Cybersecurity

Richard Hale

Part 1...

Some Important Goals

Dependable Mission Execution in the Face of Cyberwarfare . . .

. . . With Whatever Partners A Mission Requires

Safety

Hint ... Internet of Things

Better, Safer Sharing with ….

…Whatever Partners a Particular Mission Requires

Give Mission Commanders Better Freedom of Action in Cyberspace

Agile Technology Uptake

And Finally…
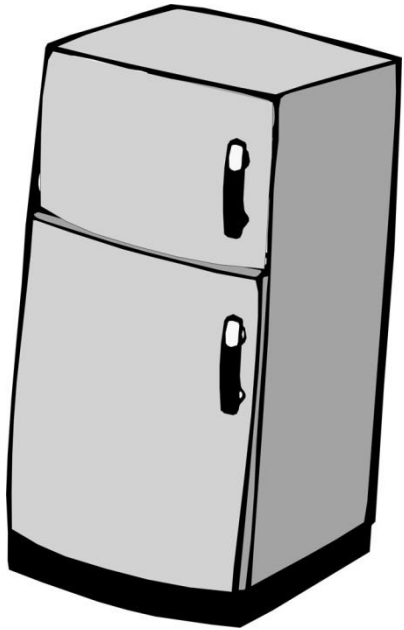
Keeping a Secret, When Necessary

Part 2

A Reality

Any Computer Can Be Cyber Attacked

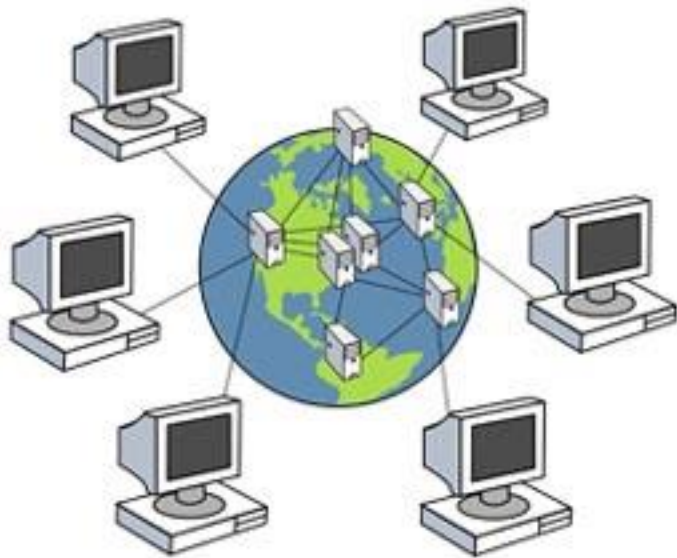# These Days Almost Everything Contains A Computer

… Or Many Computers

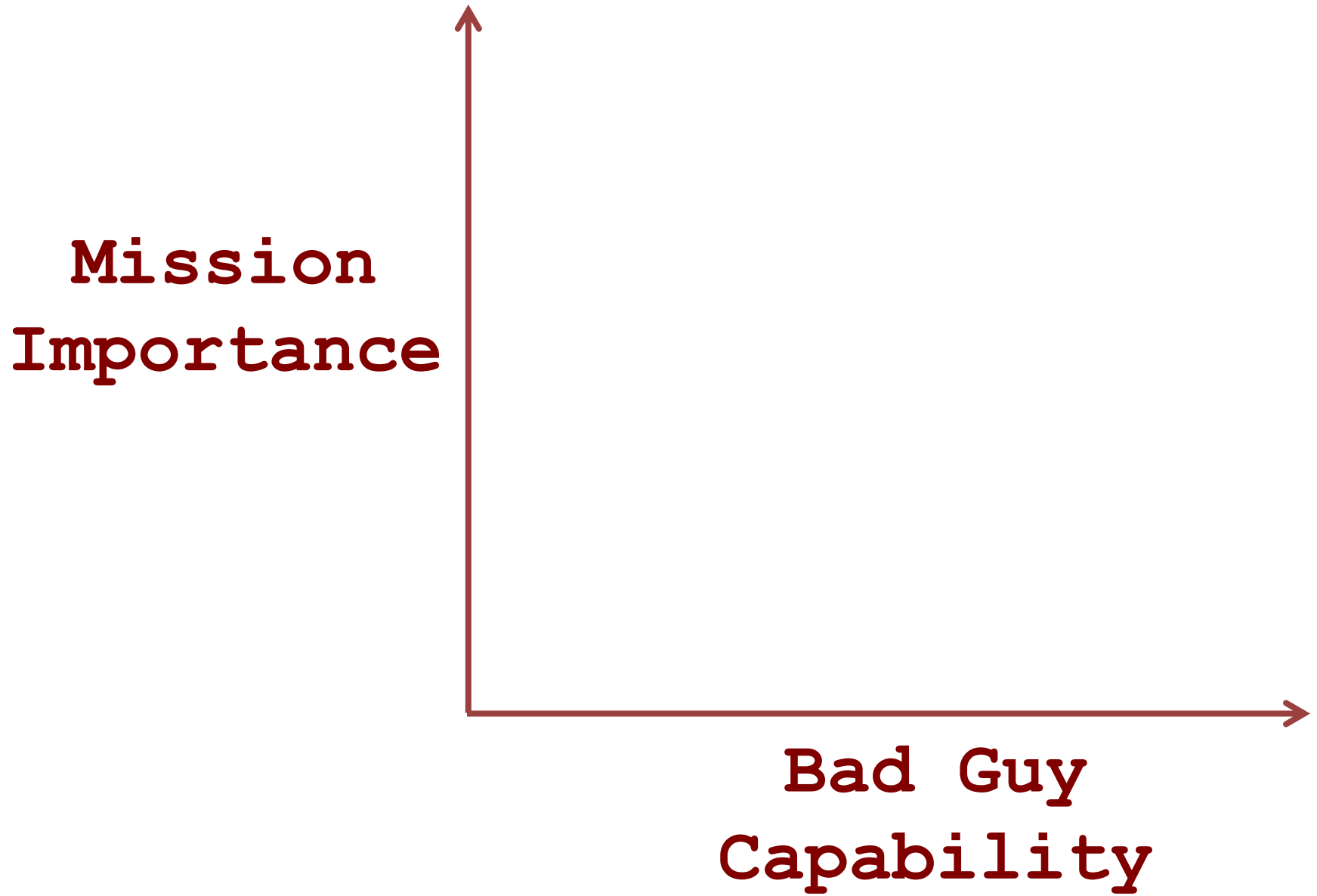# So, Every One of These Things With Computers Can Be Cyber Attacked
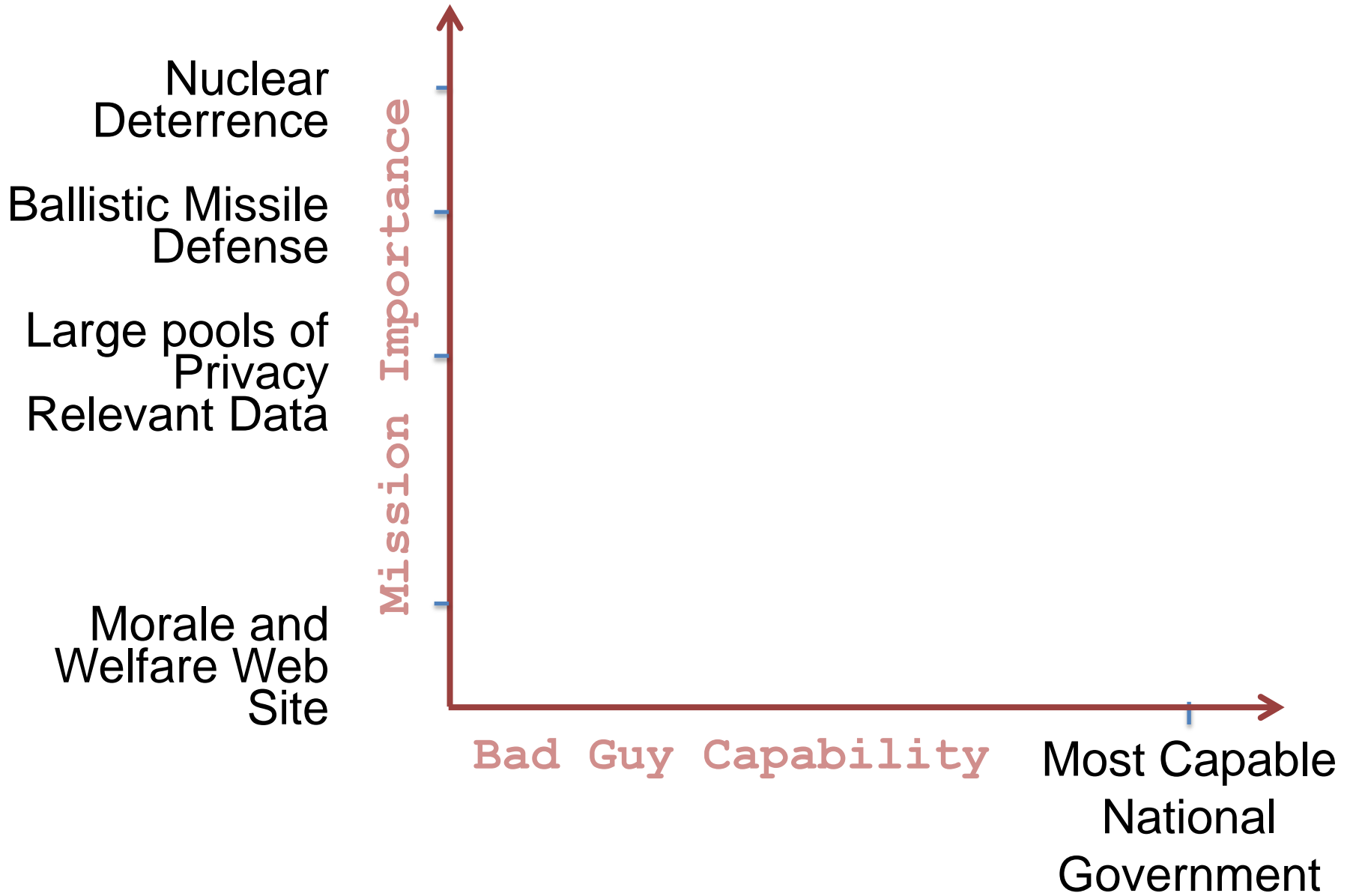
Every One

Whether or Not Connected to a Network

Part 3

Risk Management

Mission Importance

Bad Guy Capability

Basic Cybersecurity

Nuclear
Deterrence

Ballistic Missile
Defense

Large pools of
PII

Morale and
Welfare Web
Site

Mission Importance

Do Basic
Cybersecurity
Things

*In this space
we make most
risk decisions
in a common
way*

Bad Guy Capability

Most Capable
National
Government
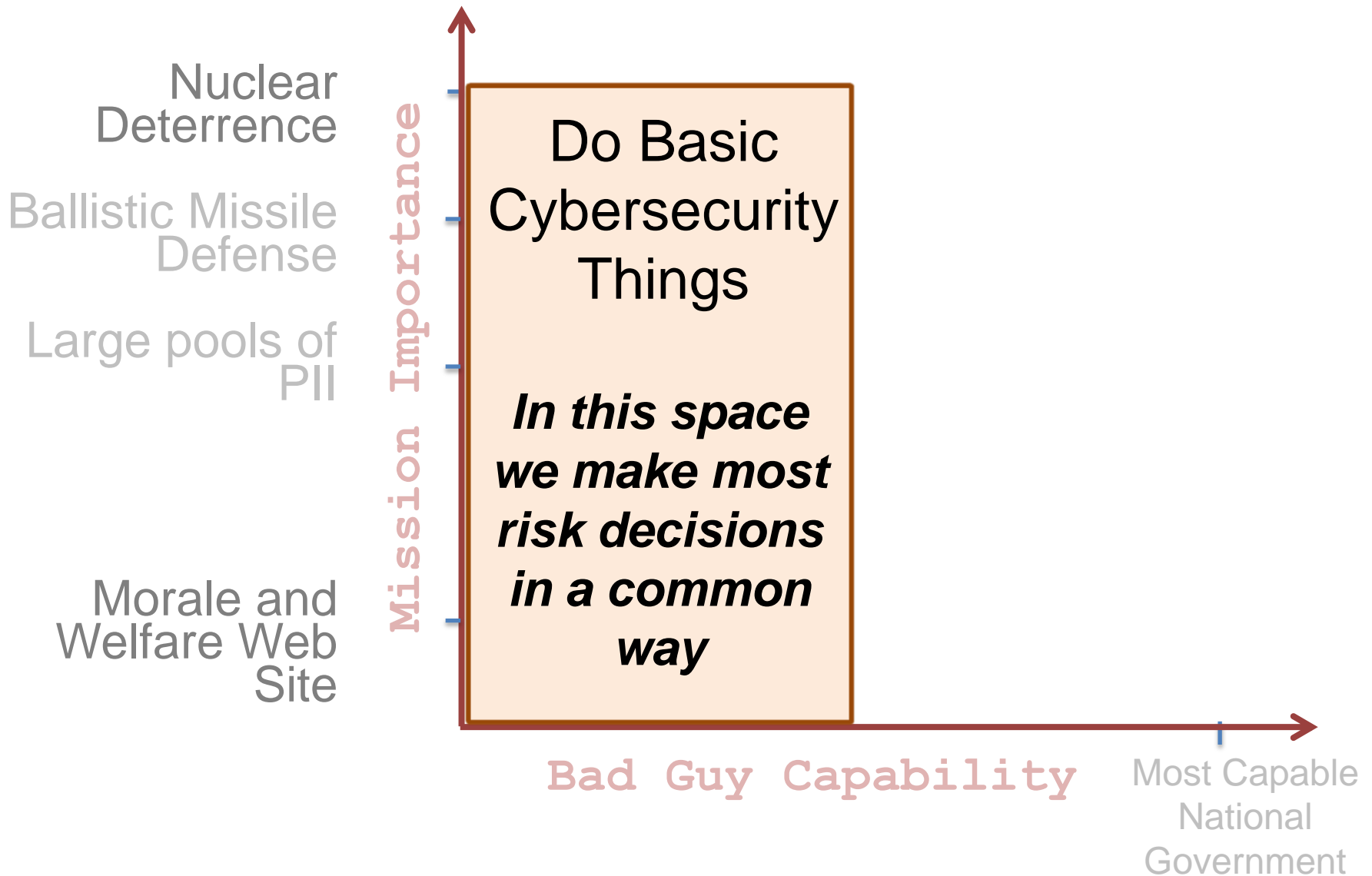
We Track How Well Each Sub Organization Is Doing the Basics

Nuclear Deterrence

Ballistic Missile Defense

Large pools of PII

Morale and Welfare Web Site

Mission Importance

Cybersecurity Discipline Implementation Plan

Bad Guy Capability

Most Capable National Government
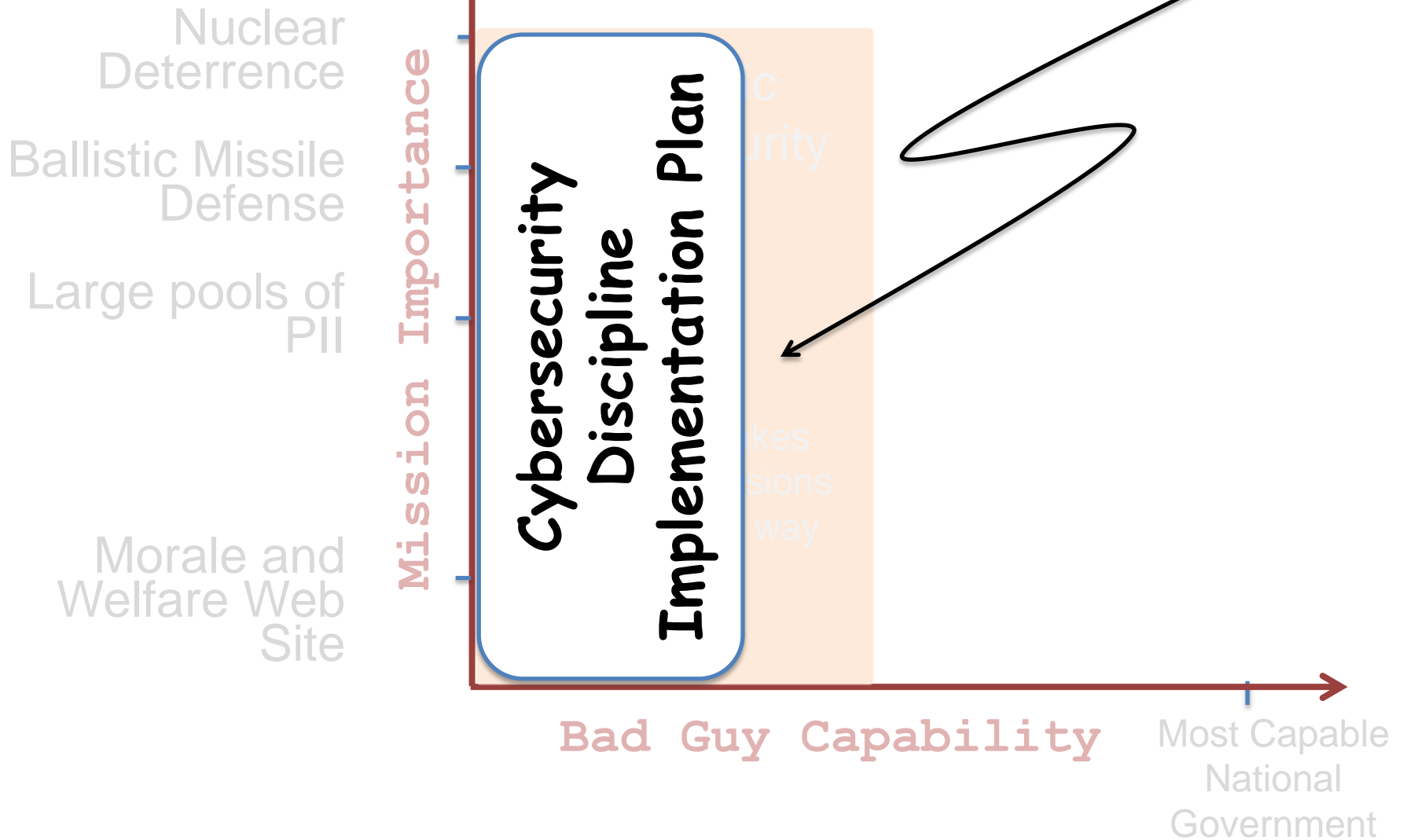
The Basics
...Derived from Incident Data

- Configure securely, patch aggressively
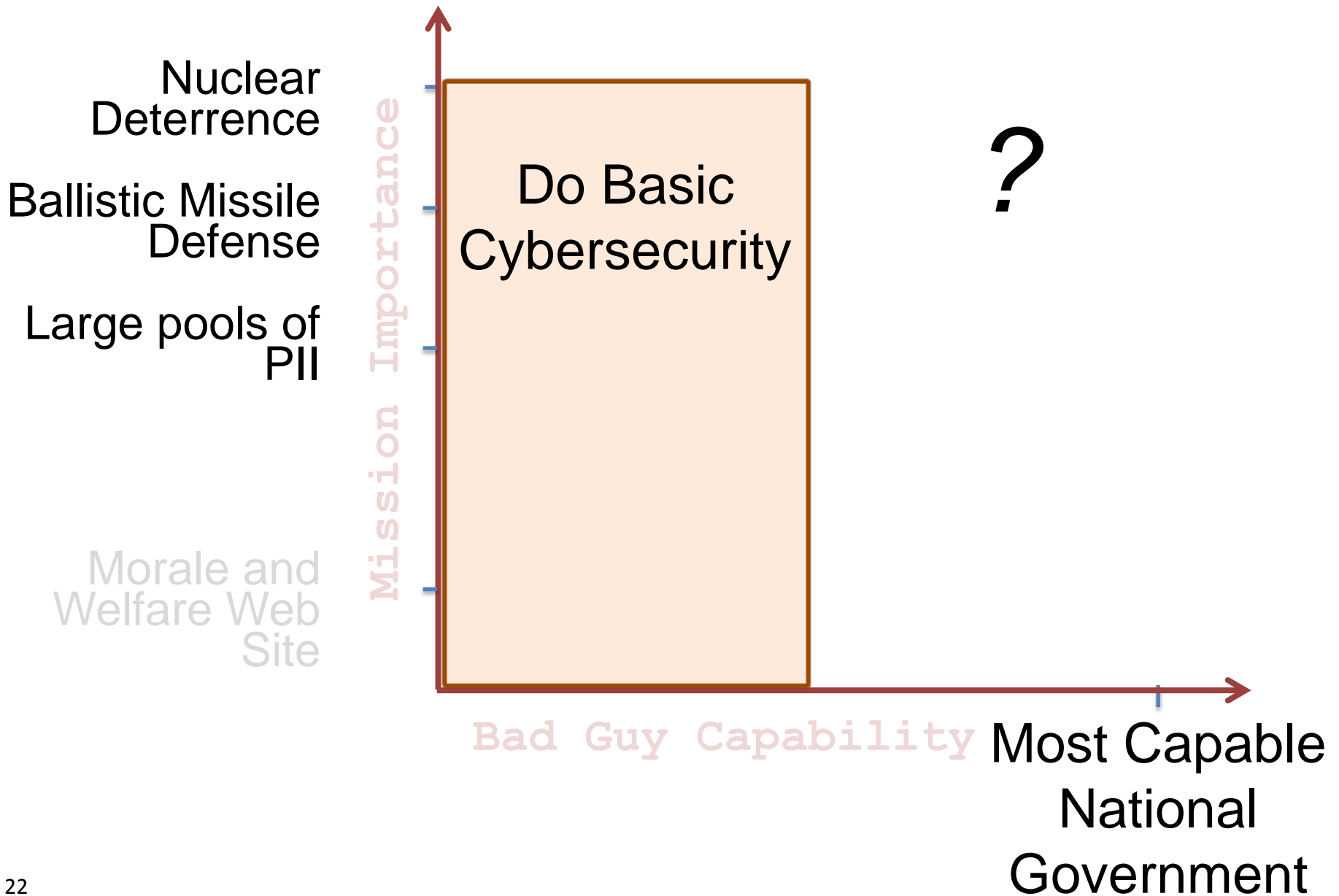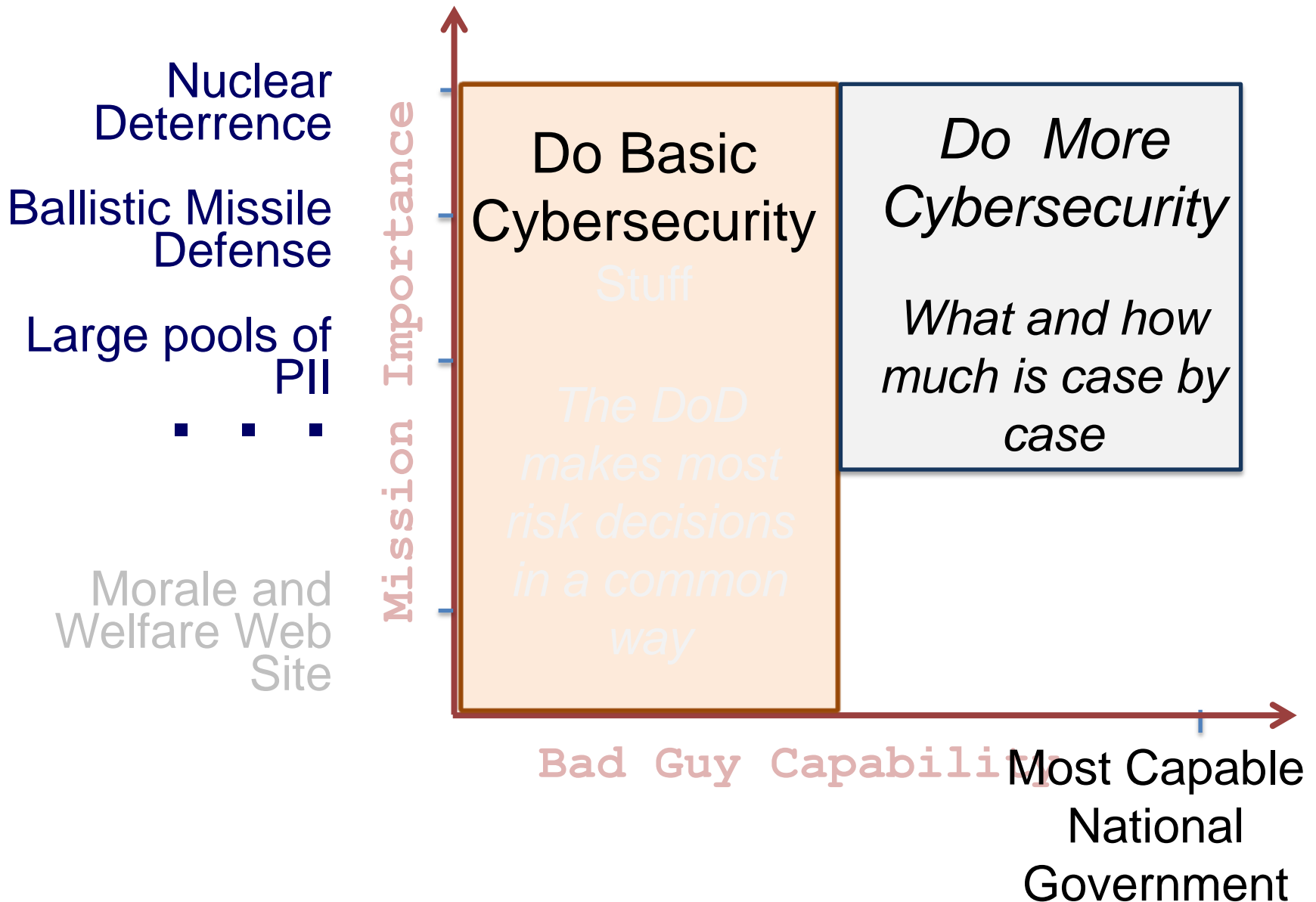- No more replayable authenticators. Use PKI where you can
- No more old operating systems, use new ones
- Validate overall security controls regularly
- Use the enterprise tools
- Separate outward facing from private
- Make sure a qualified cyber defender is paying attention to everything

Beyond the Basics

The Most Important Missions

Nuclear Deterrence

Ballistic Missile Defense

Large pools of PII

■   ■   ■

Morale and Welfare Web Site

Mission Importance

Do Basic Cybersecurity

Stuff

The DoD makes most risk decisions in a common way

Do More Cybersecurity

What and how much is case by case

Bad Guy Capability

Most Capable National Government

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Mission Appropriate Cybersecurity

Mission Importance (y-axis)

- Nuclear Deterrence
- Ballistic Missile Defense
- Large pools of PII
- Morale and Welfare Web Site

Do Basic Cybersecurity Stuff

The DoD makes most risk decisions in a common way

Do More Cybersecurity

What and how much is case by case

Take Risk

Bad Guy Capability (x-axis)

Most Capable National Government

Part 4

A Few More Thoughts About Achieving Mission Appropriate Cybersecurity

Accountability and Discipline Must Be Driven From the Top of the Organization … and up and down the Actual Chain of Command

… not from the Side by Cybersecurity People

The *Information Technology Workforce* Is Best Placed to Do Most of the Basics

Managing IT in a realistic operational environment

Standardize, simplify, centralize, and automate the *easy* stuff

Focus design expertise, cleverness, and deep vulnerability assessment on the most important missions.

We Are Working to Standardize Cybersecurity for DoD Suppliers
… As a U.S. government standard

<u>Draft</u> NIST Special Publication 800-171 <u>Revision 1</u>, *Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations*