

Problem-Solving in the Wild

Or

“Think Smarter and Move Resources As Close to the Warfighter as Possible”

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Guiding Principles for Problem-solving & Decision-making

- Know and understand the problem.
- Work the problem. - Work. The. Problem.
- Learn and understand mental models and decision-making biases.
- Be cognizant of, and, **actively change your behavior** to offset your decision-making biases.
- Move to decisions, not just discussion!
- Work the problem (again and always).
- Know and plan what goes into your problem-solving “Go Bag”.

Distortions, Deceptions, Biases

Kahneman's System 1 vs. System 2 Thinking

- System 1 thinking is the brain's fast, intuitive, automatic approach. It's what keeps us safe in the world. But, you need friends to let you know when you are in System 1 thinking.
- System 2 thinking is our more reasoned, analytical approach to problems. But, it can sometimes lead to illogical results.
- Both systems are flawed, but if you understand them, and yourself, you can make better decisions.

Over-Optimism

We all think we are in the top 20% of the population when it comes to:

- 1. Driving**
- 2. Pleasing our partners**
- 3. Managing a business**

This over-optimism leads to unrealistic forecasts and allows leaders to underestimate future challenges.

Lucky risk takers use hindsight to reinforce their feelings, which results in others' trusting in the lucky risk takers gut feelings, compounding the challenge.

Framing

Option A

- 100% chance you can save 200 people.
- 100% chance 400 people will die.

OR

Option B

- 1/3 chance that you can save 600 people.
- 2/3 chance that you can save 0 people.
- 1/3 chance nobody dies.
- 2/3 chance 600 people die.

Principal – Agent Deceptions

- In this case, the “principal” is a company commander, and the “agent” is any Soldier in the unit.
- Every day, agents make proposals to be evaluated by the principal. In a perfect world, the incentives of the two would be aligned.
 - The world is not perfect.
- When principal-agent incentives are not aligned, conflicts of interest arise; the agent will intentionally deceive the principal to buy more time, refine her narrative, etc.

Anchoring Trap

- The mind gives disproportionate weight to the first information it receives.
- Example:
- “Did you hear that LT Dan is dating SGT Pepper?”
 - LT Dan and SGT Pepper were seen having lunch three times this week in various places. Why? LT Dan is applying to graduate school and wants SGT Pepper’s advice.
- Even when told the truth, we are skeptical. We require far more evidence than the truth to free our minds of that initial information.
- We will probably watch LT Dan and SGT Pepper for awhile.

Status-Quo Trap

- Decision-makers exhibit a **STRONG BIAS** toward alternatives that favor the status quo. Why?
 - Because we inherently want to protect our egos from damage and take on less psychological risk.
 - Breaking from the status quo requires action, which requires taking responsibility, which opens us up to criticism and regret.
 - Evidence shows that the more choices we are given, the more we lean toward the status quo.
-
- How does the Army treat sins of commission v. sins of omission?

Sunk Cost Trap

- We tend to allow previous bad decisions to influence current decisions.
 - For instance, we continue to fund things that haven't worked to protect our previous poor decisions.
 - We don't want to change because we don't want to admit the previous decision was a mistake.
- Conversely, not making an investment in something because it didn't work before precludes us from learning why the previous investment didn't work in the first place.
- When dealing with “baggage”, seek out those who were not involved in the original decision. Examine why admitting a mistake distresses you and deal with it. But also remember that sometimes smart decisions still lead to bad consequences.

Confirming Evidence Trap

- We tend to decide what to do before we know why we are doing it, so we seek out information that supports our initial conclusion.
 - Even if we hear a shred of supporting evidence, we tend to believe it over a mountain of conflicting information.
- Look for, and, demand evidence that disproves your hypothesis to ensure the best decision.

Groupthink

- When a group minimizes critical thinking and focuses only on consensus.
- When a group makes a decision based on what they *think* the leader wants.
 - “GEN Townsend will never go for that.”
 - “I heard LTG Martin say that he really wants to move forward with this!”
- What GEN Townsend and LTG Martin want, and what all leaders should want, is unvarnished, critically evaluated options.
- Include natural skeptics in your decision-making, red team yourselves, appoint someone as the opposition research person to challenge assumptions and decisions.

Can I Trust My Gut?

- Gut instinct will always influence our decisions
- Why? Because we start to *feel* something before we even know we are thinking about that thing – ANCHORING.
- But gut instincts aren't always right, so the best we can do is to identify situations where gut instinct biases our decision-making.
- How can we test our gut feelings?
 1. **Familiarity Test** - have we been here before in identical or similar situations?
 2. **Feedback Test** – did we get reliable feedback in past situations?
 3. **Measured-Emotions Test** – are the emotions we experienced in similar situations measured?
 4. **Independence Test** – are we likely to be influenced by inappropriate personal interests?
- If a given situation fails even one of these tests, **ask more questions.**

How Can We Save Ourselves?

Minimize Biases

- First, realize that we all have them.
- Then learn how to identify them.
- Then discipline yourself to use tools to minimize them.

Use Heuristics

- Means-End Analysis – Big problems, small problems
- Working Backwards – Start from desired end-state
- Consistency – Allows your response to be consistent
- Availability – Previous experience informs current response

How Can We Save Ourselves?

Get the right people in the room for the decision

- Decisions are not meant to be made only by virtue of rank or position.
- It's OK to have the CG, a Squad Leader, the Intel Chief, and a recruiter in the room if that's who is best qualified to make a decision.
- In the decision-making process, there are those who provide input, those who recommend, those who "Red Team" a recommender, those who must execute the decision, and the "decider".

How Can We Save Ourselves?

Think globally, decide locally!

- Effective organizations do well with large, strategic decisions
- Breakthrough organizations shine with the daily operational decisions that require consistency and speed
- You can't fix things with an 8,000-mile screwdriver – move as many resources downrange as possible to support the Soldier
- All of this requires trust and empowerment
- Empowerment is a great thing... Unless you don't possess the skills to do anything with it. Empowerment is a RESPONSIBILITY for which you are ACCOUNTABLE.

How Can We Save Ourselves?

Fair Play

- REQUIRE vigorous debate
- Prohibit defensive language; focus on the issue, not the person. No *ad hominem* attacks!
- Break up natural coalitions
- Move people from well-worn grooves
- Ask stalemated participants to revisit the key information

How Can We Save Ourselves?

Inquiry versus advocacy

- Advocacy – seen as a contest, more lobbying than not, downplays weaknesses, dismisses minority views, sees winners and losers
- Inquiry – seen as a collaborative problem solving, more evaluative than not, uses critical thinking, presents balanced arguments, accepts criticism, and offers collective ownership
- Does the Army want to be an organization that rewards inquiry, that requires inquiry, that makes decisions through inquiry?

Final Thoughts

- Make sure you understand the difference between reversible and irreversible decisions.
- **Always** help others make good decisions.
- Data must be processed into information to be useful to decision-making. How does the Army use data to see itself better and make better decisions?
- Adapt the process to make the right decision.

FINAL Final Thoughts

- Reserve the right to get smarter. Learn from bad decisions and move on.
- Failure is not always a wrong answer.
- Wrestle everything to the ground.
- Risk is something you take and manage, not something you avoid.

Hacking for DefenseTM

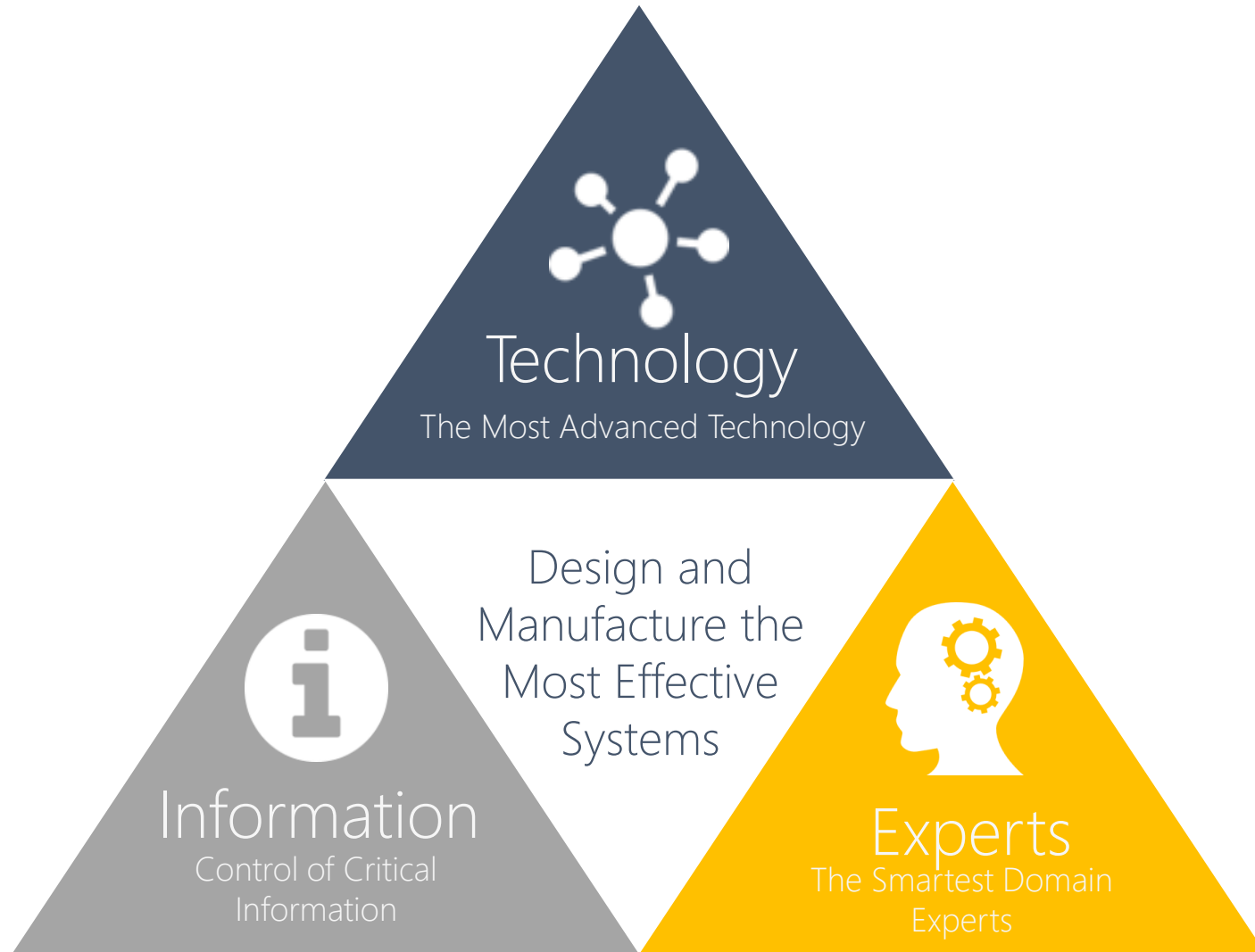
Solving National Security Problems Using Lean Startup Methodology

Chris Taylor & Matt Zais

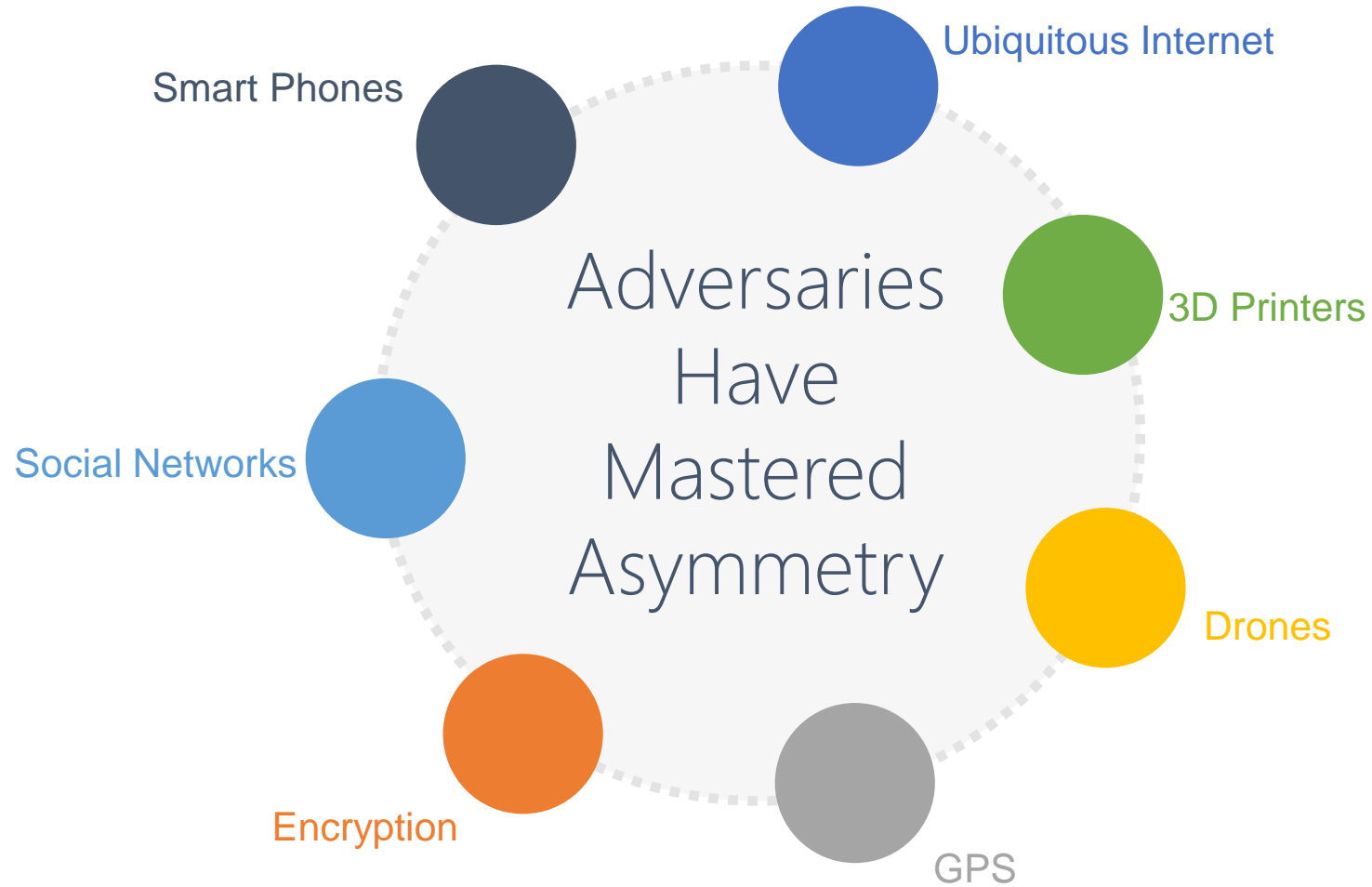
Georgetown University & the National Capital Consortium



20th Century DOD/IC Dominance



21st Century Disruption





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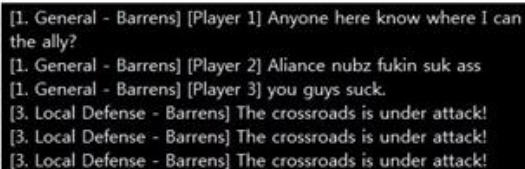
Accessory Bundle	Quadcopter Only	Certified Refurbished
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- 4k UHD video recording with fully stabilized 3-axis gimbal; Vision Positioning system allows stable flight indoors
- Lightbridge digital streaming allows live viewing of 720p video (full resolution video is simultaneously recorded on the internal microSD card)
- Included flight battery and rechargeable remote controller means this system is ready to fly out of the box. Flying this product is restricted within 15 miles radius of the White House.
- DJI Pilot app for iOS and Android allows live viewing and complete camera control (phone/tablet sold separately; see DJI's website for compatible models)
- ****VERY IMPORTANT**** Kindly refer all the Tutorial Videos given in the Image Section on the Catalog before use for the proper training.

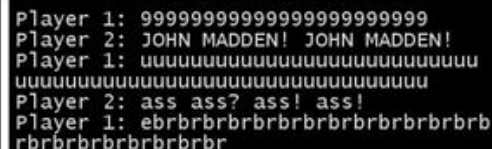
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84 new from **\$750.00** 19 used from **\$657.37** 2 refurbished from **\$739.00**

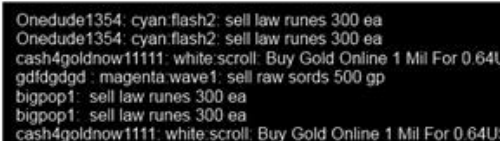
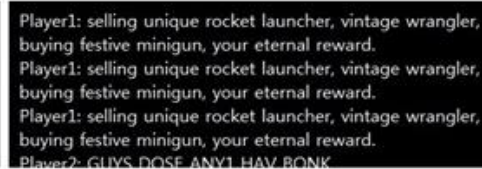
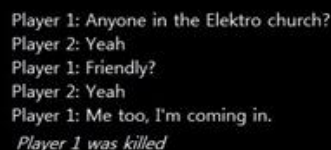
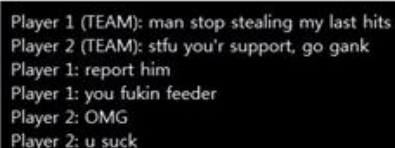
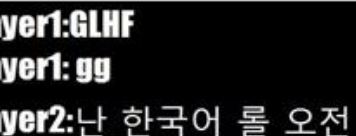
er 1: Do you have any spare coal?
er 2: Yeah I do.
er 1: Can I have some?
er 2: Sure.
er 1: Cool. Thanks.



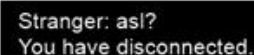
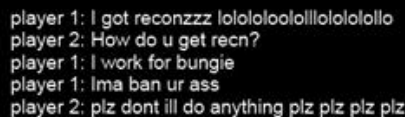
Player 1: dude u fukin suck
Player 2: ur mom suks
Player 1: lol noscope bich
Player 2: stop hacking fagot
Player 1: go cry 2 ur mom

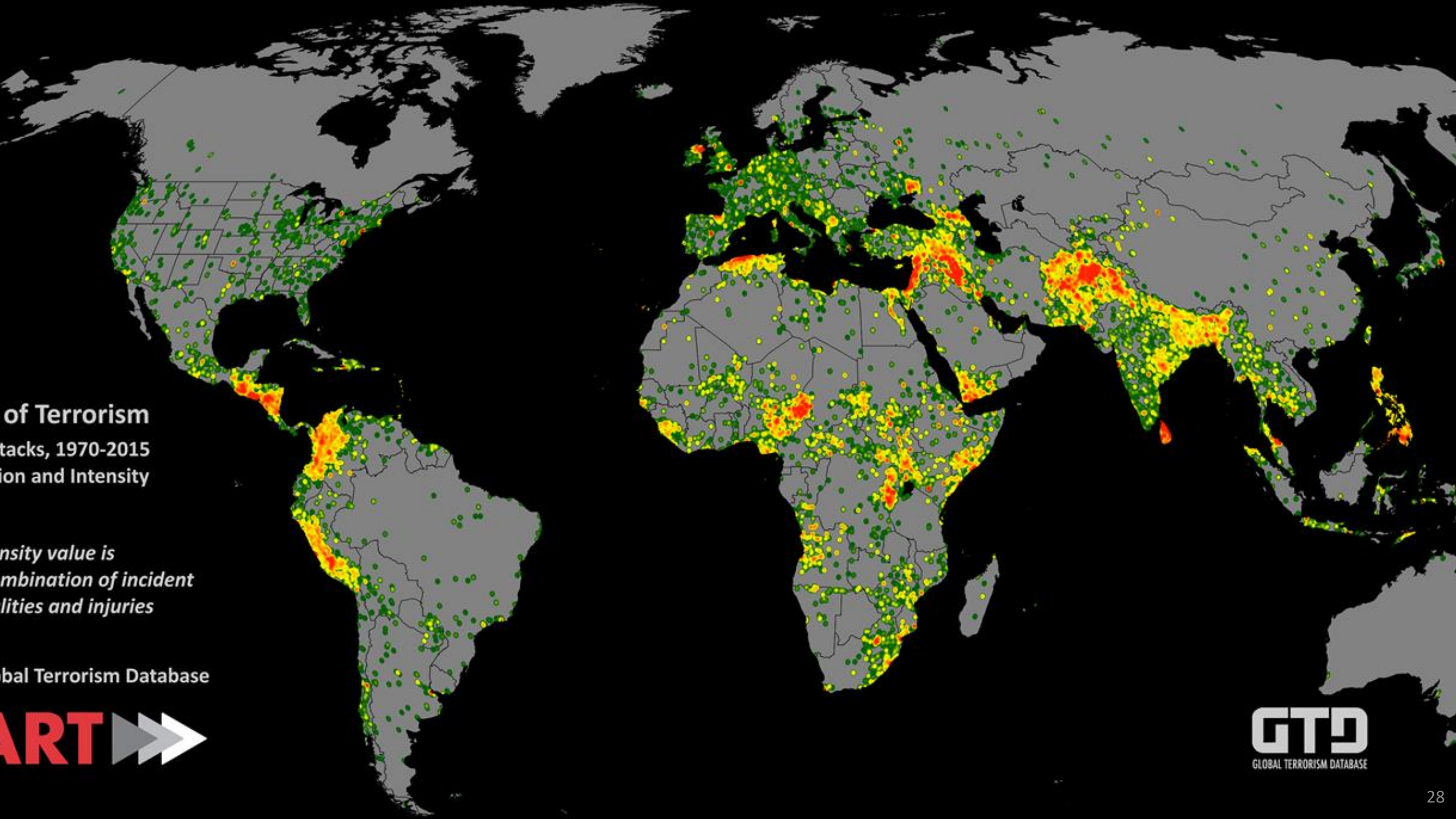


Battlefield 3 chat:
Player 1: HAH! Did you guys see that?
Player 1: Hey guys?
Player 1: :(
You were auto-kicked from the game stated reason: Spam
Player 1: ENEMY TANK SPOTTED
Player 1: ENEMY TANK SPOTTED



r 1 - Go go gol
r 2 - Get out of there it's gonna blow
r 1 - Go go gol
r 2 - Get out of there it's gonna blow
r 1 - Go go gol
r 2 - Get out of there it's gonna blow
r 2 has left the game.





of Terrorism
attacks, 1970-2015
ion and Intensity

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bal Terrorism Database



GTD
GLOBAL TERRORISM DATABASE







The Lean Startup

A faster way to build and deploy national security solutions

Lean Startup Steps

1. Frame Hypotheses



Mission Model Canvas

1. Frame Hypotheses

Mission Model Canvas

Mission/Problem Description

Mission/Problem Description				
Key Partners	Key Activities	Value Propositions	Buy-In & Support	Beneficiaries
	Key Resources		Deployment	
Mission Budget/Cost		Mission Achievement/Impact Factors		

Lean Startup Steps

1. Frame Hypotheses
2. Test Hypotheses

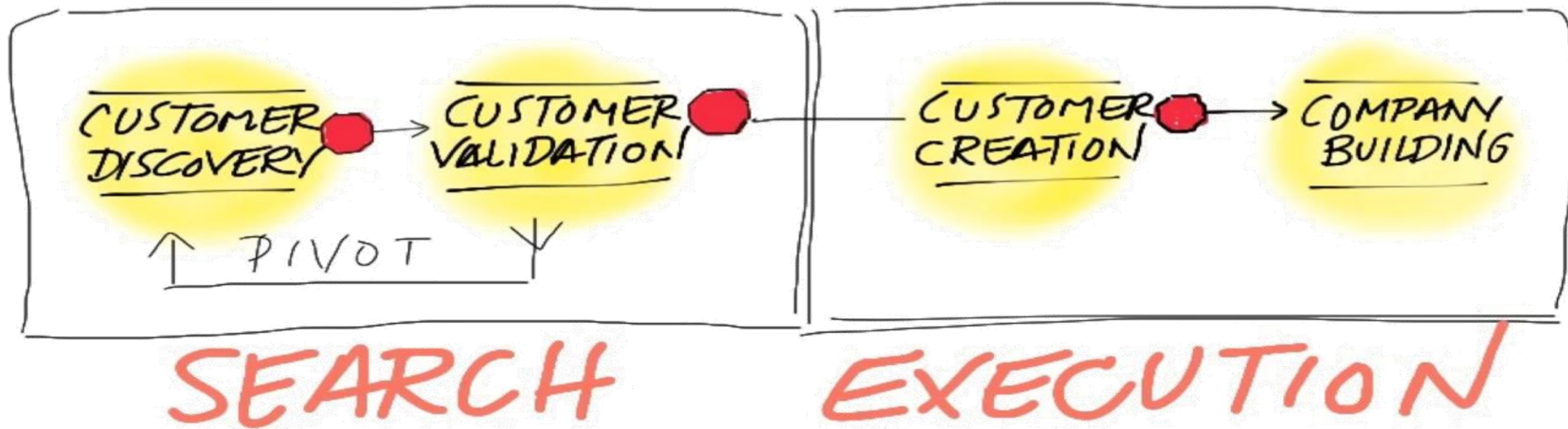


Mission Model Canvas

Customer Development

Beneficiary Discovery

2. Beneficiary Discovery



Lean Startup Steps

1. Frame Hypotheses
2. Test Hypotheses
3. Build Incrementally & Iteratively



Mission Model Canvas

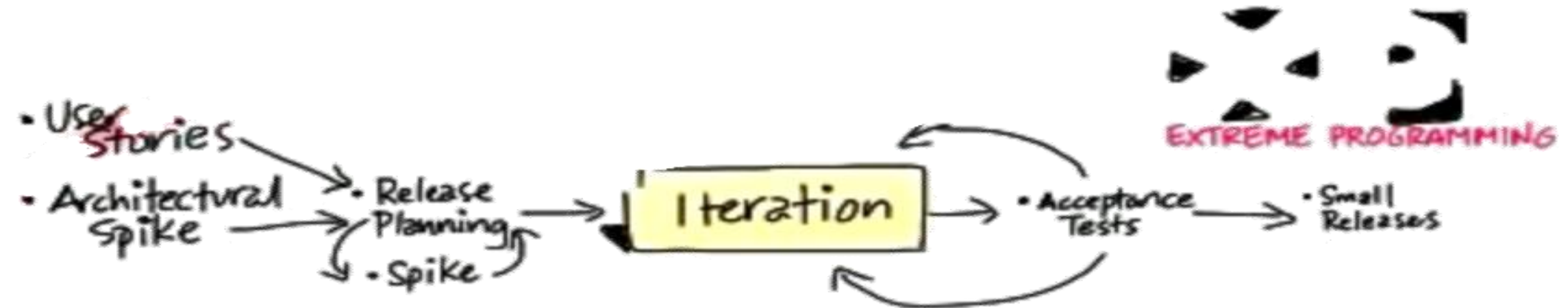


Customer Development



Agile Engineering

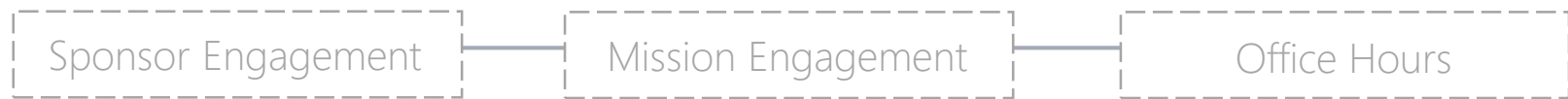
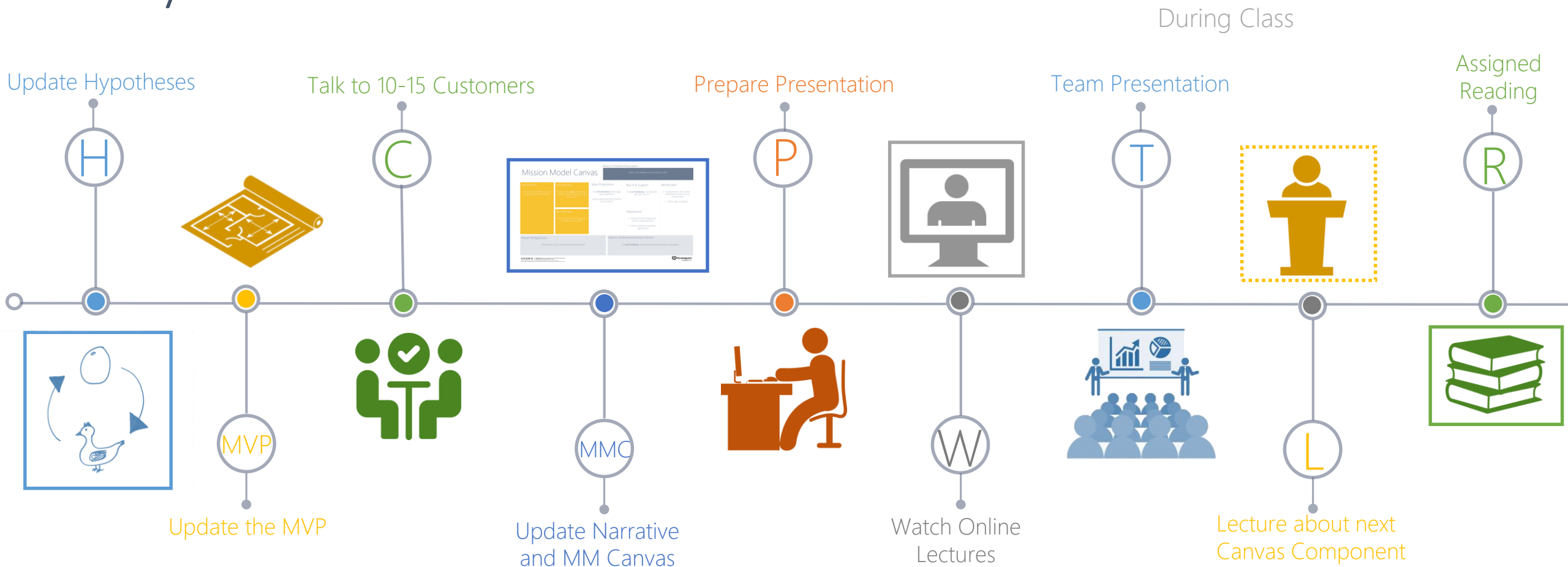
3. Build Incrementally & Iteratively



The Goal Is Not to Build a Cool
Demo

Understand How Your Solution Can **BE DEPLOYED** to
Solve a Real Problem

Weekly Workflow

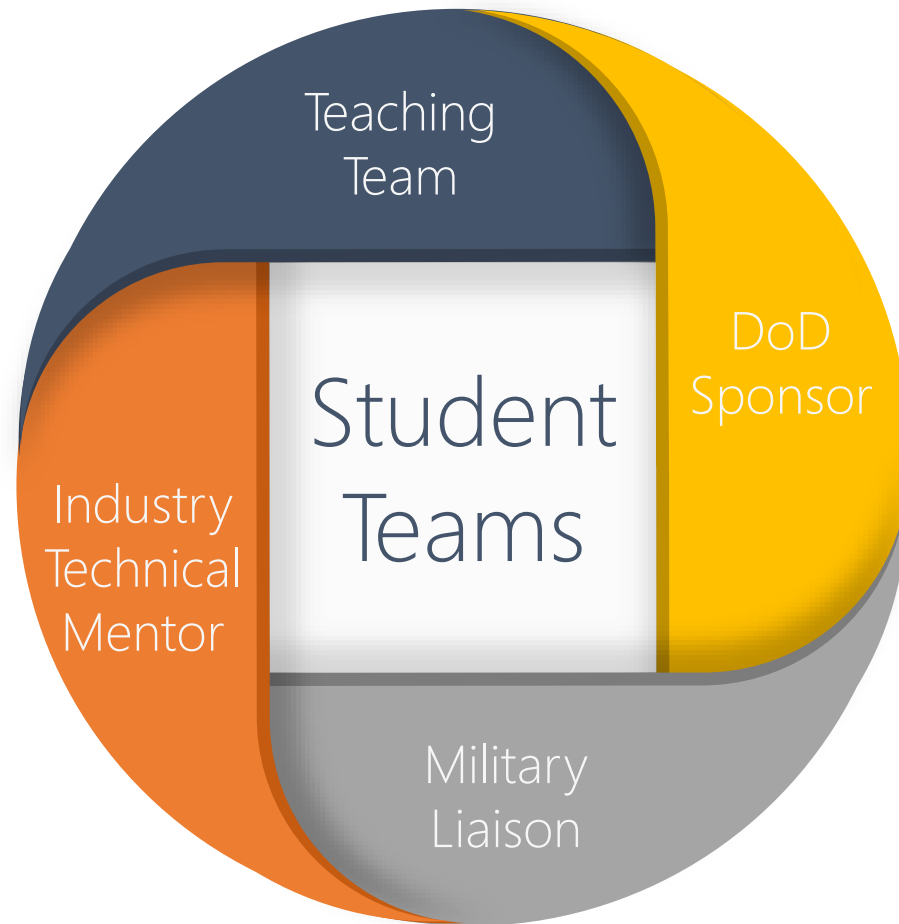


 Students with Teaching Team

 Teaching Team

Team of Teams

The Team



An Example...

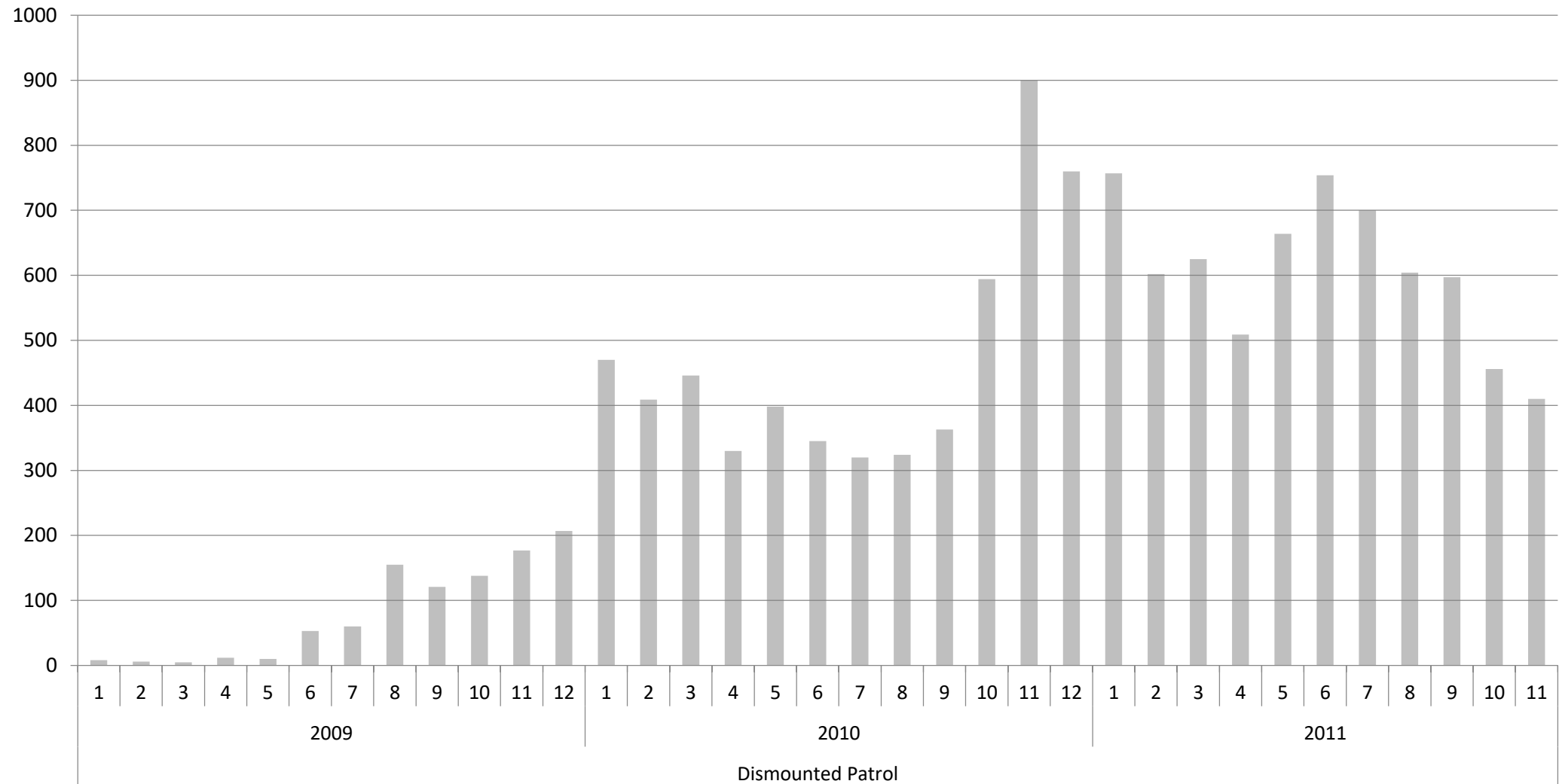
2010 – What We Were Buying



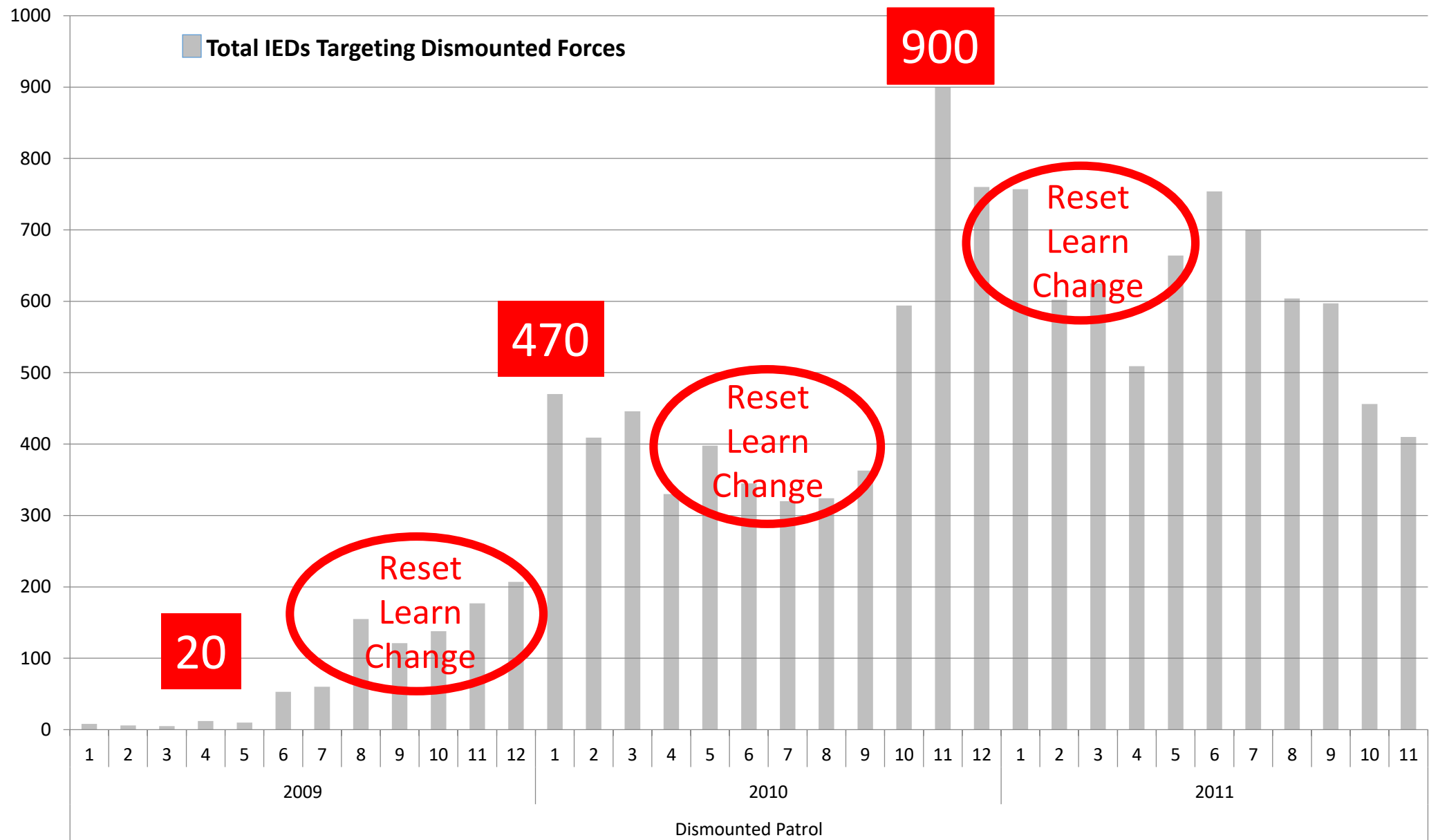
2010 – What We Were Doing



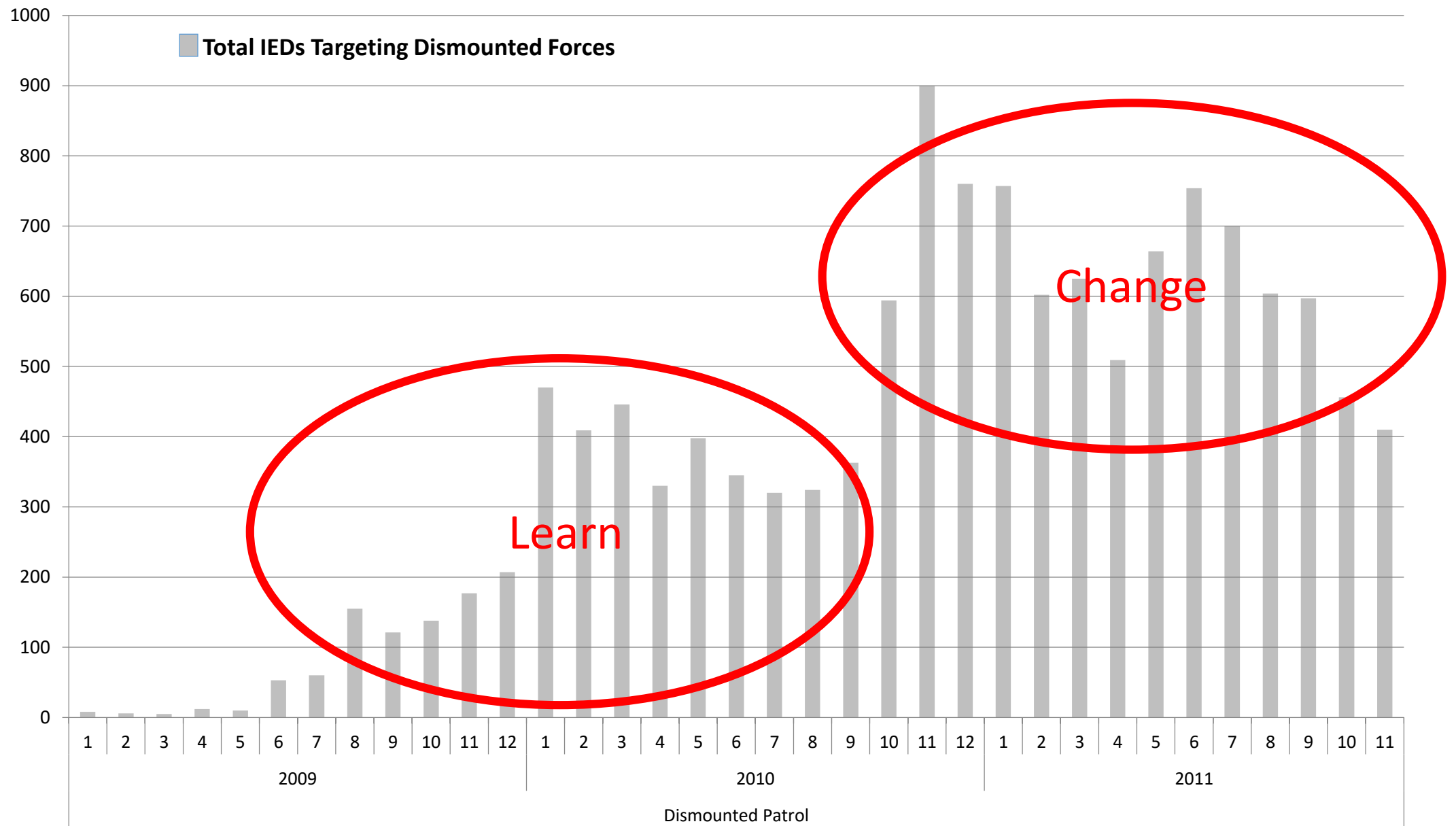
IED Attacks Against Dismounted Squads



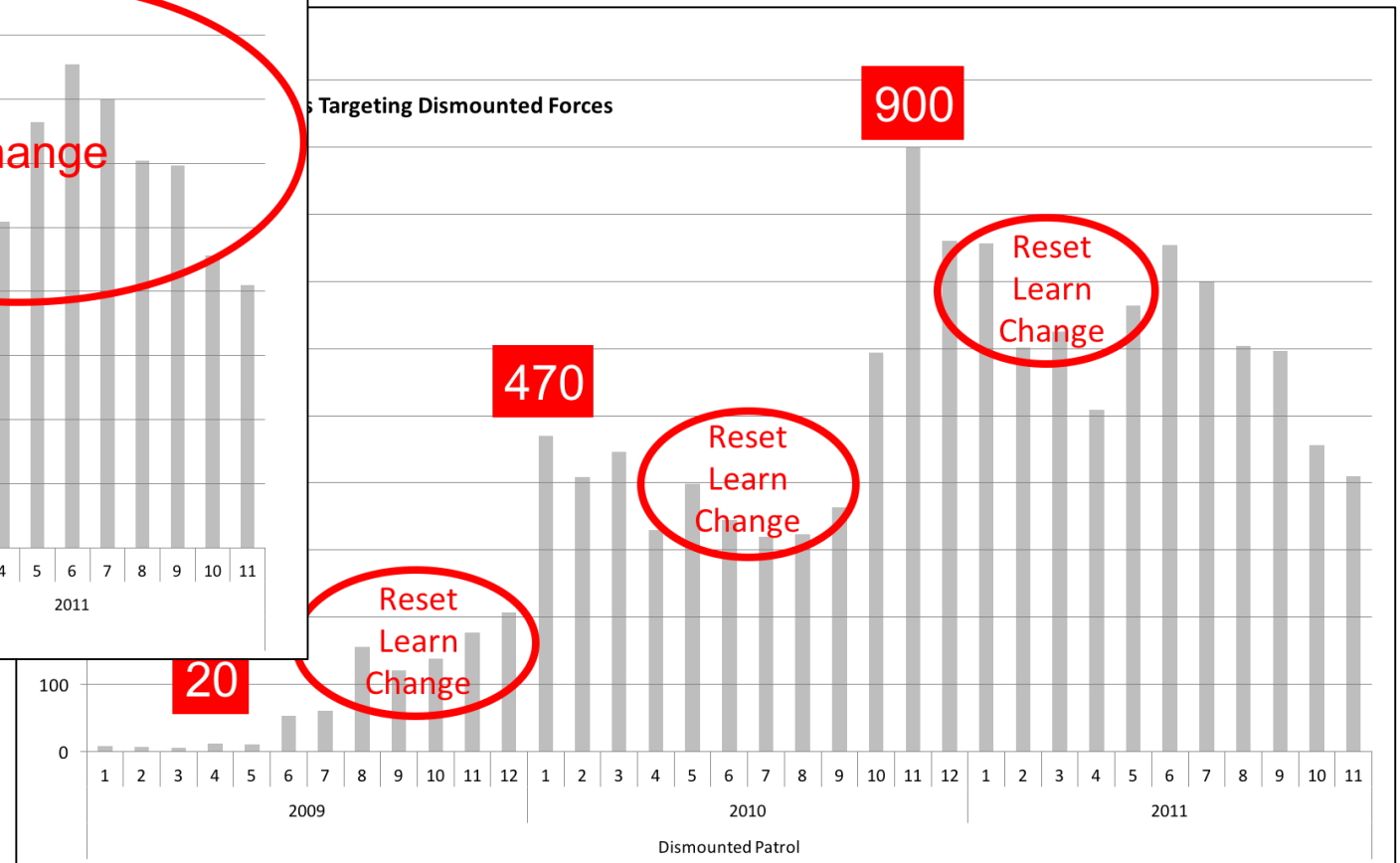
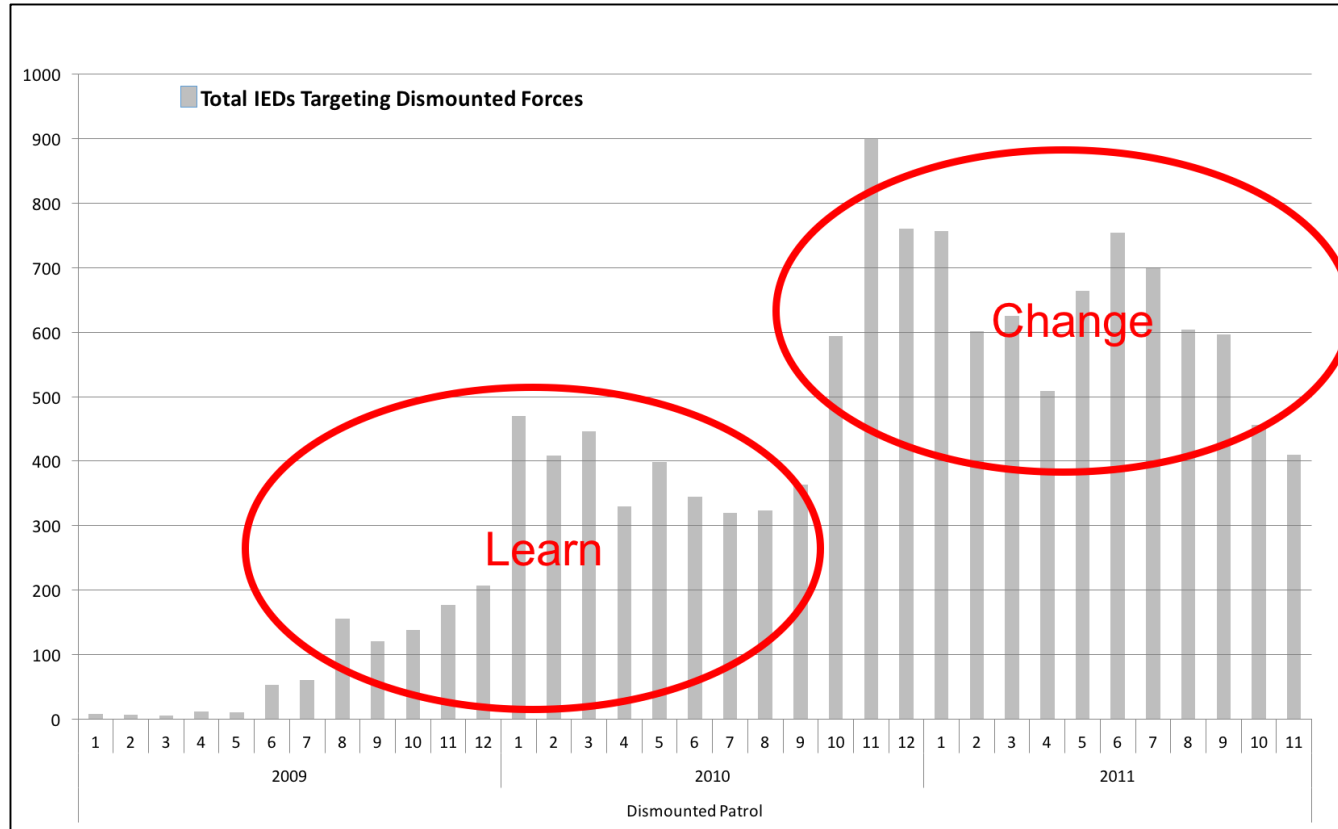
Insurgent Innovation Cycle



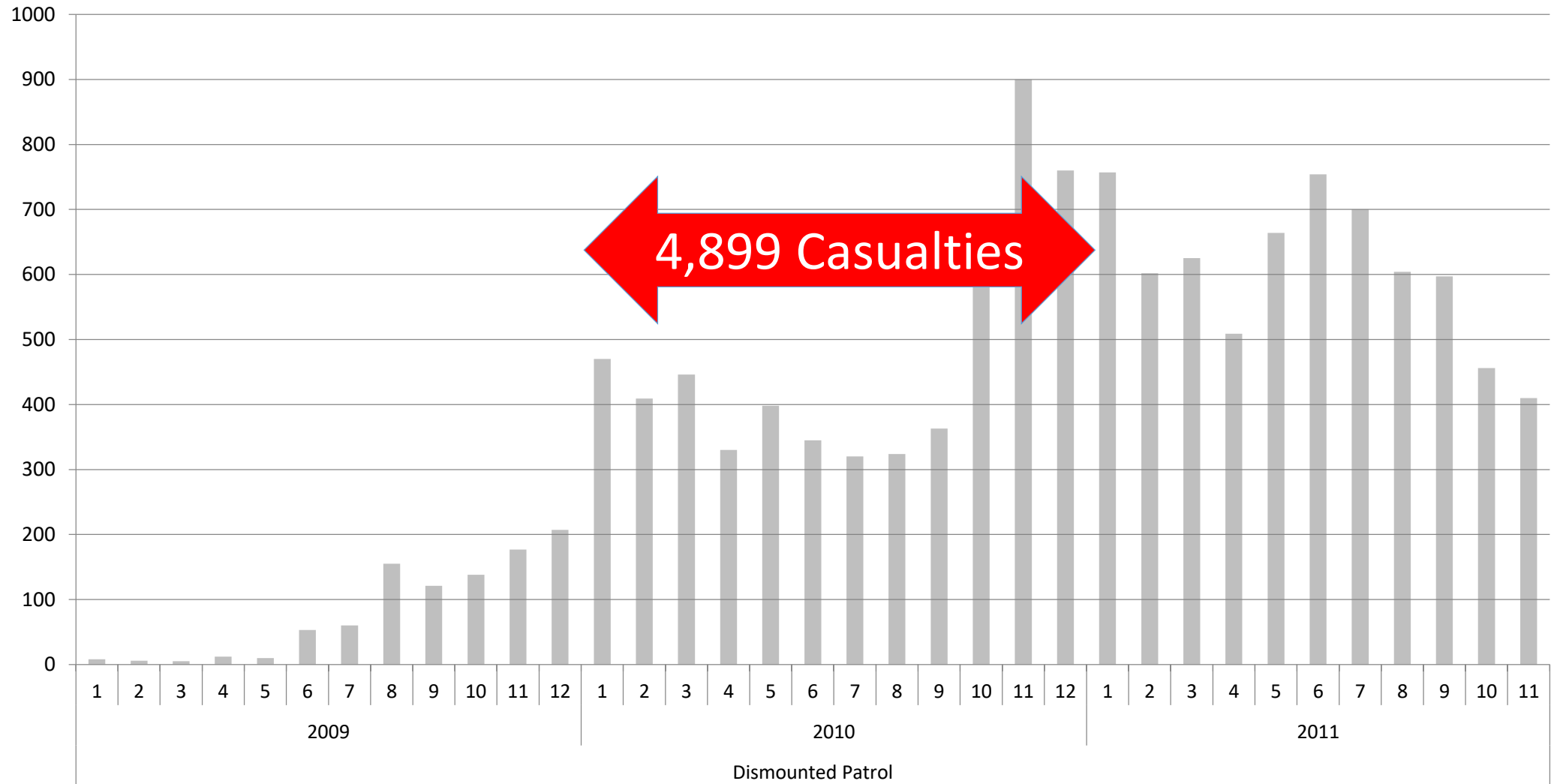
Our Innovation Cycle



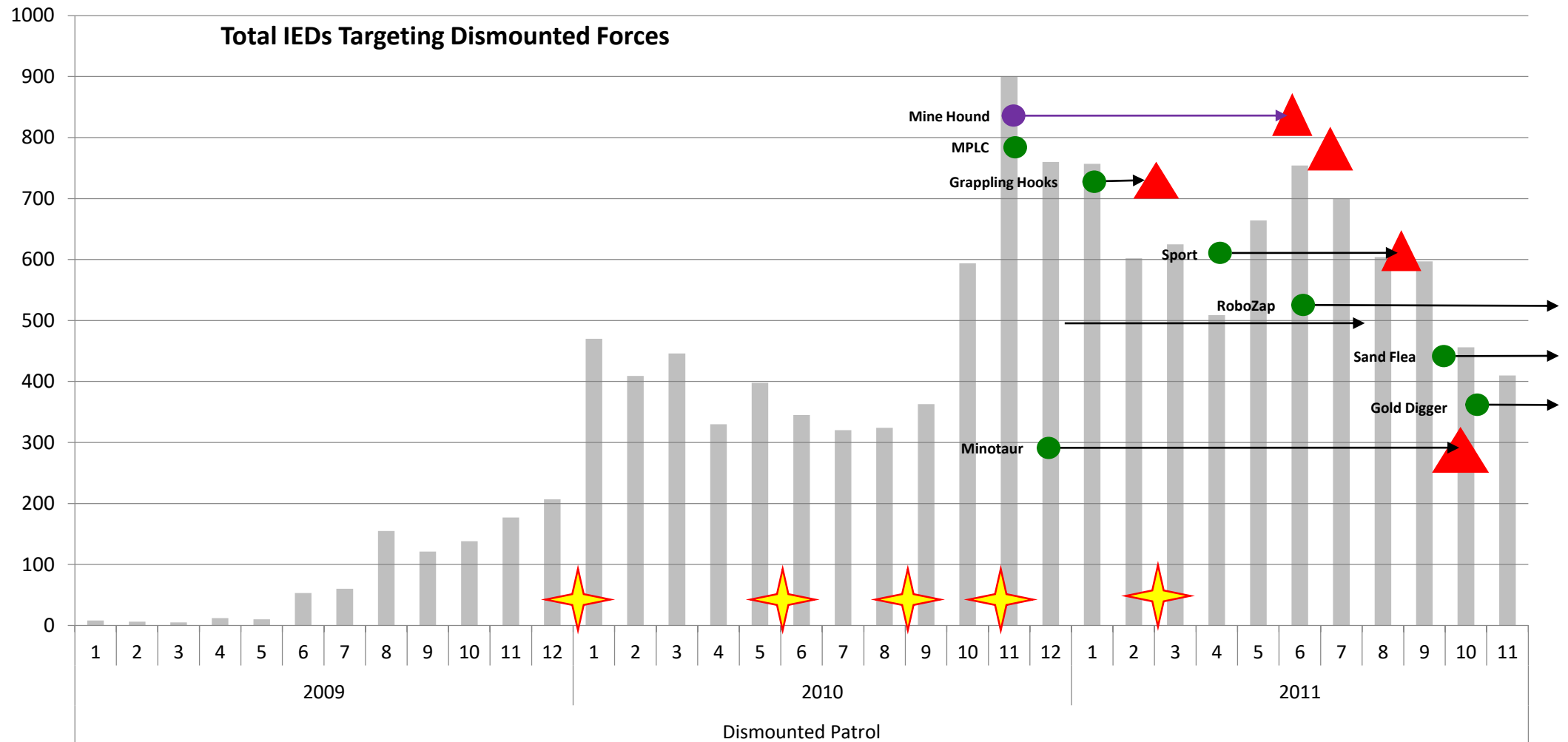
Speed is the new offset



And We Were Losing the Race



Solution Delivery Within Six Months



Man in the Arena

”It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat.”

President Theodore Roosevelt, “Citizenship in a Republic” – 1910 at The Sorbonne

Q & A

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