

# Effectively Managing Project Risk, Uncertainty and the Unexpected

*What role does an organization's choice of project governance models play?*

**Minnesota Council for Quality PIN**

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**Keith Hornbacher, M.B.A.**

*Affiliated Faculty, Organizational Dynamics Graduate Programs*

University of Pennsylvania

*Tel: +1.952.891.3579 , Email: [keithh@sas.upenn.edu](mailto:keithh@sas.upenn.edu)*

Principal, Hornbacher Associates

*[keith@hornbacherassociates.com](mailto:keith@hornbacherassociates.com)*

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# *Acknowledgements*

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- ❖ Materials presented in this document and that are discussed in this session have been compiled in accordance with all provisions governed by non-disclosure agreements now in force. Sources are cited and are available to the public.

# *Objectives today limited by time*

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- Get acquainted first
- Dialogue for process improvement
- Broaden vision and stimulate curiosity
- Answer how this may apply to you
- Provide references for path forward

# We'll discuss several perspectives today

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- Organizations, team members, contributing factors
- Context – what we mean by project risk, uncertainty, and the unexpected
- Project governance
  - What does it mean in this context?
  - Role of independent reviews
- How much is “enough”?

*Sources include material from my course at Penn (syllabus detailing references and content available)*

# Governance lost!

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- Multiple failures
- Checks and balances circumvented
- External intervention absent
- Criminal behavior requires extraordinary oversight
- *Not our focus today*

## our vision

Enron's vision is to become the world's leading energy company – creating innovative and efficient energy solutions for growing economies and a better environment worldwide.

## our values

### respect

We treat others as we would like to be treated ourselves. We do not tolerate abusive or disrespectful treatment. Ruthlessness, callousness, and arrogance don't belong here.

### integrity

We work with customers and prospects openly, honestly, and sincerely. When we say we will do something, we will do it; when we say we cannot or will not do something, then we won't do it.

### communication

We have an obligation to communicate. Here, we take the time to talk with one another... and to listen. We believe that information is meant to move and that information moves people.

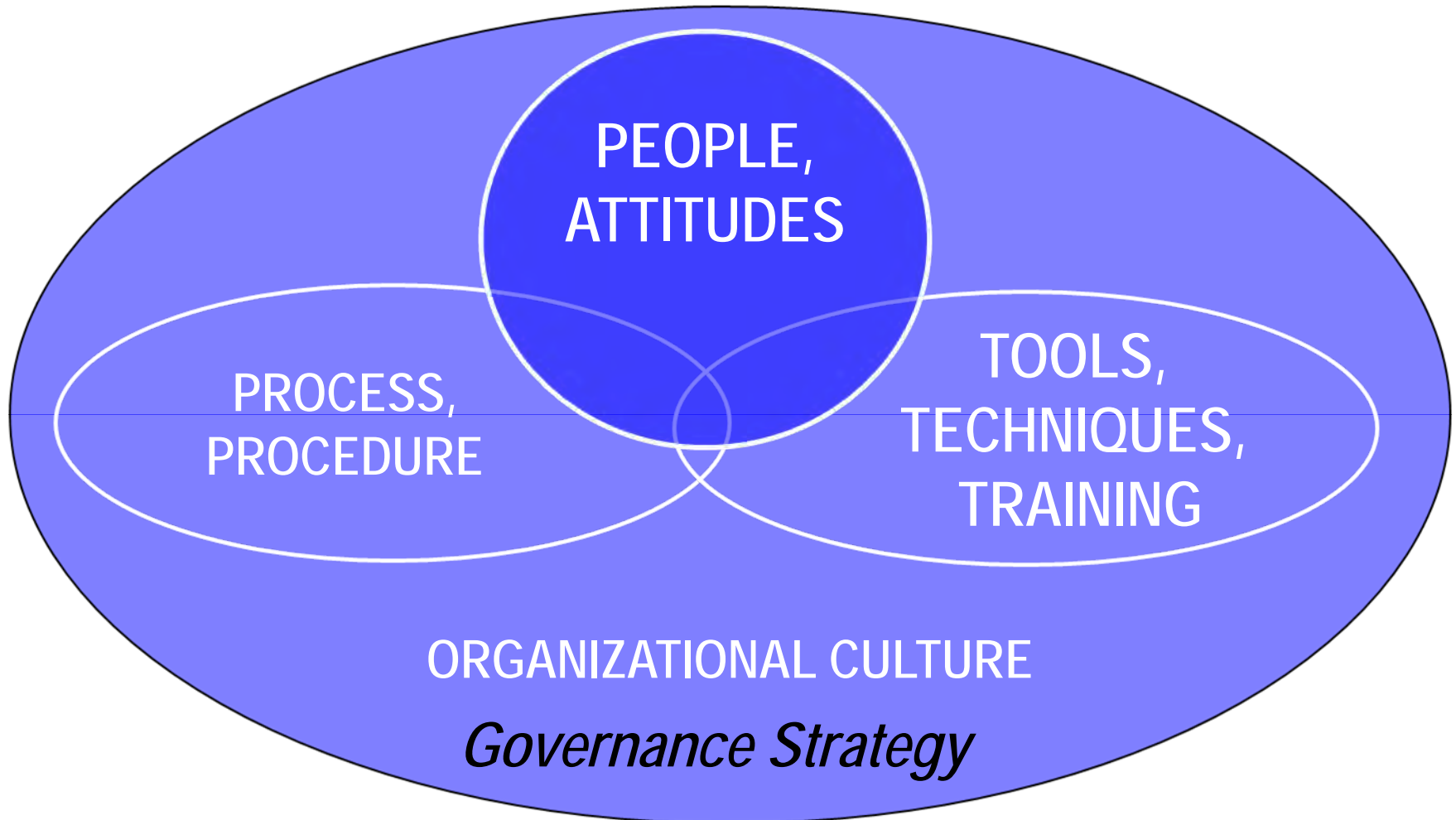
### excellence

We are satisfied with nothing less than the very best in everything we do. We will continue to raise the bar for everyone. The great fun here will be for all of us to discover just how good we can really be.



# *Our core theme today*

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# What's your frame of reference? Your team's?

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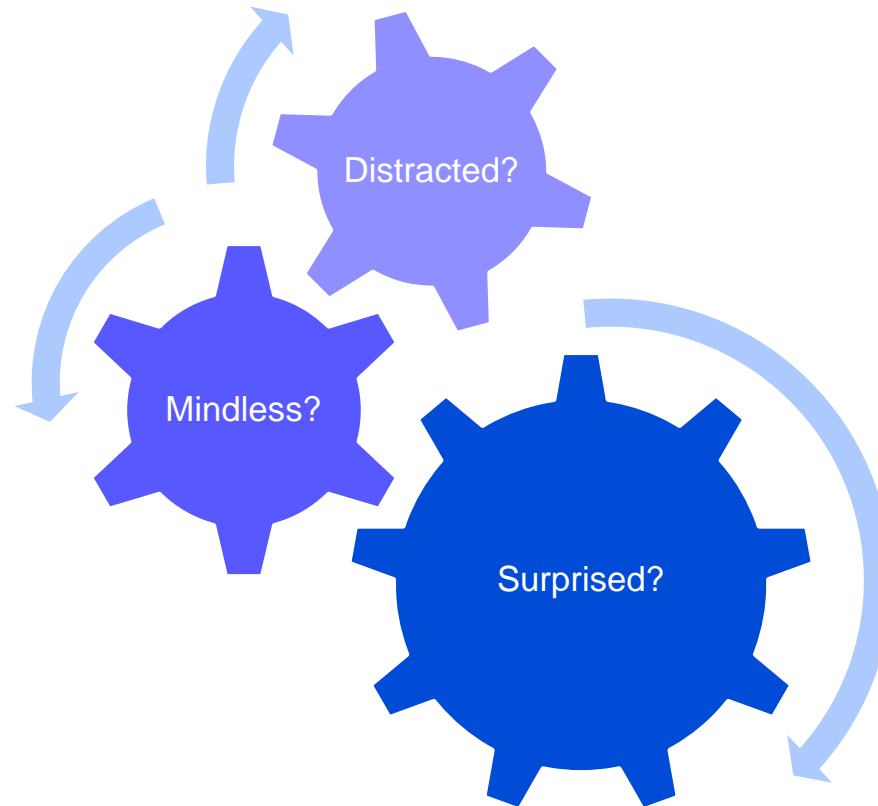
Source: Dan Crosbie / Canadian Ice Service, published in The New York Times (on-line, 2.3.07)

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# Unexpected events happen – Why?

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# What do we mean by “un~expected”?

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- **Expectations:** implicit assumptions that guide behavioral choices
  - **Confirmation:** Intention → action → *proper understanding* of environment → actual events match the intended → *expected* outcome (assumptions confirmed)
  - **Disconfirmation:** Intention → action → *misunderstanding* of environment → actual events diverge from the intended → *unexpected* outcome (assumptions not confirmed)
- **Disconfirmation** can be basis of both serious problems and learning
- **Search for confirmation:** human tendency to seek confirmation and avoid disconfirmation (well practiced; needs effort to override and remain alert)

\*This section adapted from Managing the Unexpected, 2d ed. by Karl E. Weick and Kathleen M. Sutcliffe, John Wiley & Sons, 2007, Ch. 2.

# In other words . . .

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- Three forms of unexpected project events
  - Expected to occur do not happen
  - Not expected to occur do happen
  - Events that were simply unthought-of happen
- What can we do about these?

# What do we mean by “*un~certainty*”?

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- We live with this every day driving to work
- Some play the Power-ball Lottery only when payoff is large – some never, some always
- Our organizations must perform in such environments
- A range of uncertain conditions exist – careers, family, health, investments . . . and so on . . .
- Unsure because no facts about the future, only guesses, hopes, worries . . .

# Are all uncertainties relevant?

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- Are there degrees and types of uncertainty?



- Do uncertainties change over time?

# Relevant uncertainty

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- How does this relate to project risk?
- Can we apply the concepts to managing projects?

The future . . . it's just not what it used to be!

- Yogi Berra, former catcher (New York Yankees)

# *Risk . . . What do we mean to say?*

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- “Risk” may connote different things
  - *Merriam-Webster* ONLINE – common usage
    - *Possibility of loss or injury* : [PERIL](#)
  - Security, safety, health, product use

# *Risk . . . Meaning depends on context*

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- Security, safety, health, product use
  - Not our context today
- Risks – *according to some*, limited to *potential problems* that could arise
  - In use by many whose intense experiences were threat-based military applications, insurance industry, heard on “the street”
- Project Risks – emerging use *includes favorable* as well as unfavorable outcomes

# Technical usage ~ Uncertainty and Risk

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- Uncertainty – relates to *lack of knowledge* about the nature and likelihood of possible outcomes
- Risk – an event where *possible outcomes are known* and their *likelihoods are known or can be estimated* but *cannot be precisely known in advance*



# What problem . . . still?

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- Study found that of *Fortune* 500 Companies' projects implemented
  - Nearly Half from 100% to 400% Over Budget
  - 86% Late Achieving Deliverable
- Project Risk Management – identified as one of top priority strategies to improve

How does this compare with your experience?

“Project Management Best Practices Report,” August 2000 - Center for Business Practices  
Reported in *Trendwatch*, **PM Network** - November 2002

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# *Risk . . . Definition for our purposes*

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## ■ Project Risk

. . . is an uncertain event or condition that, if it occurs, has a *positive or negative effect* on at least one project objective, . . . (*PMBOK® Guide 4<sup>th</sup> edition, 2008*)

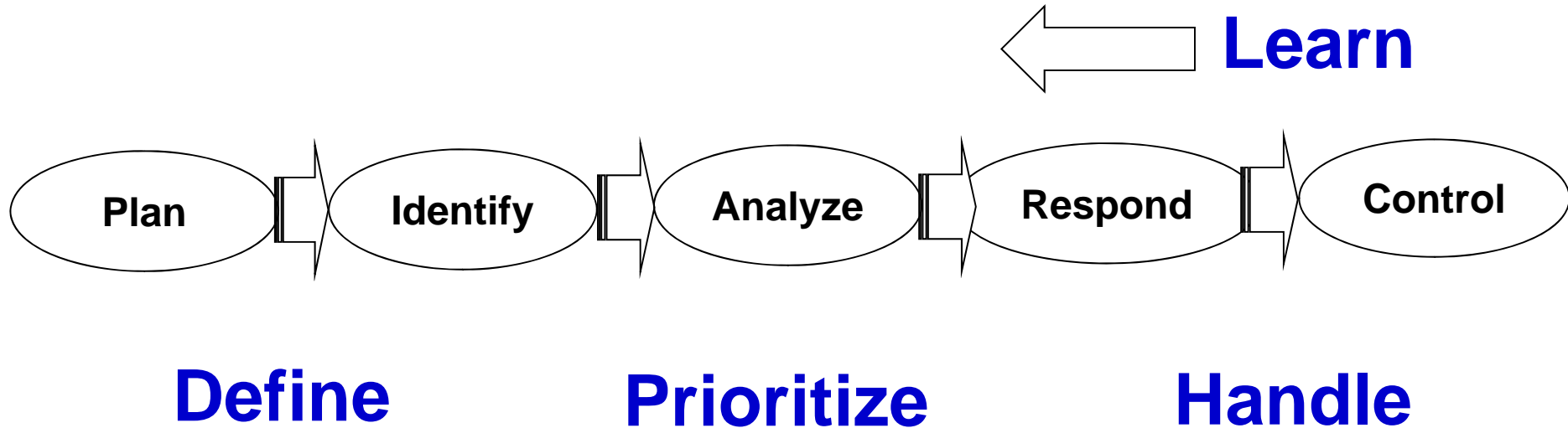
. . . such as time, cost, scope, or quality . . .

. . . and is defined by two attributes, *likelihood of occurrence and impact* if it occurs . . .

*PMBOK® Guide*, Project Management Institute, Third ed., 2004

# Simple Project Risk Management Process

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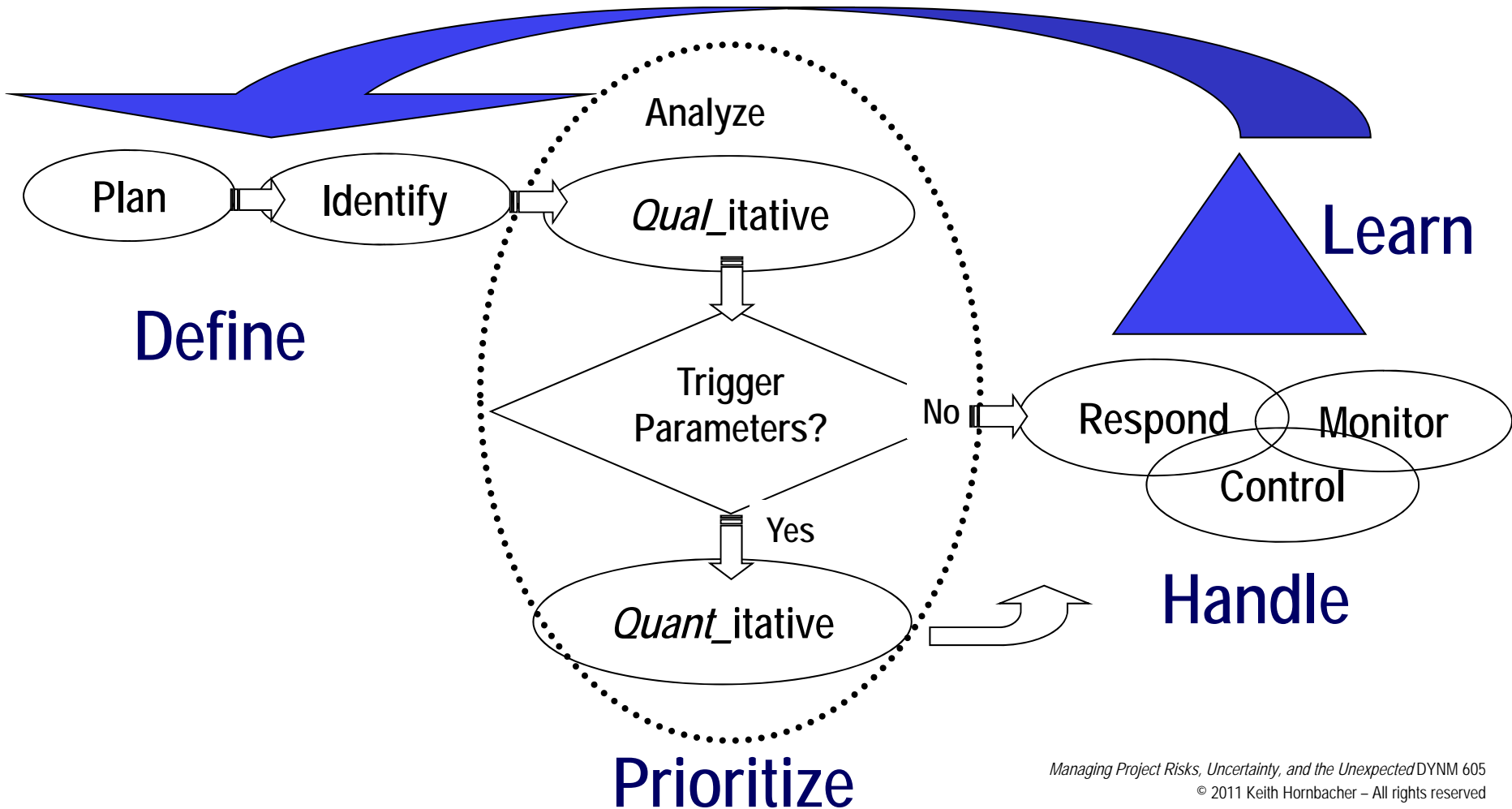
# *Project Risk Management Steps (PMI®)*

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- *Plan*
- *Identify*
- *Analyze – Qualitative*
- *Analyze – Quantitative*
- *Plan Responses*
- *Monitor and Control*

Manage the process and *LEARN!*

# Can be elaborated



# Remember, Project Risk

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Threat

Opportunity



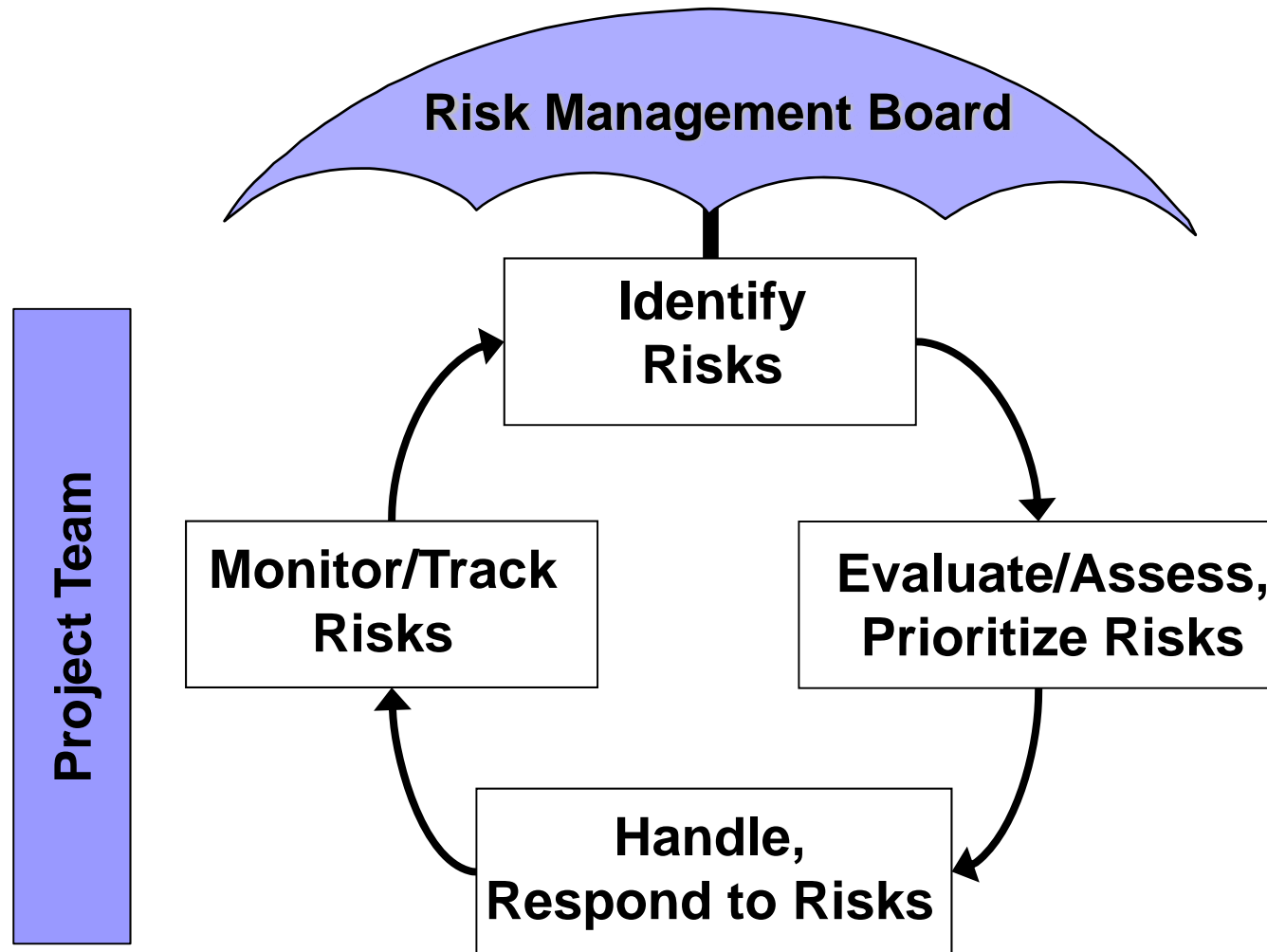
# Types of risk management governance

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1. Internal to Program/project
  - Key team members represent all constituencies
  - Senior stakeholders actively engaged
  - Primary responsibility and accountability
2. External to Program/project (same organization)
  - Subject matter experts (SMEs) respected by team members
  - May have advocate or intervention role
3. External to Program/project organization
  - Membership similar to 2., above
  - Independent from senior executives/stakeholders

# Type 1. Role of senior stakeholders includes reviewing and monitoring

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# Type 1. Actual Risk Management Board

Prime Core Team	Responsibility	Customer (Advisory)	Customer Counterparts
Program Manager	Member, Chair	Member	Program Manager
Technical Director	Member	Member	Chief Scientist
Communications, Associate Program Mgr (APM)	Member	Member	Communications, Team Leader
System, APM	Member	Member	System, Team Leader
Software, APM	Member	Member	Software, Team Leader
Fielding, APM	Member	Member	Fielding, Team Leader
Resource Management, APM	Member	Member	Resources, Team Leader
Safety, Lead	Member	Member	Safety, Team Leader
Quality, Lead	Member	Member	Quality, Team Leaders
Contracts, Manager	Member	Member	Contracts, Team Leader
Risk, Manager (process owner)	Member, Coordinator	Member	Resources, Deputy Team Leader

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# *Examples of independent models*

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## Type 2. NASA – Internal, collaborative

- Standing Review Board (SRB) of subject matter experts
- Independent Program Assessment Office (IPAO)
- Objectives include strengthening project

## Type 3. Government Accountability Office (GAO)

- External, independent “watchdog”
- Subject matter experts
- Audit functions

# *Type 2 Example*

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## NASA – Internal, collaborative

- Standing Review Board (SRB) of subject matter experts
- Independent Program Assessment Office (IPAO)
- Objectives include strengthening project

## Government Accountability Office (GAO)

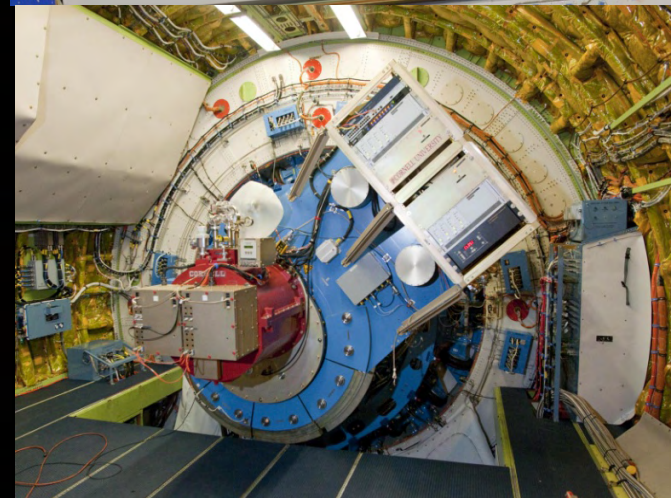
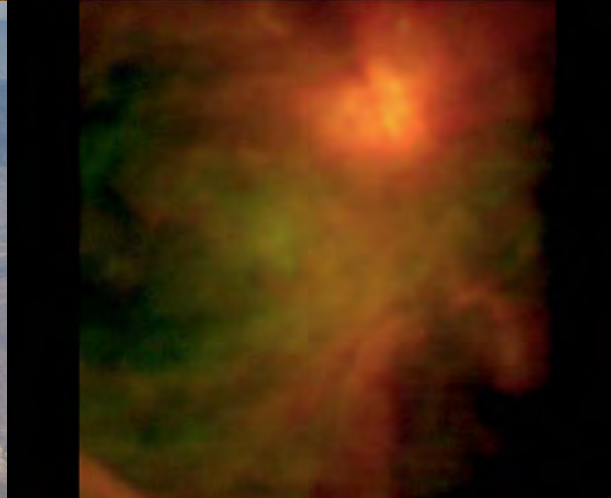
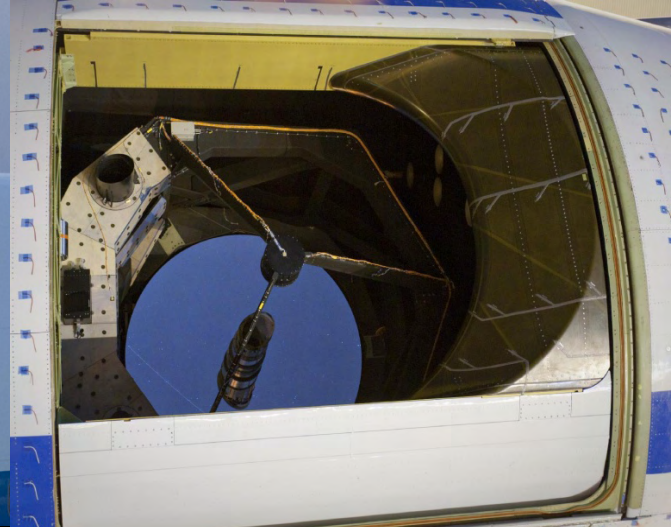
- External, independent “watchdog”
- Subject matter experts
- Audit functions

# *Independent Program/project Assessments*

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- Standing Review Boards
  - Subject Matter Experts
  - Periodically engage Program/projects
  - Documents
  - Interviews
  - Site visits
  - Exercise tools separately
  - Discussions among experts
  - Produce findings
  - Brief Program/project teams
  - Report findings to organizational components

Source: <http://www.nasa.gov/offices/pae/references/board-1.html>



SOFIA Program  
Two Projects

- Platform
- Science

*Stratospheric Observatory for  
Infrared Astronomy (SOFIA)*

[http://www.nasa.gov/mission\\_pages/SOFIA/](http://www.nasa.gov/mission_pages/SOFIA/)

# *Type 3 Example*

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NASA – Internal, collaborative

- Standing Review Board (SRB) of subject matter experts
- Independent Program Assessment Office (IPAO)
- Objectives include strengthening project

Government Accountability Office (GAO)

- External, independent “watchdog”
- Subject matter experts
- Audit functions

# *GAO Home Page*

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"The U.S. Government Accountability Office (GAO) is known as "the investigative arm of Congress" and "the congressional watchdog." GAO supports the Congress in meeting its constitutional responsibilities and helps improve the performance and accountability of the federal government for the benefit of the American people."

<http://www.gao.gov/>



# Governance models discussed today

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- Internal organizational project review
  - Risk Management Board
- Independent Program, Project assessment examples
  - NASA Standing Review Board
  - GAO Audits performed for US Congress (conducted by team of reviewers)
- Requirement for all: Foundation of well defined policies, processes, and procedures

# *The path forward*

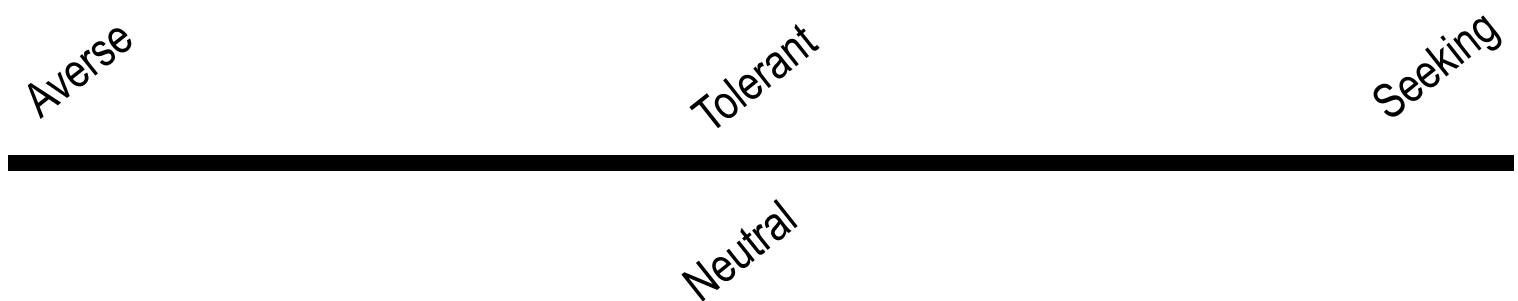
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- Where is your organization on the learning curve?
  - How mature are your project risk management policies, processes, procedures?
  - Do your project teams operate in an ad hoc manner?
  - . . . in repeatable or managed manners?

(See handout – slides at end of document)

# Exercise: How would you describe your risk attitude?

Please draw the following line on a piece of paper, label it



And place a dot on the line for your attitude. ●

What evidence is there?

Do you understand what led you to that conclusion?

*For more information, please contact*

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Keith Hornbacher, MBA, Affiliated Faculty  
Organizational Dynamics Graduate Programs  
School of Arts and Sciences, University of Pennsylvania  
*Tel: +1.952.891.3579 , Email: [keithh@sas.upenn.edu](mailto:keithh@sas.upenn.edu)  
[www.organizationaldynamics.upenn.edu/node/594](http://www.organizationaldynamics.upenn.edu/node/594)*

**Managing Project Risk, Uncertainty, and the Unexpected**  
(Course: DYNM-605)

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