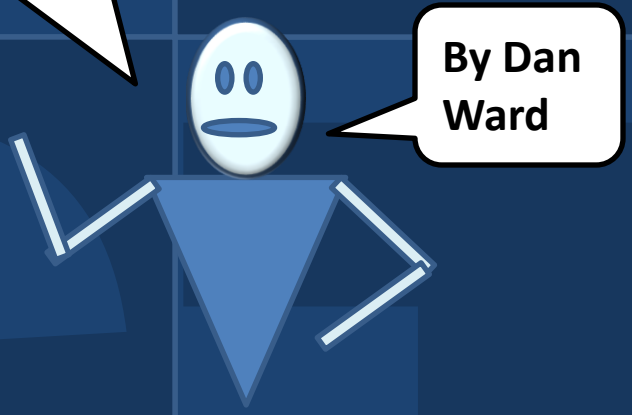
The Comic Guide To Improving Defense Acquisitions



My first memory of defense acquisitions is from the 80's.

$$$

$800 for a toilet seat?

Before I even knew the word *acquisitions*, I could tell something was funky.

I vaguely remember my high school history teacher saying something about General Washington's army not having shoes.

History, history, history…
Valley Forge… no shoes…
etc etc etc

I didn't know it at the time, but that was an acquisition story too.

Things have changed a lot since Valley Forge, but it's still easy to find stories about acquisition programs gone wrong.

Painfully easy.

GAO Reports

News Articles

For decades, huge overruns and endless delays seem to be the default outcome.

Spending a lot of time & money on complicated gear that doesn't work is apparently some weird kind of Best Practice.™

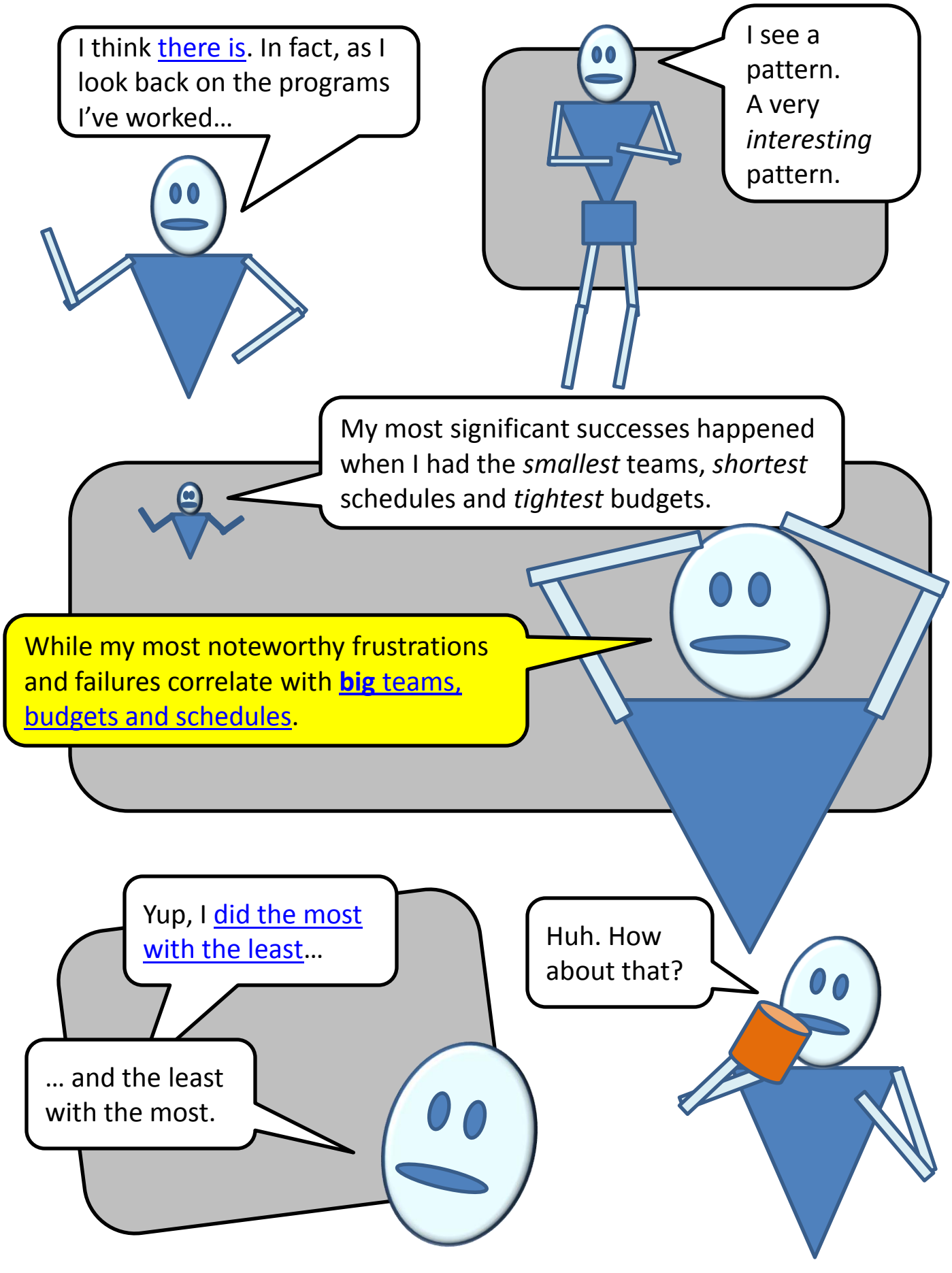
It often sounds like the huge cost, complexity and delays in military technology programs are inevitable.

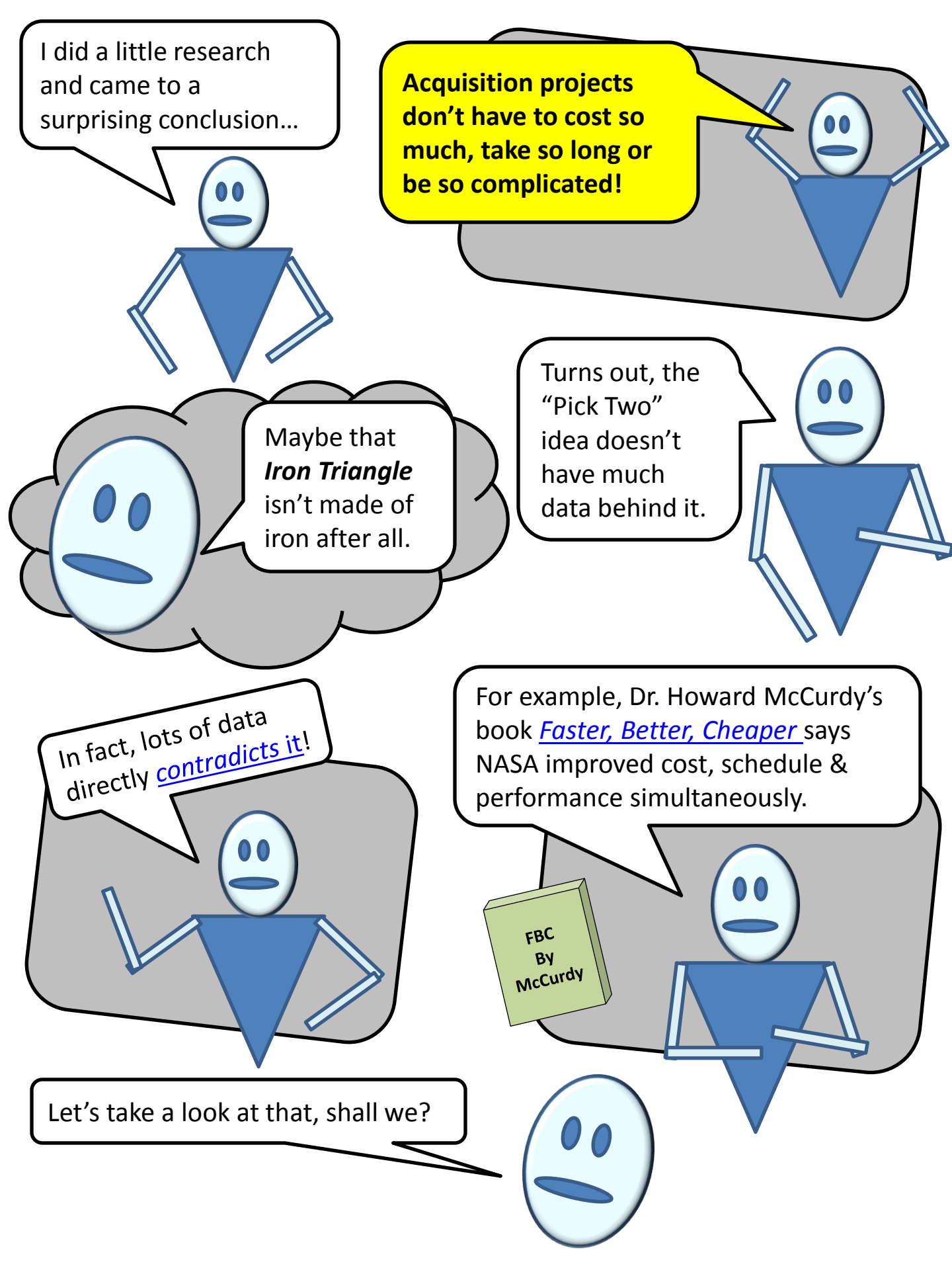
And then there's the whole **Iron Triangle "Pick Two"** thing.

People treat it as both self-evident and unavoidable.

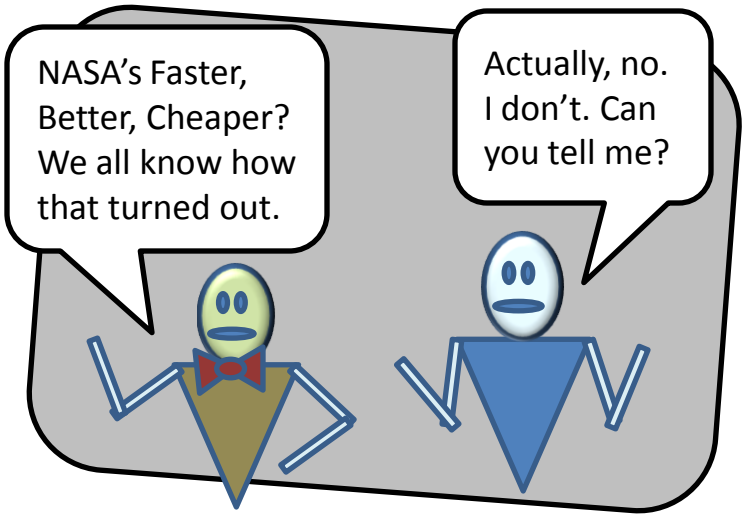
That's not a very encouraging situation.

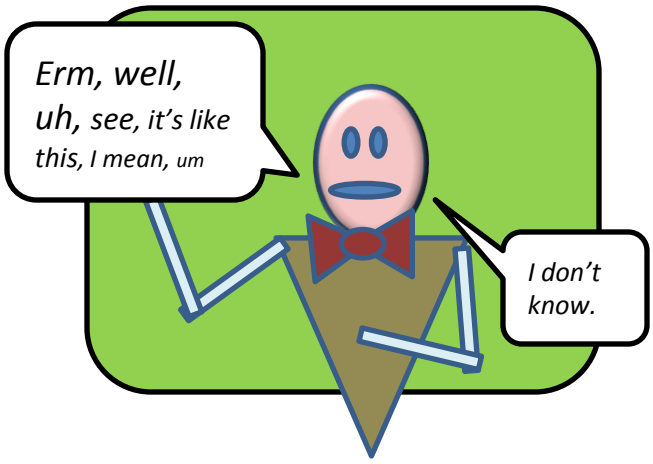
Is there another option?

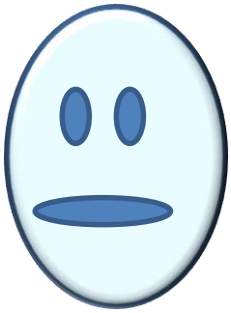

I think there is. In fact, as I look back on the programs I've worked…
I see a pattern. A very *interesting* pattern.
My most significant successes happened when I had the *smallest* teams, *shortest* schedules and *tightest* budgets.
While my most noteworthy frustrations and failures correlate with **big** teams, budgets and schedules.
Yup, I did the most with the least…
… and the least with the most.
Huh. How about that?


I did a little research and came to a surprising conclusion…
Acquisition projects don't have to cost so much, take so long or be so complicated!
Maybe that *Iron Triangle* isn't made of iron after all.
Turns out, the "Pick Two" idea doesn't have much data behind it.
In fact, lots of data directly contradicts it!
For example, Dr. Howard McCurdy's book Faster, Better, Cheaper says NASA improved cost, schedule & performance simultaneously.
FBC By McCurdy
Let's take a look at that, shall we?

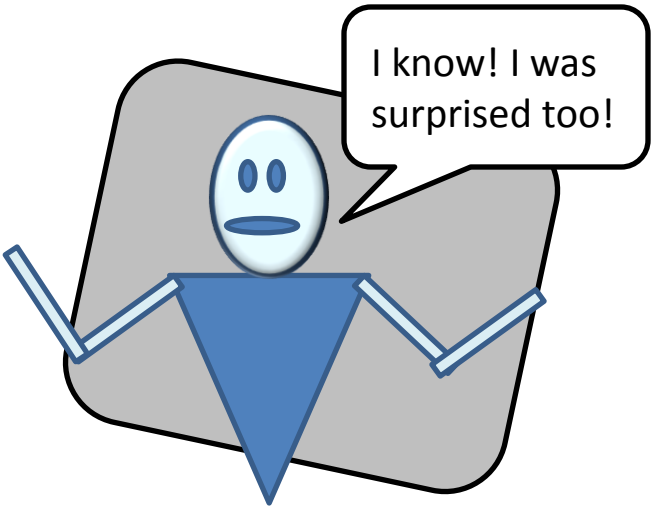
My investigation into *Faster, Better, Cheaper* began innocently enough…

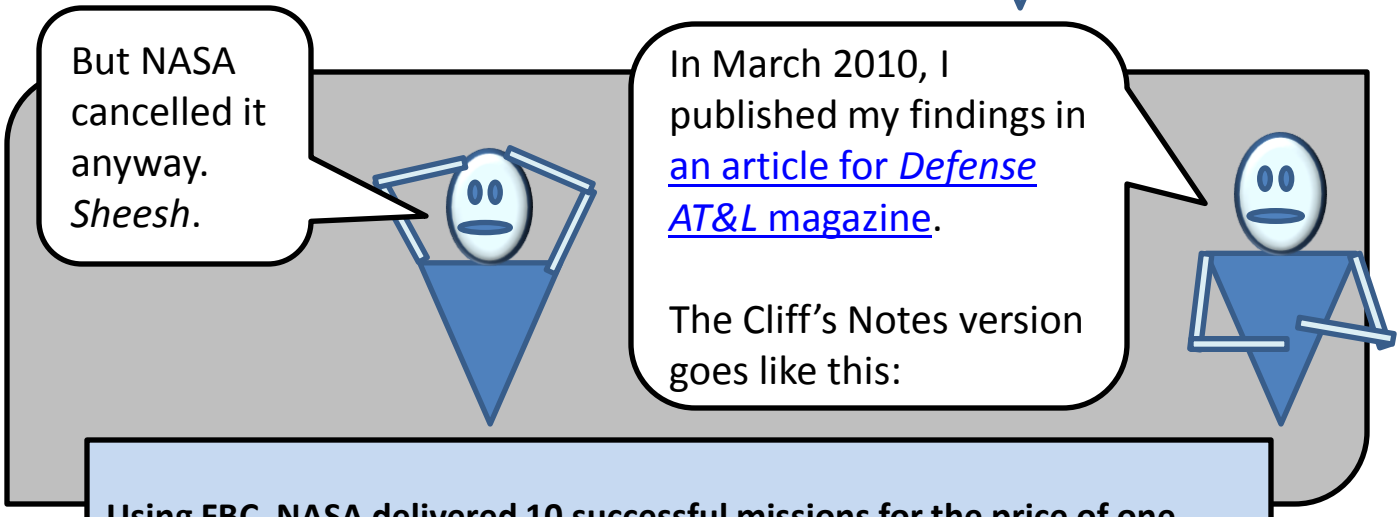






So I did a little digging. It turns out FBC was a [major success](#).





Using FBC, NASA delivered 10 successful missions for the price of one.

When it comes to Faster, Better, Cheaper, there is no need to "Pick Two."

If FBC worked for NASA, maybe the DoD could do it too.

It's worth a try…

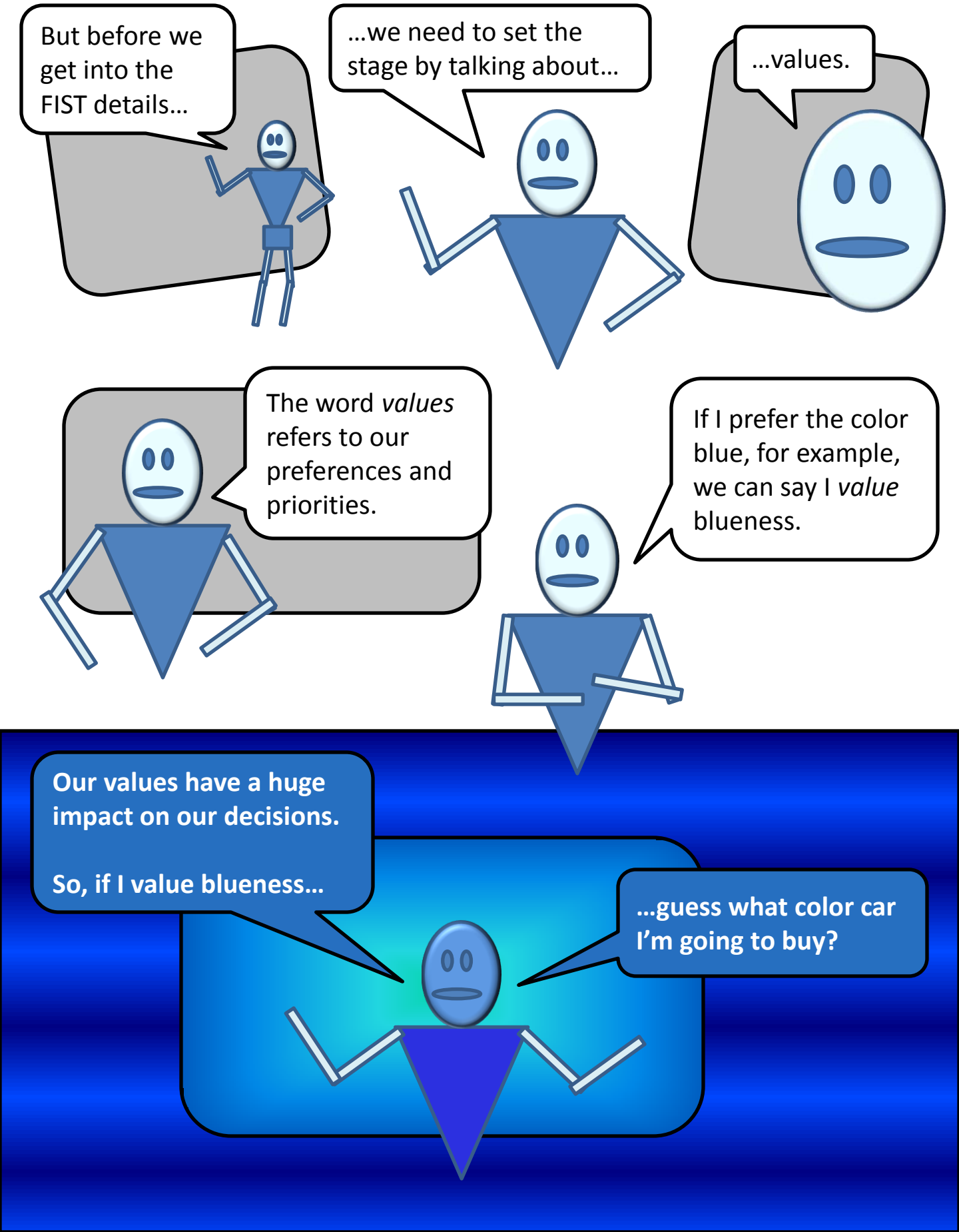
Now, I didn't investigate FBC out of idle curiosity.

Although I'm a big fan of doing that!

This research was part of a larger project called **FIST**.

FIST stands for Fast, Inexpensive, Simple, Tiny.

I began developing the FIST concept in 2004, as I looked at ways to improve acquisition outcomes.


But before we get into the FIST details…
…we need to set the stage by talking about…
…values.
The word *values* refers to our preferences and priorities.
If I prefer the color blue, for example, we can say I *value* blueness.
Our values have a huge impact on our decisions.
So, if I value blueness…
…guess what color car I'm going to buy?

Of course, that's a superficial example. Let's go deeper.

What if I value *complexity* instead of blueness?

What decisions will I make if I see complexity as a sign of sophistication?

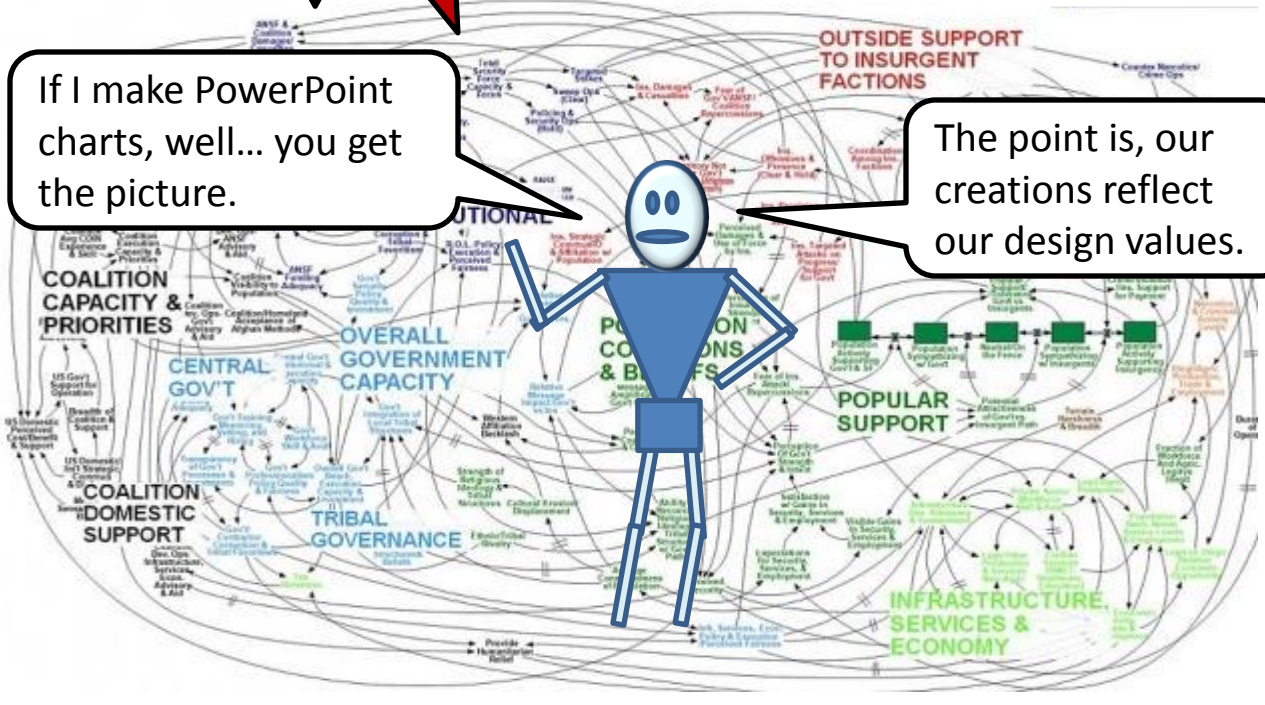
If I think complexity is a desirable attribute, a sign of goodness…

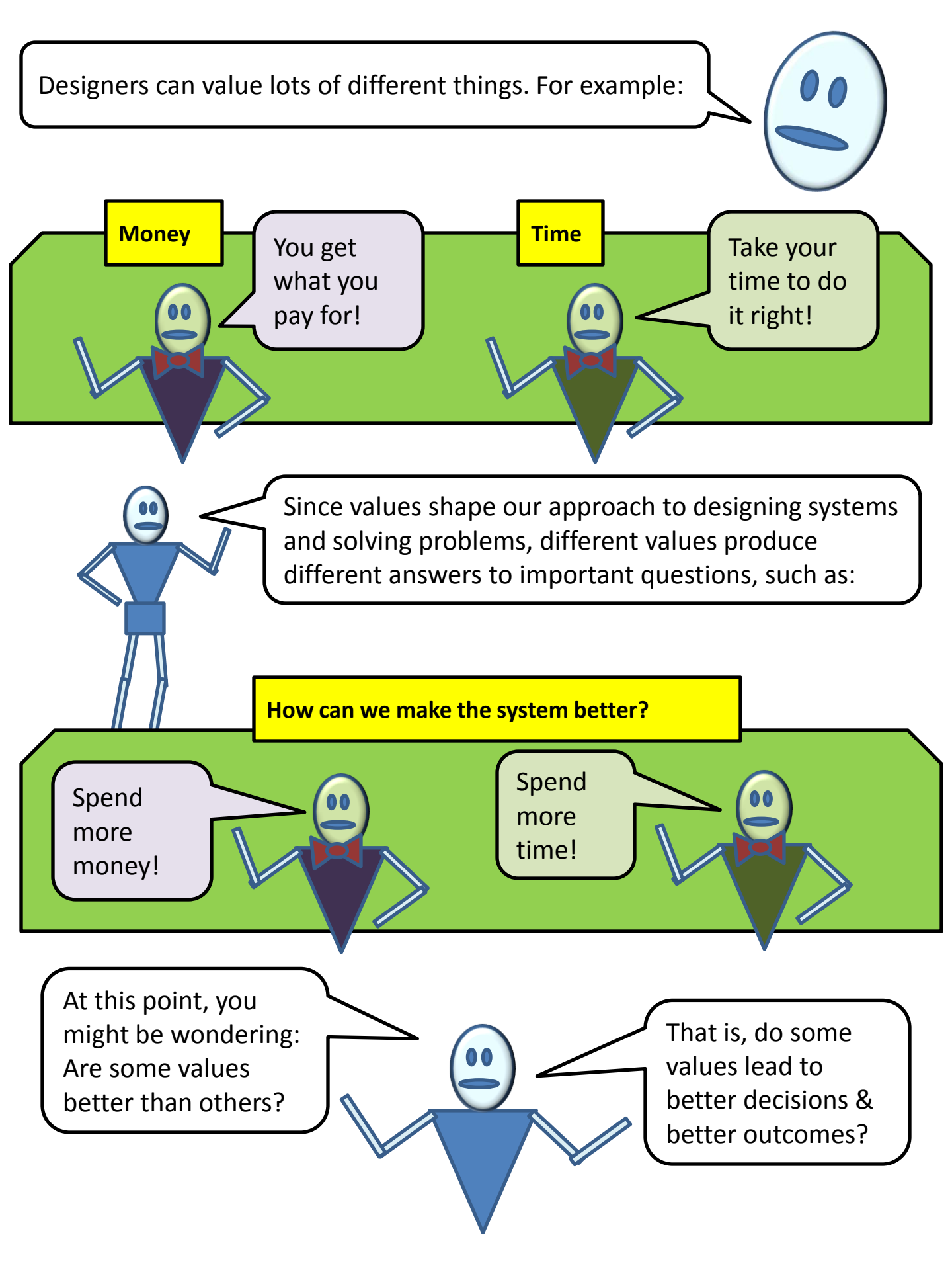
I'd buy the most complex stuff I can afford.

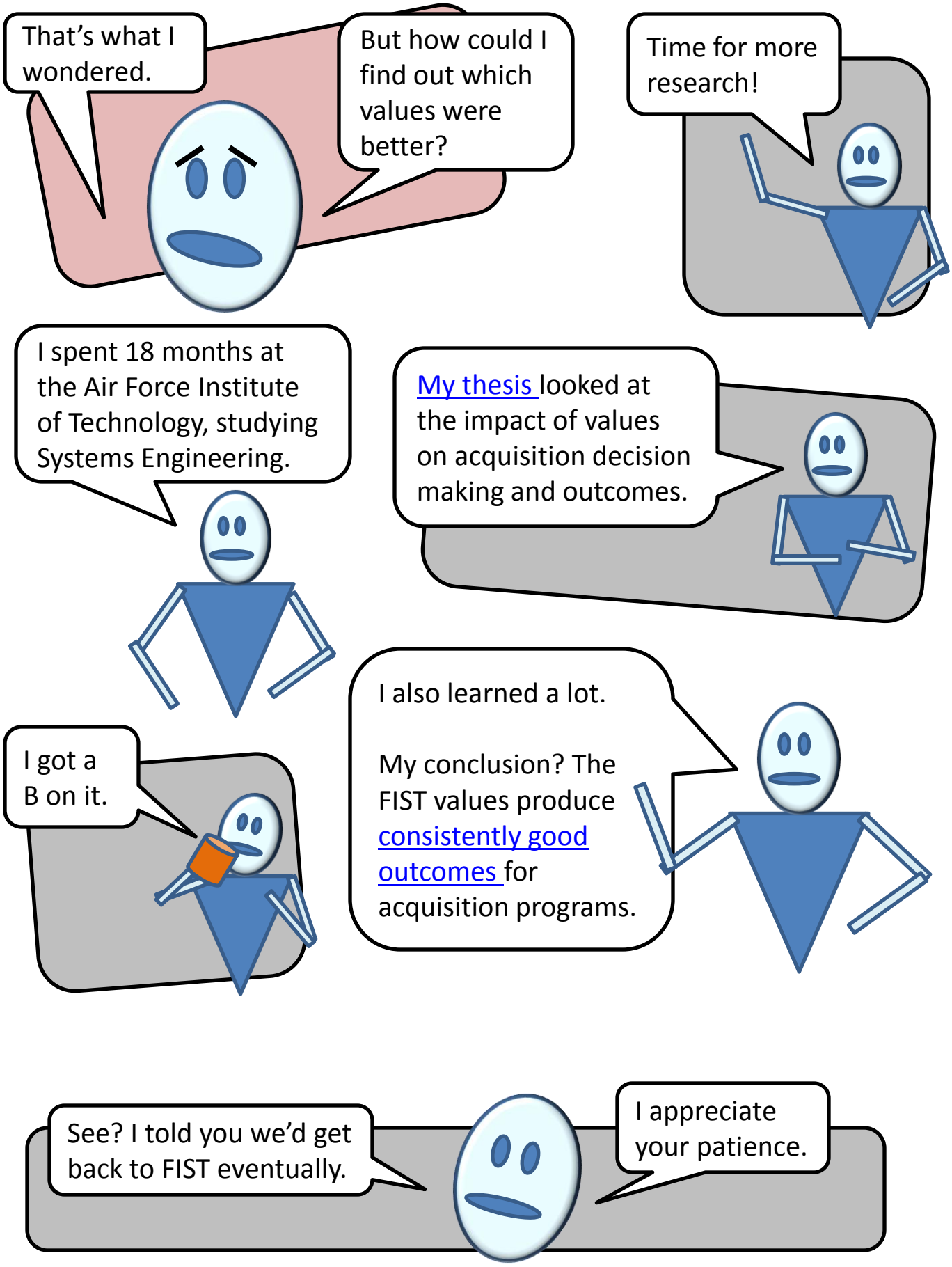
If I'm a designer or engineer, I'd make very complex stuff and think I've done good work.

If I make PowerPoint charts, well… you get the picture.

The point is, our creations reflect our design values.




Designers can value lots of different things. For example:
Money
You get what you pay for!
Time
Take your time to do it right!
Since values shape our approach to designing systems and solving problems, different values produce different answers to important questions, such as:
How can we make the system better?
Spend more money!
Spend more time!
At this point, you might be wondering: Are some values better than others?
That is, do some values lead to better decisions & better outcomes?


That's what I wondered.
But how could I find out which values were better?
Time for more research!
I spent 18 months at the Air Force Institute of Technology, studying Systems Engineering.
My thesis looked at the impact of values on acquisition decision making and outcomes.
I got a B on it.
I also learned a lot.
My conclusion? The FIST values produce consistently good outcomes for acquisition programs.
See? I told you we'd get back to FIST eventually.
I appreciate your patience.

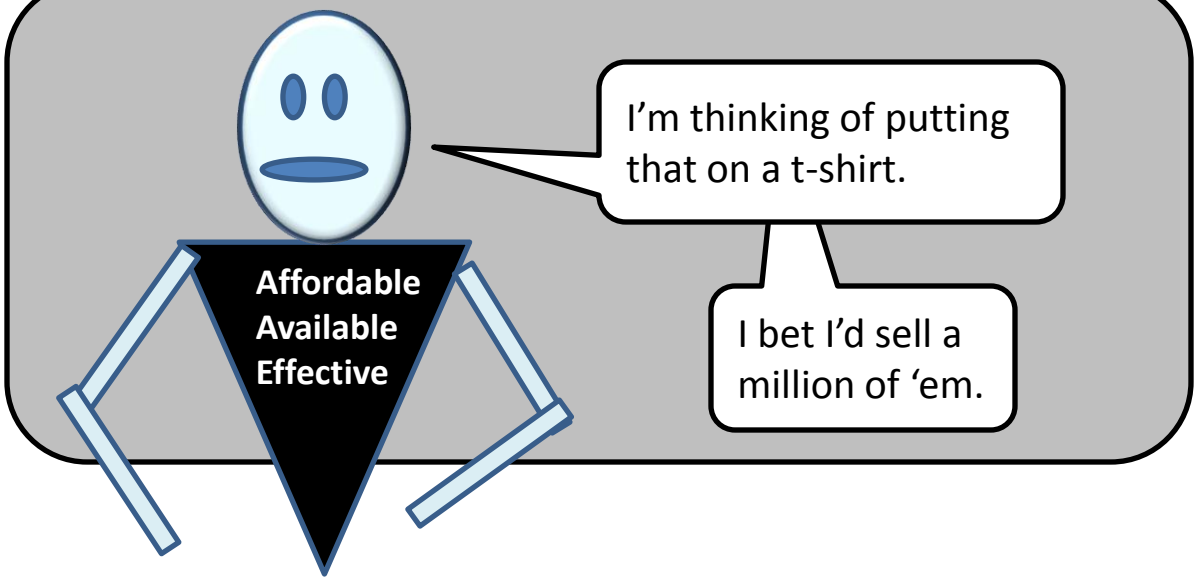
But here's the thing – because values shape our definition of "goodness" …

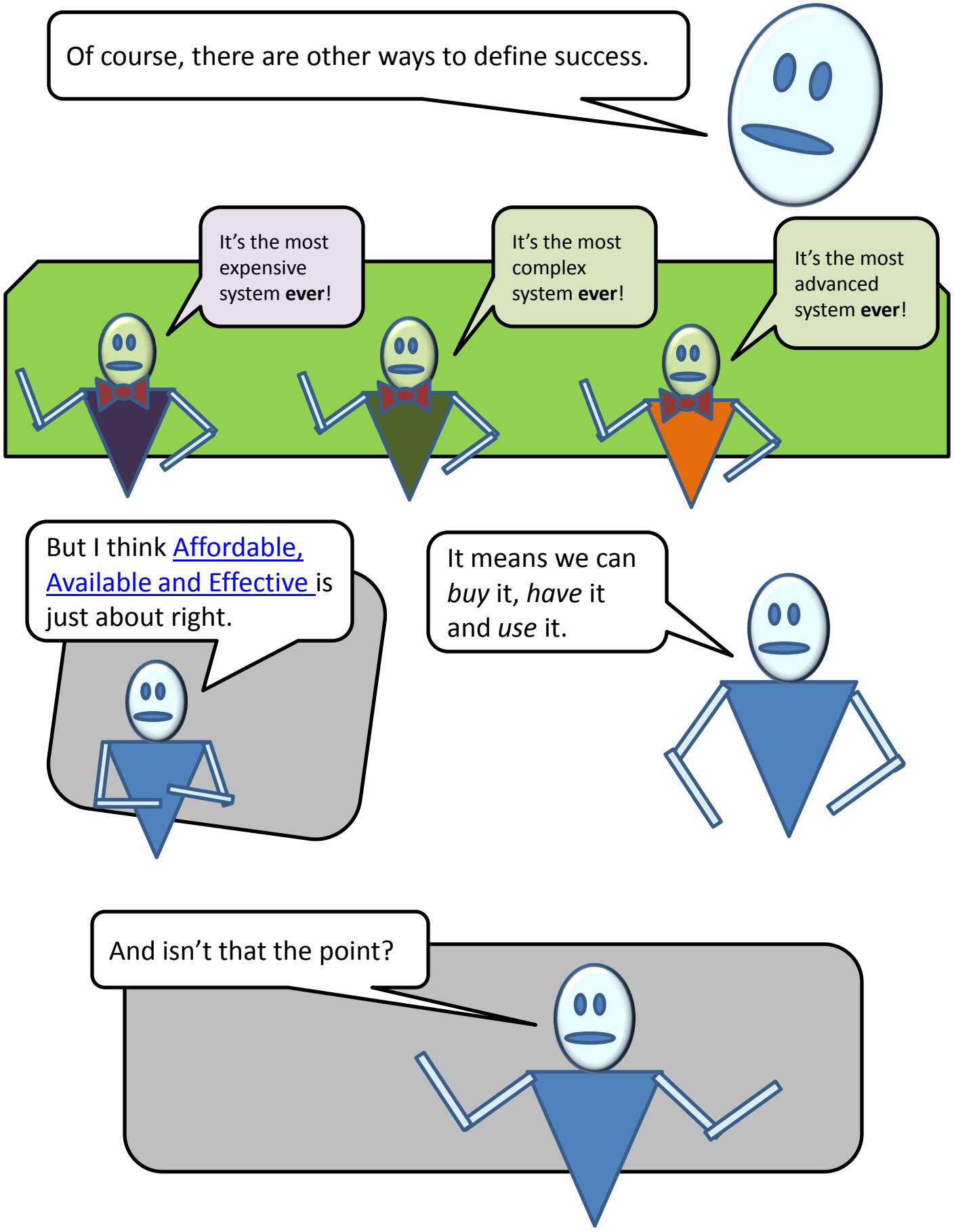
…when I say FIST produces *good* systems, I might just be saying FIST leads to a particular type of system which I believe, a priori, to be "good." Oops!

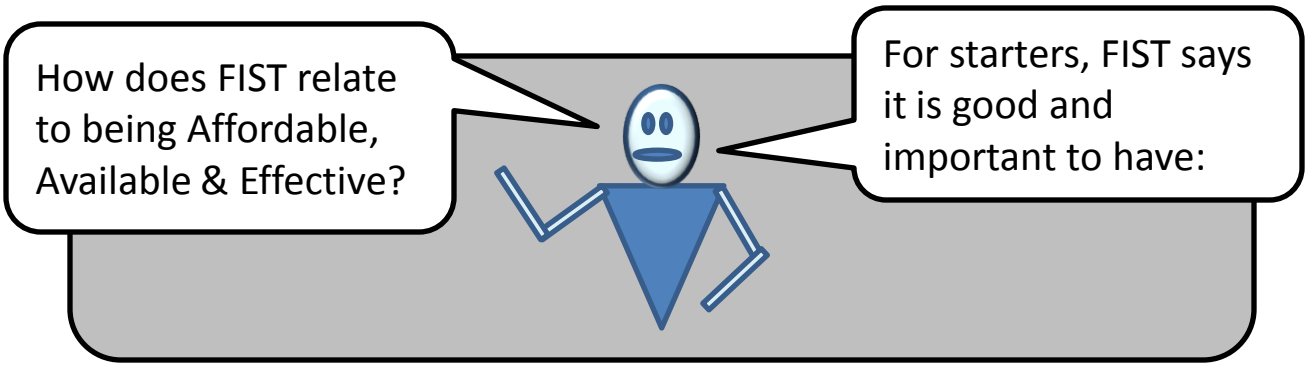
So… maybe I should explain what I mean by "good outcomes."

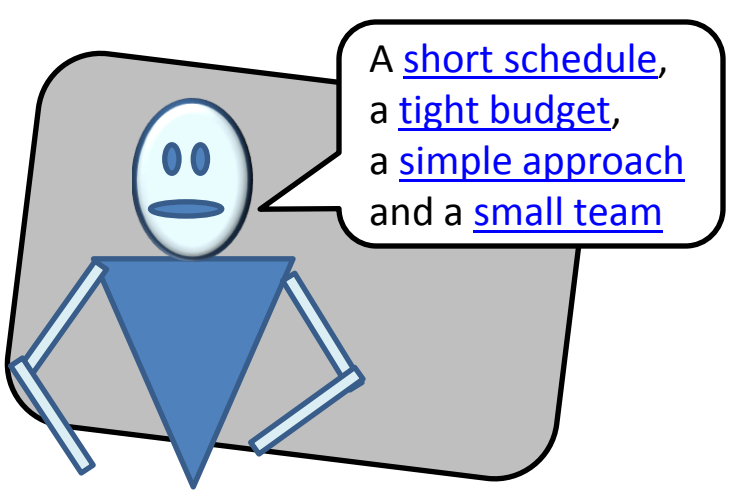
The definition I came up with goes like this:

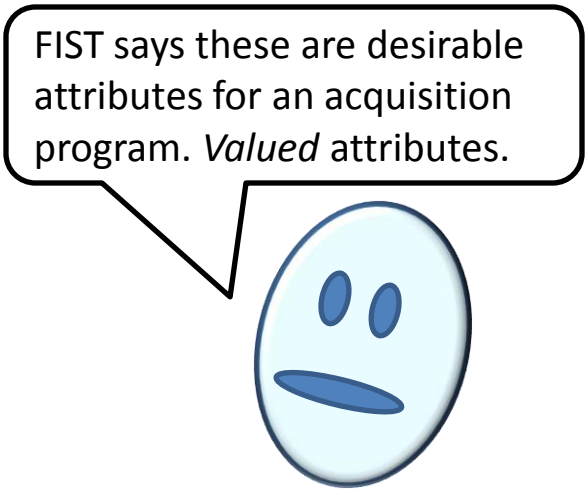
Delivering an *affordable* system that's *available* when needed and *effective* when used.

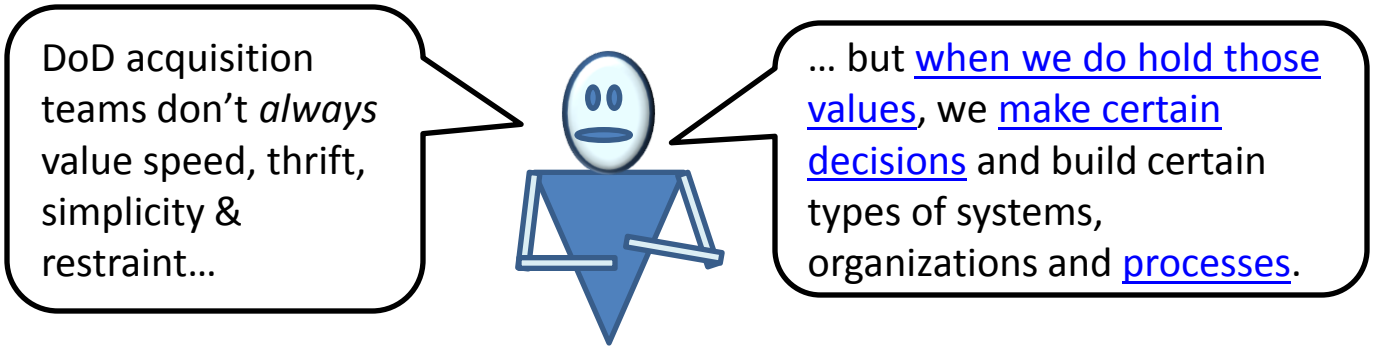


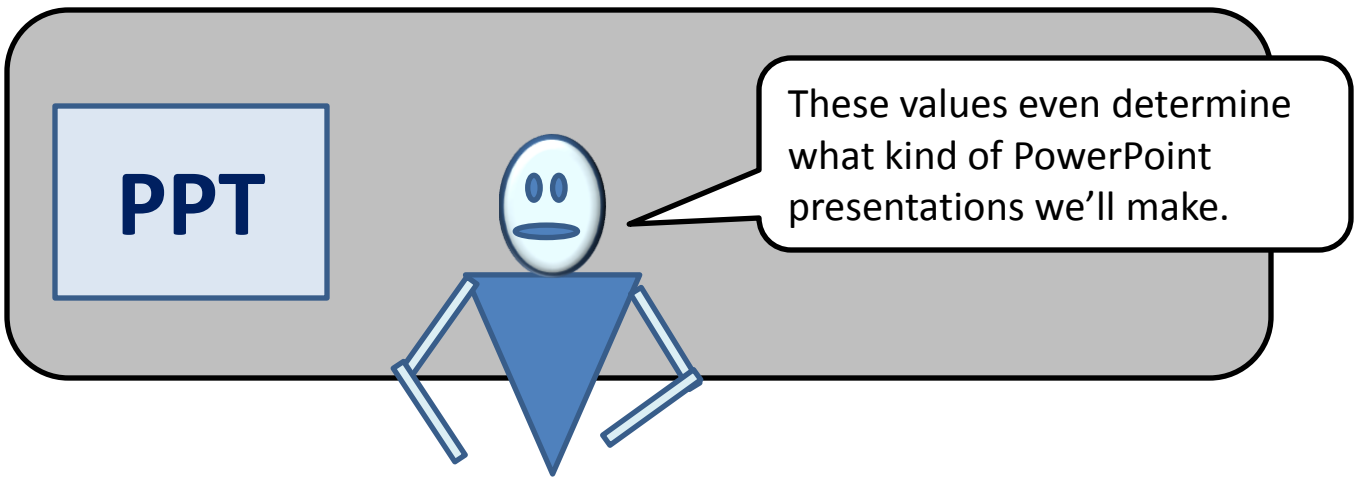

Of course, there are other ways to define success.
It's the most expensive system **ever**!
It's the most complex system **ever**!
It's the most advanced system **ever**!
But I think Affordable, Available and Effective is just about right.
It means we can *buy* it, *have* it and *use* it.
And isn't that the point?


How does FIST relate to being Affordable, Available & Effective?
For starters, FIST says it is good and important to have:


A short schedule, a tight budget, a simple approach and a small team


FIST says these are desirable attributes for an acquisition program. *Valued* attributes.


DoD acquisition teams don't *always* value speed, thrift, simplicity & restraint…
… but when we do hold those values, we make certain decisions and build certain types of systems, organizations and processes.


PPT
These values even determine what kind of PowerPoint presentations we'll make.

It turns out, the systems we build when guided by FIST are pretty darn good.

And by that I mean Affordable, Available and Effective.™

Order your t-shirts now. Just $19.99. Operators are standing by.

Ahem. I mean, that's what I found in my research.

Pierre Sprey says the same thing. He points out that war-winning systems tend to be simple…

… and less expensive systems tend to out-perform more expensive systems.

There's also research by The Standish Group…

And the Army's "Decker-Wagner" Report…

THE STANDISH GROUP

"… smaller projects are consistently more successful because of reduced confusion, complexity and cost."

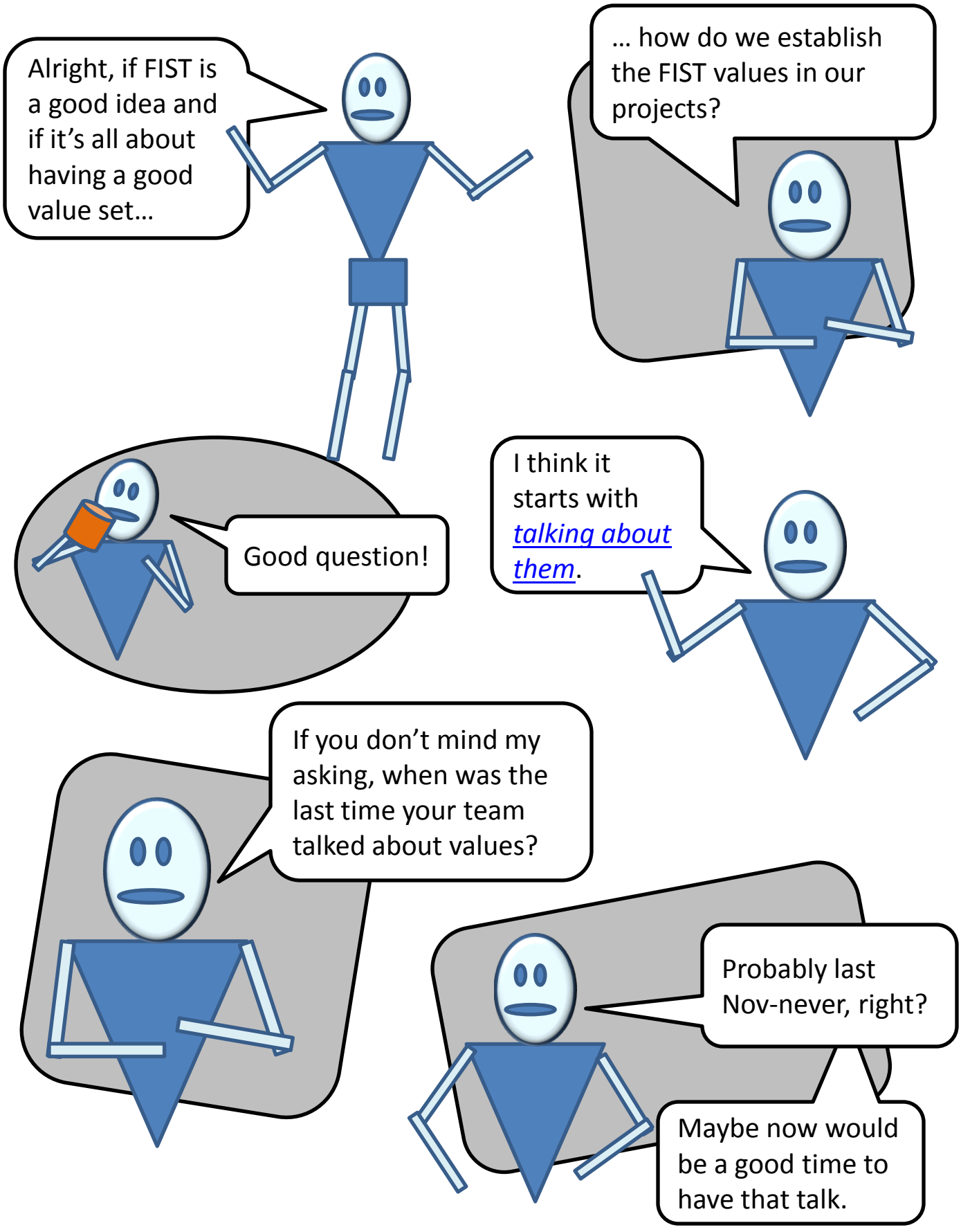
"…today's Army is the best equipped in the world. To a large degree this can be attributed to… rapid acquisition processes employed during the last nine years."

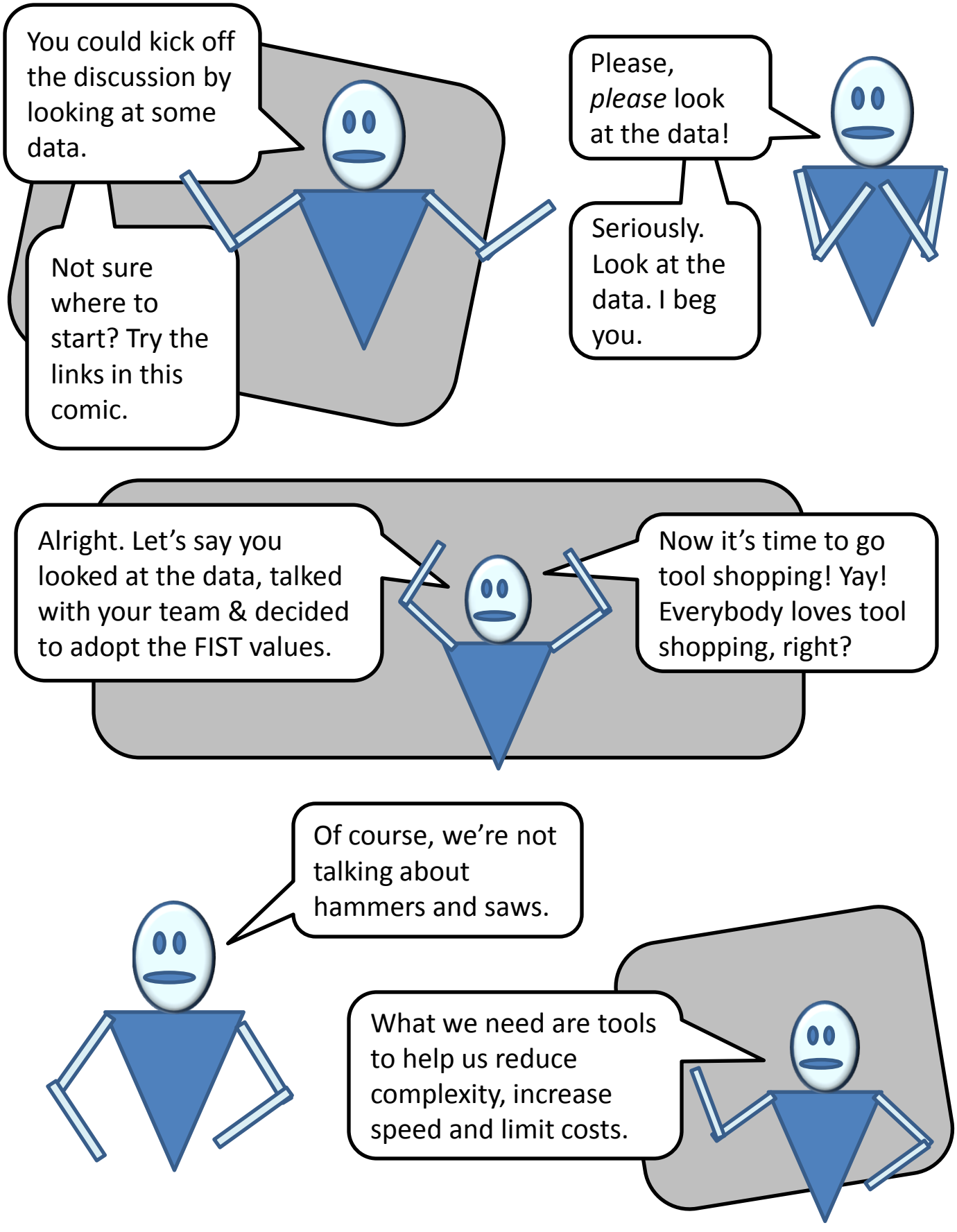
The list goes on, but you get the picture.

Lots of data shows good things happen when we value speed, thrift, simplicity and restraint.

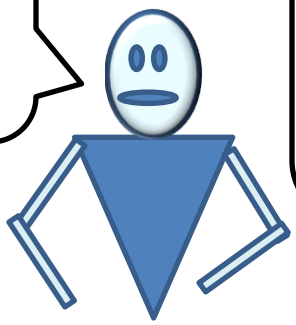
In contrast, if we count on big budgets & long schedules to make things better…

…we end up with seriously bad outcomes. Depending on how you define "bad," of course.

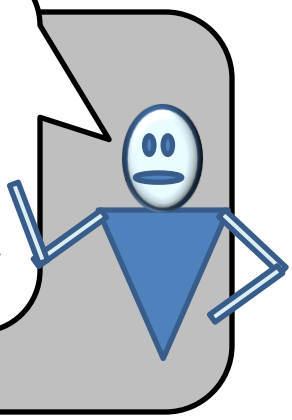

Alright, if FIST is a good idea and if it's all about having a good value set…
… how do we establish the FIST values in our projects?
Good question!
I think it starts with talking about them.
If you don't mind my asking, when was the last time your team talked about values?
Probably last Nov-never, right?
Maybe now would be a good time to have that talk.


You could kick off the discussion by looking at some data.
Not sure where to start? Try the links in this comic.
Please, *please* look at the data!
Seriously. Look at the data. I beg you.
Alright. Let's say you looked at the data, talked with your team & decided to adopt the FIST values.
Now it's time to go tool shopping! Yay! Everybody loves tool shopping, right?
Of course, we're not talking about hammers and saws.
What we need are tools to help us reduce complexity, increase speed and limit costs.

For example, to manage complexity, you could consider using [The Simplicity Cycle].

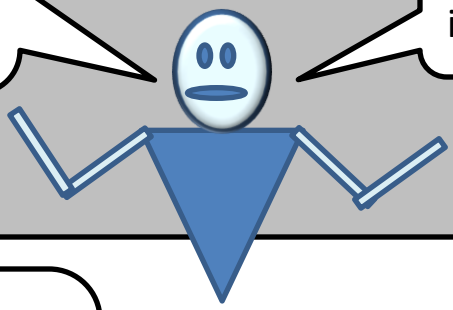


This little diagram lays out a roadmap for producing elegant, streamlined designs and avoiding complexity-related pitfalls.

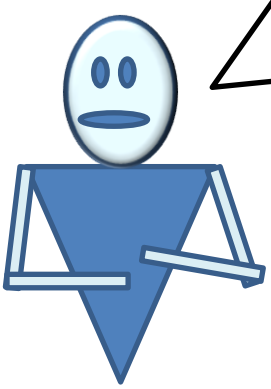


It also provides a visual vocabulary to help us talk about this stuff with the rest of the team.

That's kinda important.

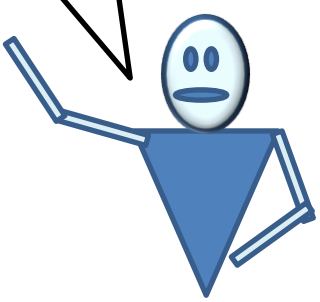


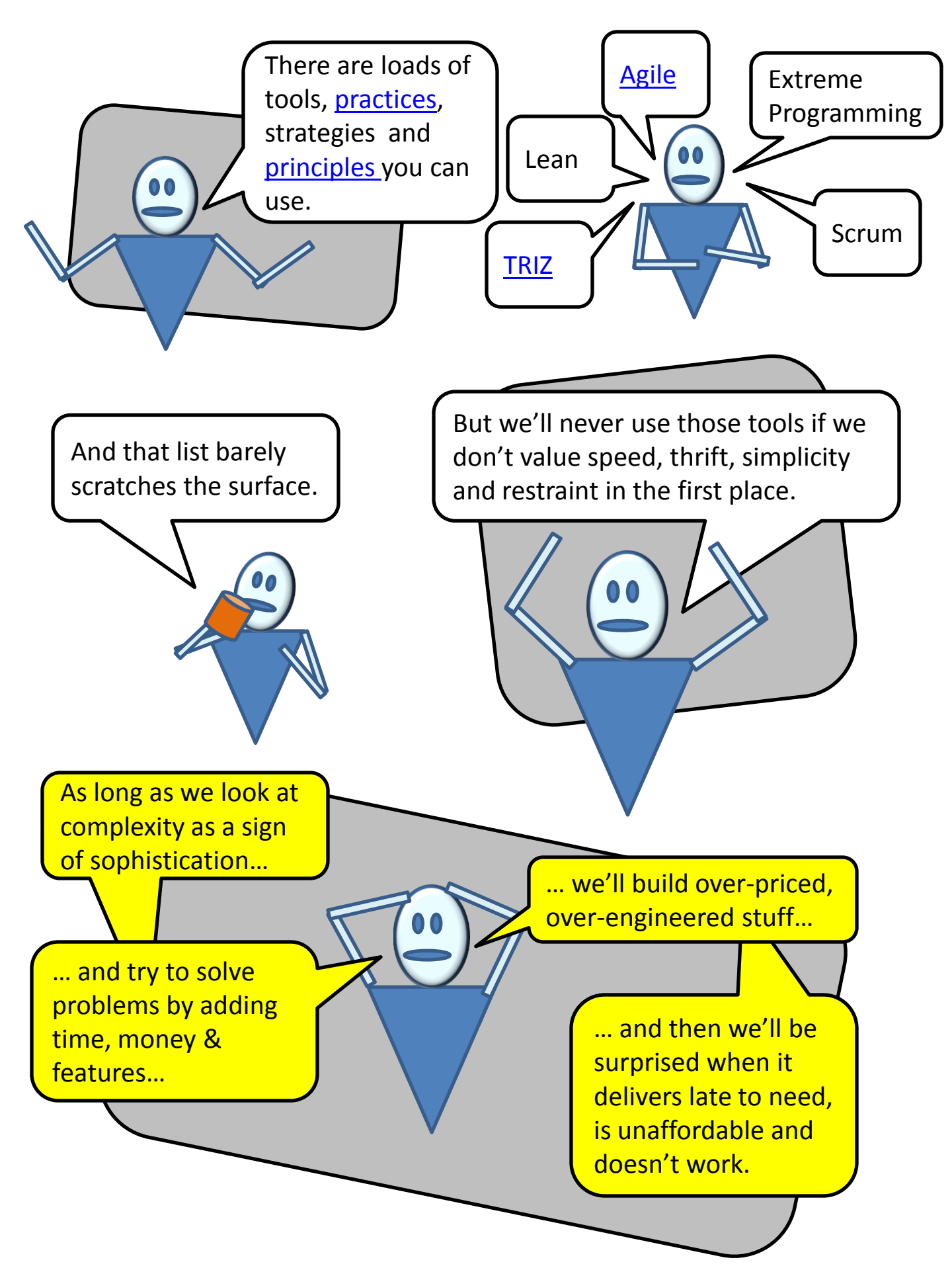
But the *Simplicity Cycle* is just one part of the big stack of resources.

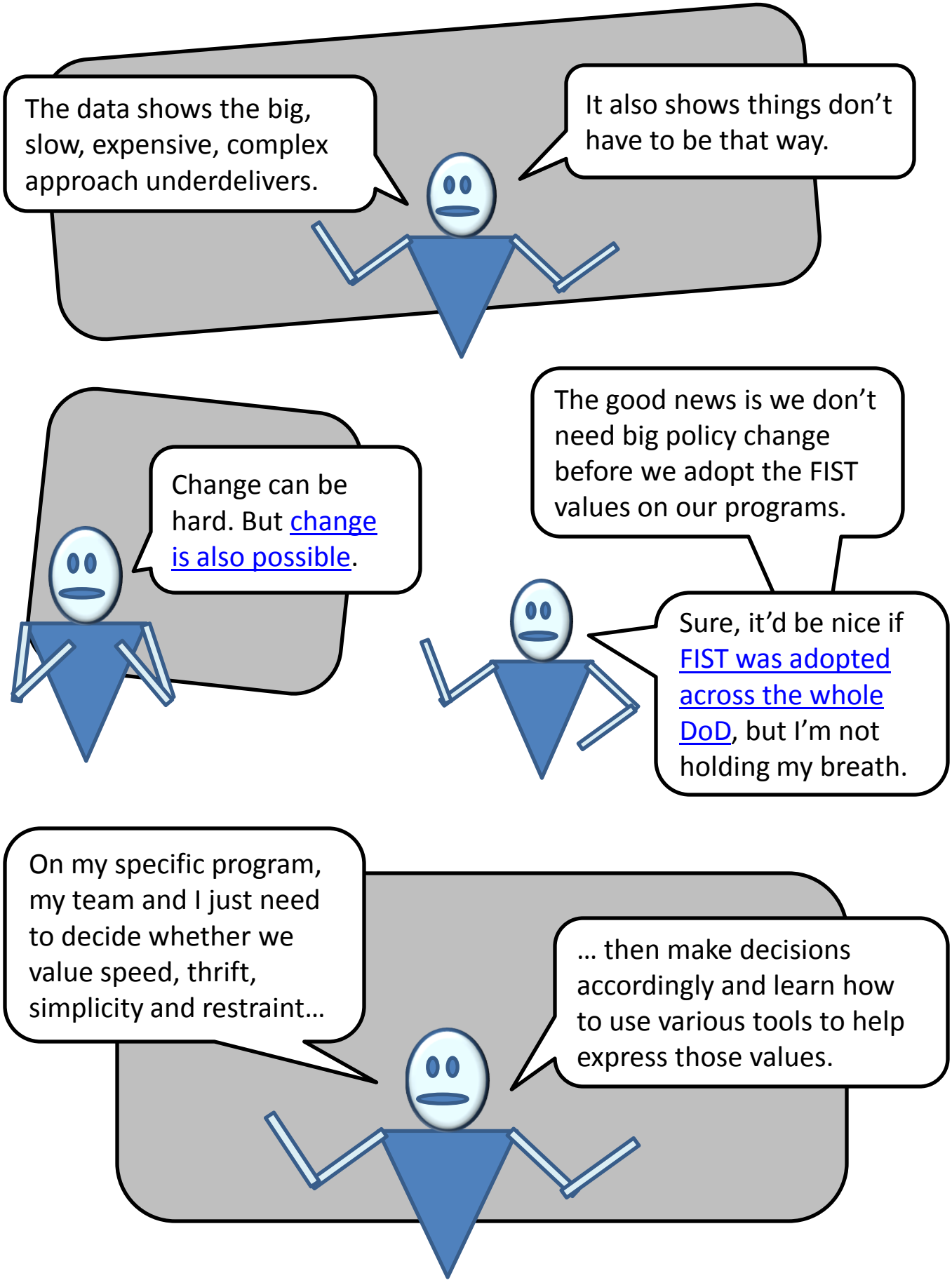


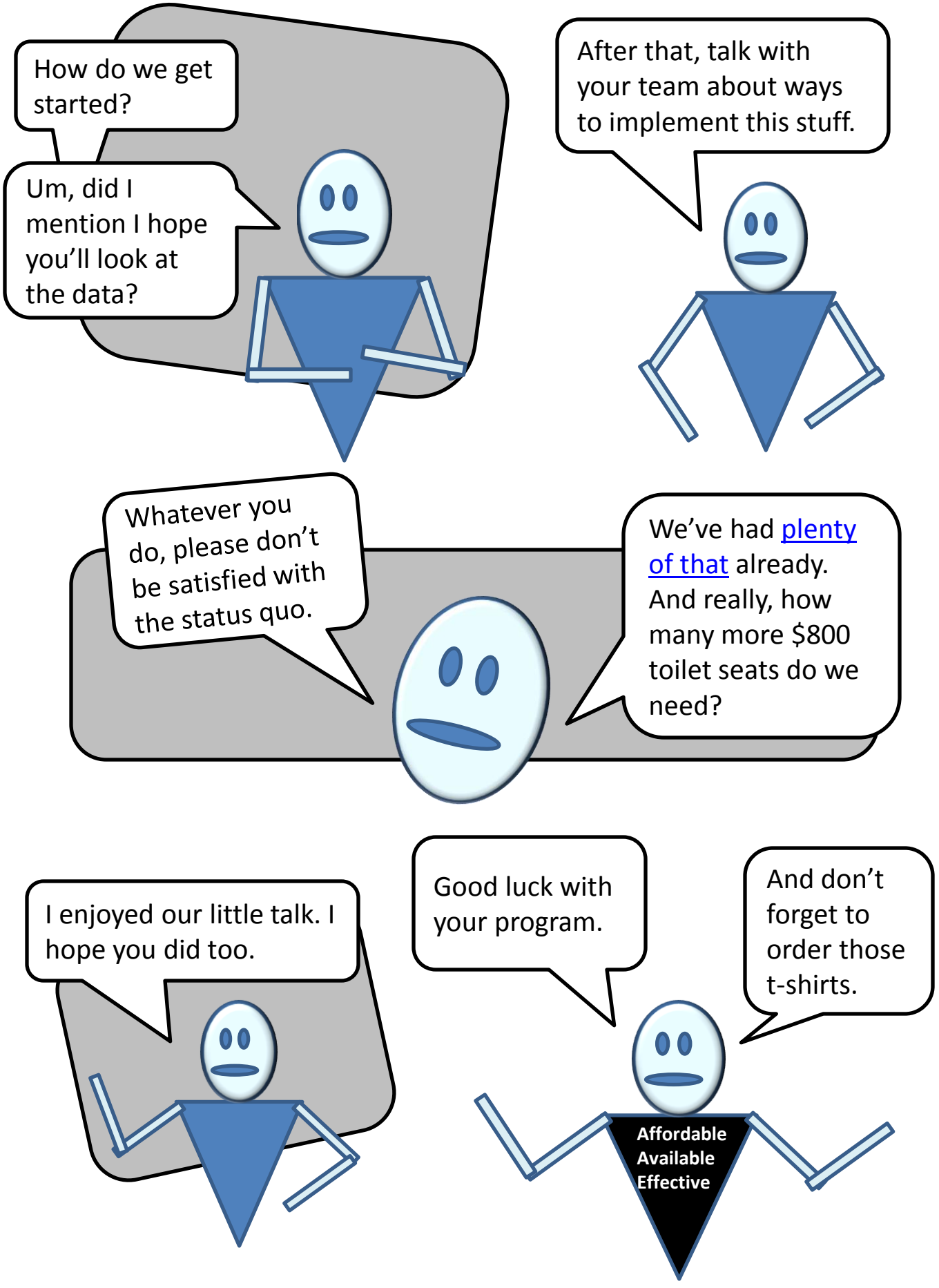
You can also tap into [academic research], [short articles], [long reports], [sci-fi stories], & even a couple [comics] with better art than this one.

MUCH better art.




There are loads of tools, practices, strategies and principles you can use.
Agile
Extreme Programming
Lean
Scrum
TRIZ
And that list barely scratches the surface.
But we'll never use those tools if we don't value speed, thrift, simplicity and restraint in the first place.
As long as we look at complexity as a sign of sophistication…
… we'll build over-priced, over-engineered stuff…
… and try to solve problems by adding time, money & features…
… and then we'll be surprised when it delivers late to need, is unaffordable and doesn't work.


The data shows the big, slow, expensive, complex approach underdelivers.
It also shows things don't have to be that way.
Change can be hard. But change is also possible.
The good news is we don't need big policy change before we adopt the FIST values on our programs.
Sure, it'd be nice if FIST was adopted across the whole DoD, but I'm not holding my breath.
On my specific program, my team and I just need to decide whether we value speed, thrift, simplicity and restraint…
… then make decisions accordingly and learn how to use various tools to help express those values.


How do we get started?
Um, did I mention I hope you'll look at the data?
After that, talk with your team about ways to implement this stuff.
Whatever you do, please don't be satisfied with the status quo.
We've had plenty of that already. And really, how many more $800 toilet seats do we need?
I enjoyed our little talk. I hope you did too.
Good luck with your program.
And don't forget to order those t-shirts.
Affordable
Available
Effective