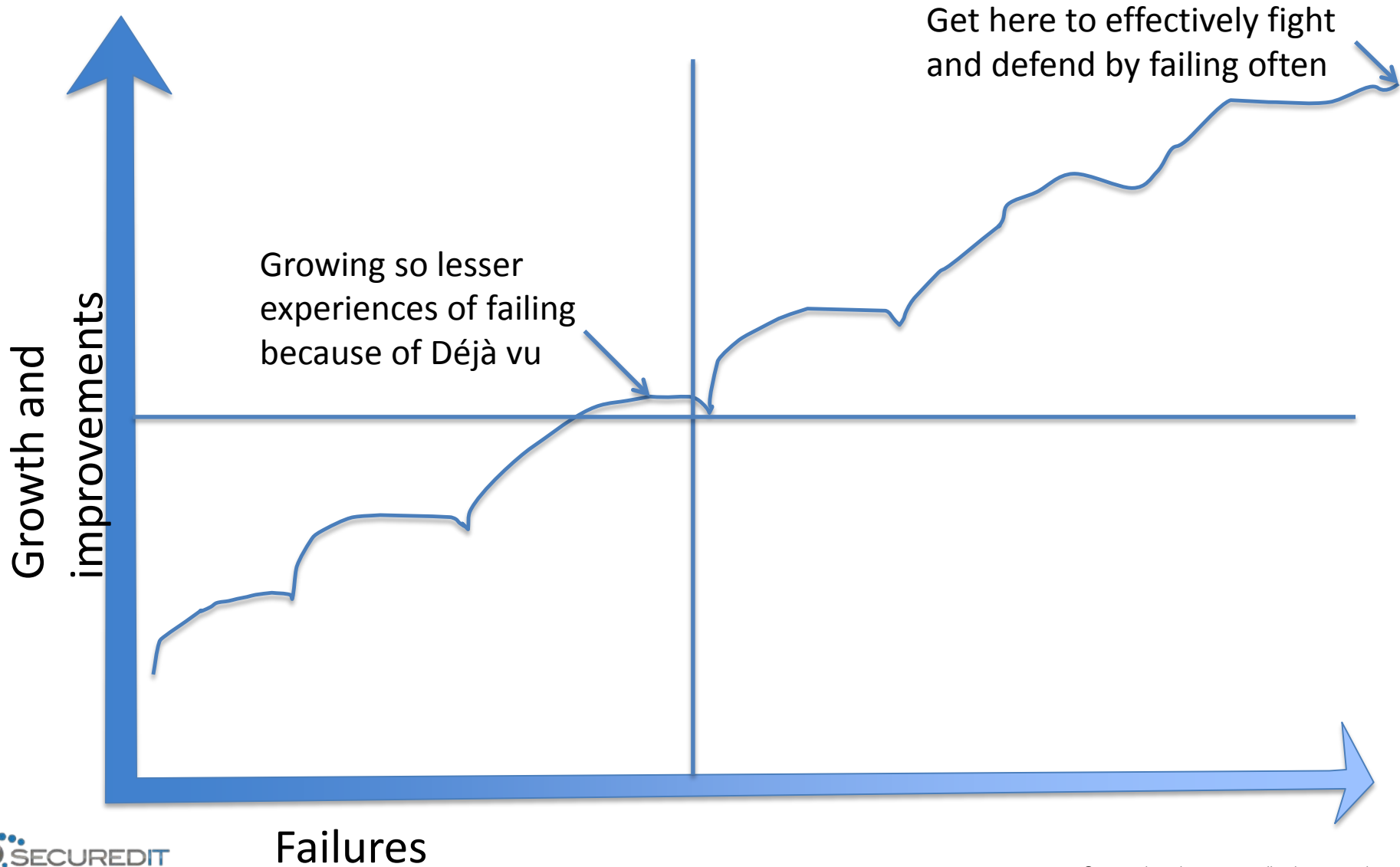
April 2016: First successful drone ship landing

- May 2016 Radar glitch and Leg broke
- June 2016: Ran out of propellant

March 2017: First launch and landing of a reused first stage.







Learning from failures not easy

- Learning is not instantaneous or automatic
 - People feel grief which obstructs our ability to learn from failure
 - People need to have the feeling
 - But you need to not allow the grief of the loss affect the inability to learn from a failures
 - Make the most of failures
 - Emotionally capable organization
 - Don't desensitize failures

How to foster learning from failures?

- Use every opportunity
 - Quantity over Quality
- Focus on the right and calculated failures.
Tailoring the easy-to implement failing forward suggestion from Fail Fast, Fail Often
 - Identify the impacts
 - Reverse thinking: look at ways you can fail
 - Drives process improvement and maturity
 - Drives Offensive Defense
 - Do it anyways: Get out there and give it a try
 - Ex. No repercussion for blocking sites for an hour
 - Case study with watering hole

How to foster learning from failures? cont.

- Fail Forward: use exploratory action to learn and discover
 - Threat Intelligence
- Find the next challenge: Seek out the next opportunity to reach your limits.
 - Threat Hunting

– Succeed!!



Failure is a Stepping Stone to Success

Tony Robbins

Sources

- Times.com
- Fortune.com
- Verizon DBIR and DBD
- Fail Fast, Fail Often *How Losing can help you win.* By: Ryan Babineaux, Ph.D and John Krumboltz, Ph.D
- Timeline.com
- Forbes.com
- “How Not to Land an Orbital Rocket Booster” Youtube compilation
- Art and Fear by: Ted Orland and David Waylon



Questions???

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