

# **Exploration Assurance Team Best Practices\***

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## **Abstract**

For the last 25 years, the authors and close colleagues have been involved in assessing the prospect and play characterizations of our heritage company teams and now consult on establishing and supporting such work processes for our clients. The common term now used to describe such effort is Assurance. The primary role of Assurance is to provide independent and consistent guidance to exploration teams about their interpretations, assessments and conclusions. The goal of Assurance is to bring about a calibration from that consistency that result in a more predictive exploration portfolio, leading to better and more-informed decisions that can increase value. A key objective of Assurance is to ensure best practice of subsurface evaluations. The primary work of Assurance lies in between data collection/analysis and decision/capital allocation. Assurance has long been recognized as a needed process as various studies have documented the underperformance of exploration as a business function, related to the disconnect between pre-drill predictions and actual outcomes. Of the many culprits associated with underperformance, several that we have seen include the lack of technical excellence, the inability to extract effective estimates from technical excellence, and various biases that affect the estimators and their managers. To help build an understanding and effectiveness of the Assurance role in the last decade we have established a network of people from scores of companies involved in various assurance functions. This paper summarizes some of the key attributes from our observations, documented survey data collected, and what we believe is a best practice process. Assurance teams may simply be ad hoc team members that gather as needed or a dedicated core team with an extended network of subject matter experts with very formal scheduling and reporting functions. Assurance teams appear to be most effective when: (1) the Assurance team and associated contributors are experienced across several basins and plays; (2) they have the flexibility to assess an opportunity at various stages of technical

maturity, often involving early engagement with the project teams; (3) they provide structured, consistent and timely feedback that is archived for post-well assessment; (4) management and staff are aligned and support the assurance process.

### **References Cited**

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# Exploration Assurance Team



## Best Practices



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What

Why

Where

How

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Gary Citron

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Peter Carragher

# Our Observations on Exploration Assurance

## Based upon:

- R&A's collective 25 year (+) perspective
- Several R&A colleagues have previously managed or participated as members of Assurance Teams
- R&A's direct recent experience as advisors to various Assurance Teams
- Feedback from the Risk Coordinators Network established by R&A in 2008

“You can observe a lot by just watching” Yogi Berra

What: **As • sur • ance**      /əˈʃʊərəns/ 

Is variously defined as:

- A positive declaration intended to give confidence
- **Confidence in a team's abilities**
- Synonymous with: **pledge, commitment;**  
*you can count on us*

# What: Assurance

/əˈʃʊərəns/ 

## Is variously defined as:

- A positive declaration intended to give confidence
- Confidence in a team's abilities
- Synonymous with: **pledge, commitment;**  
*you can count on us*

The Assurance team strives to establish accountability for opportunity characterization prior to an investment decision

such that

the portfolio built upon the characterizations has predictive accuracy and hence

**reliability for repeat funding**

# What: Assurance Team Names

Now variously referred to as the:

- Exploration Review Team
- Risk Consistency Team
- Exploration Excellence (XX) Team
- Exploration Assurance Team
- Technical Assist Process (TAP) Team

Be careful in the name you select  
The acronym *will be used* as a verb

What: Assurance **Team Names**

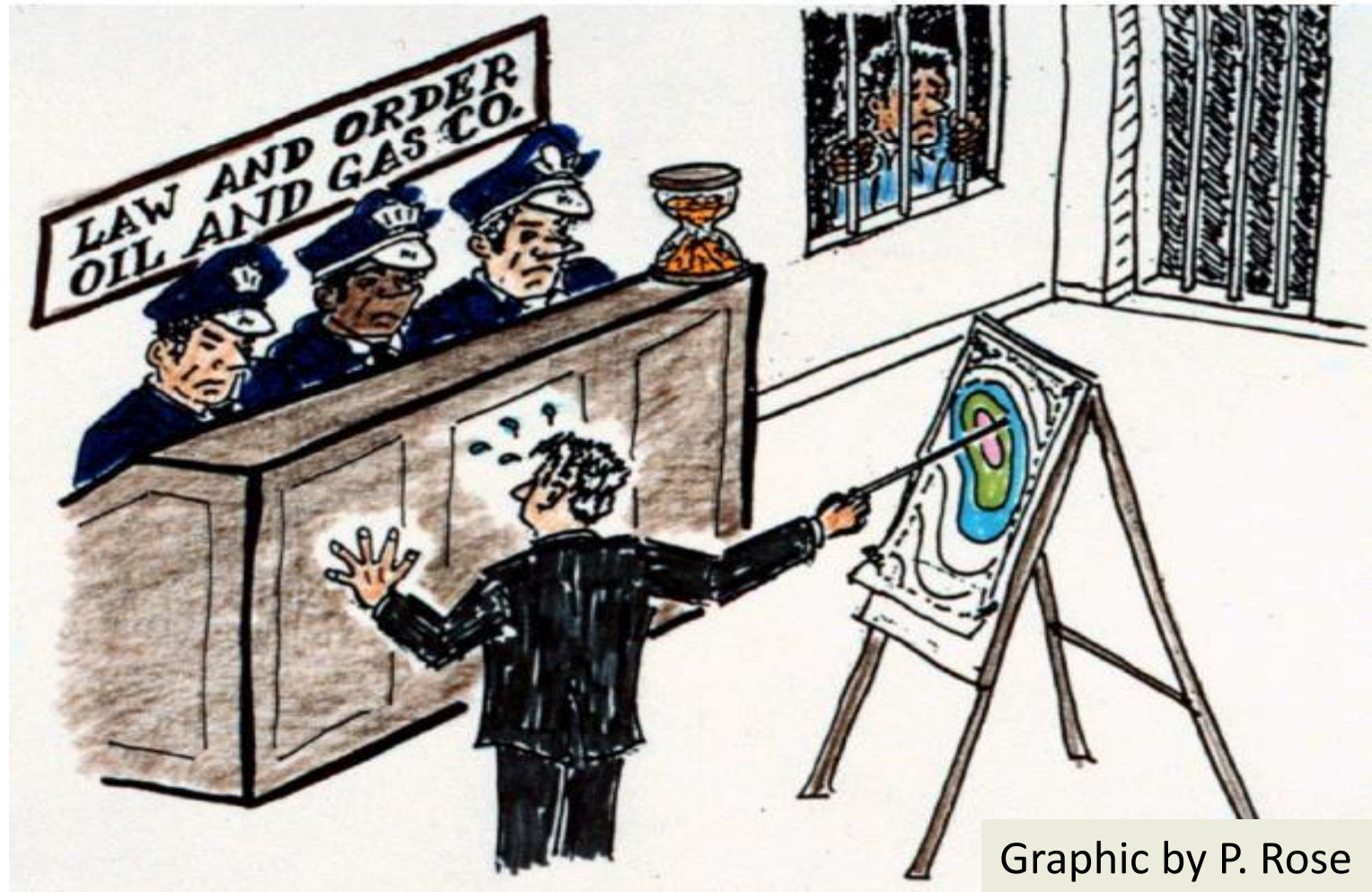
Previously (**and universally**) referred to as:

- **TRP**



# What: Assurance Team Names Previously (**and universally**) referred to as:

- The Risk Police



Graphic by P. Rose

# What: Assurance Team

## Primary Purpose is to Provide

- Independent, consistent guidance on the assessment
- Insights into how the company selected software works
- Perspective from other parts of the company

## For

Exploration teams

Stakeholder (technology & planning) groups

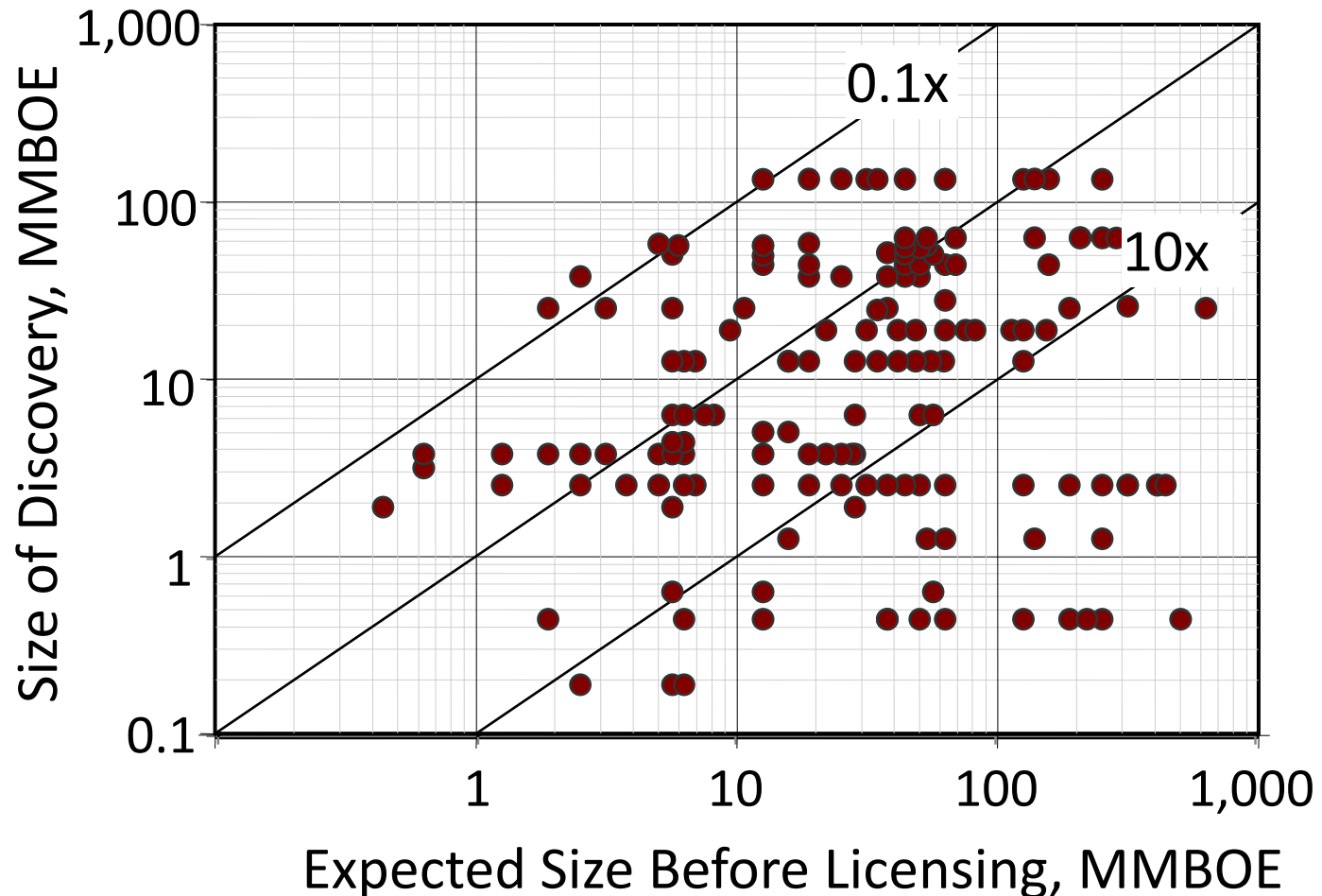
Decision-makers

on investment opportunities

# Why Assurance?

Cross plot

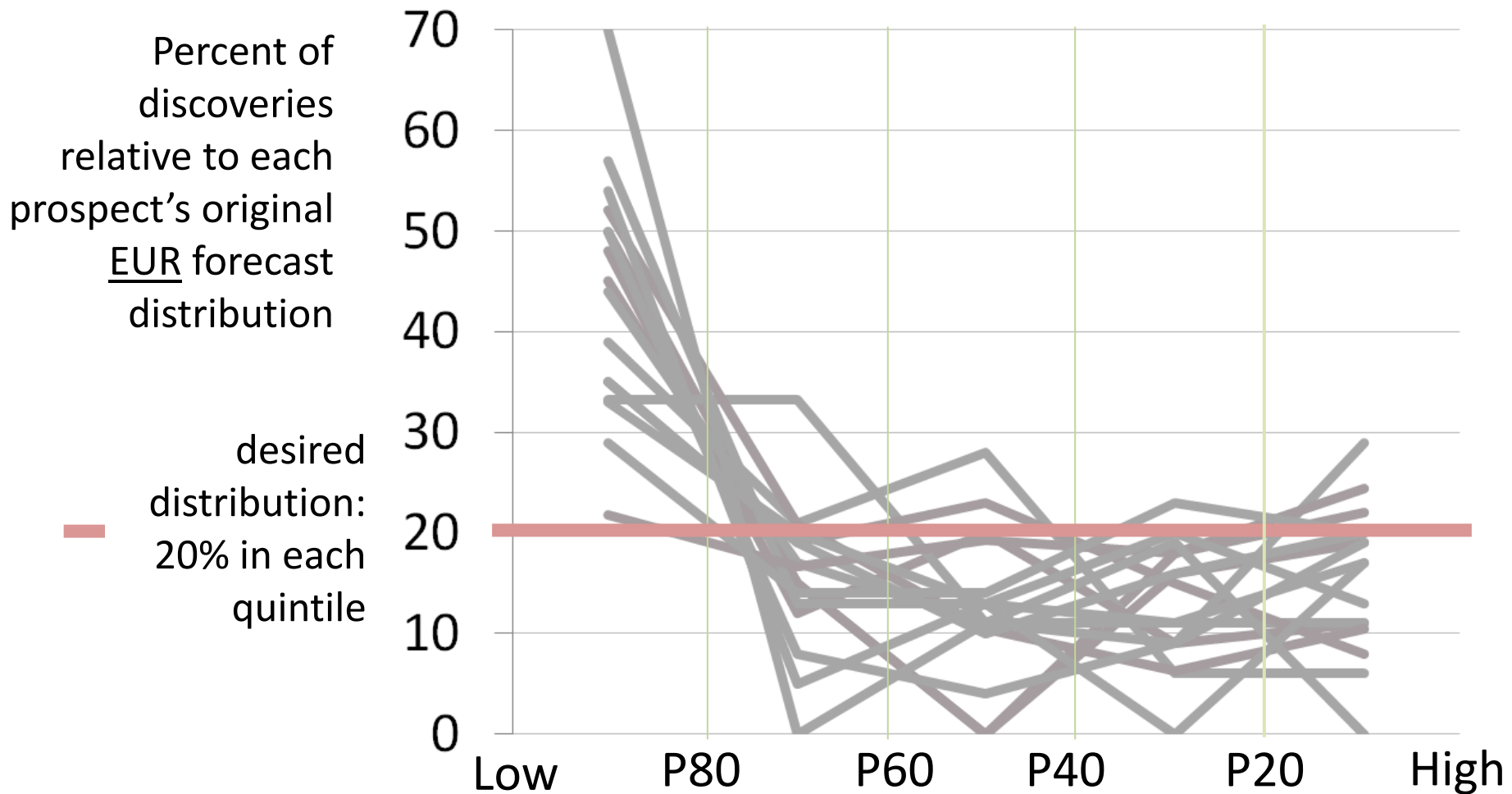
- Assurance Teams have been in existence for several decades in an effort to correct a value-destroying trend of overestimation



# Why Assurance?

## Percentile histogram

- Assurance Teams have been in existence for several decades in an effort to correct a value-destroying trend of overestimation

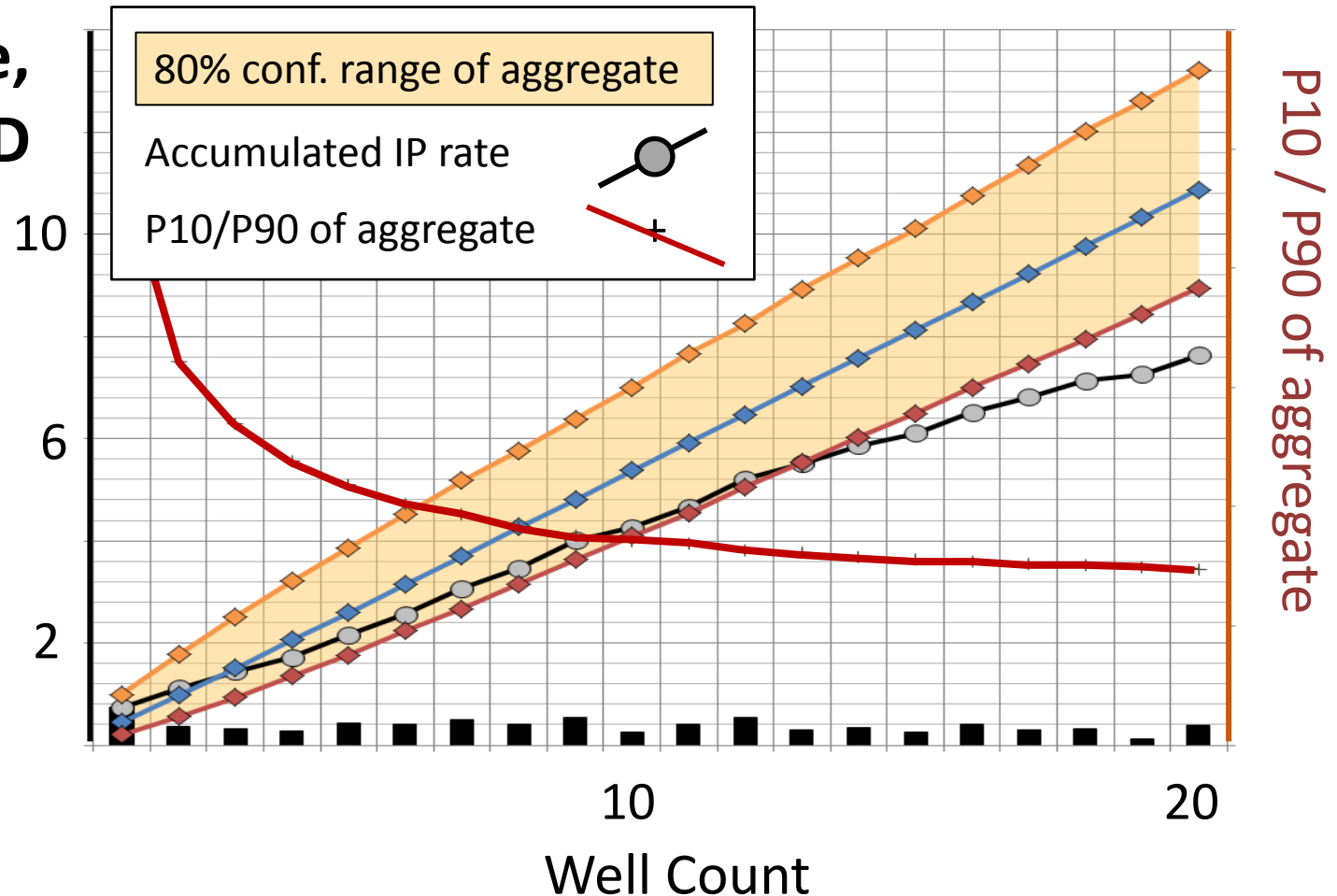


# Why Assurance?

## Sequential accumulation

- Assurance Teams have been in existence for several decades in an effort to correct a value-destroying trend of overestimation

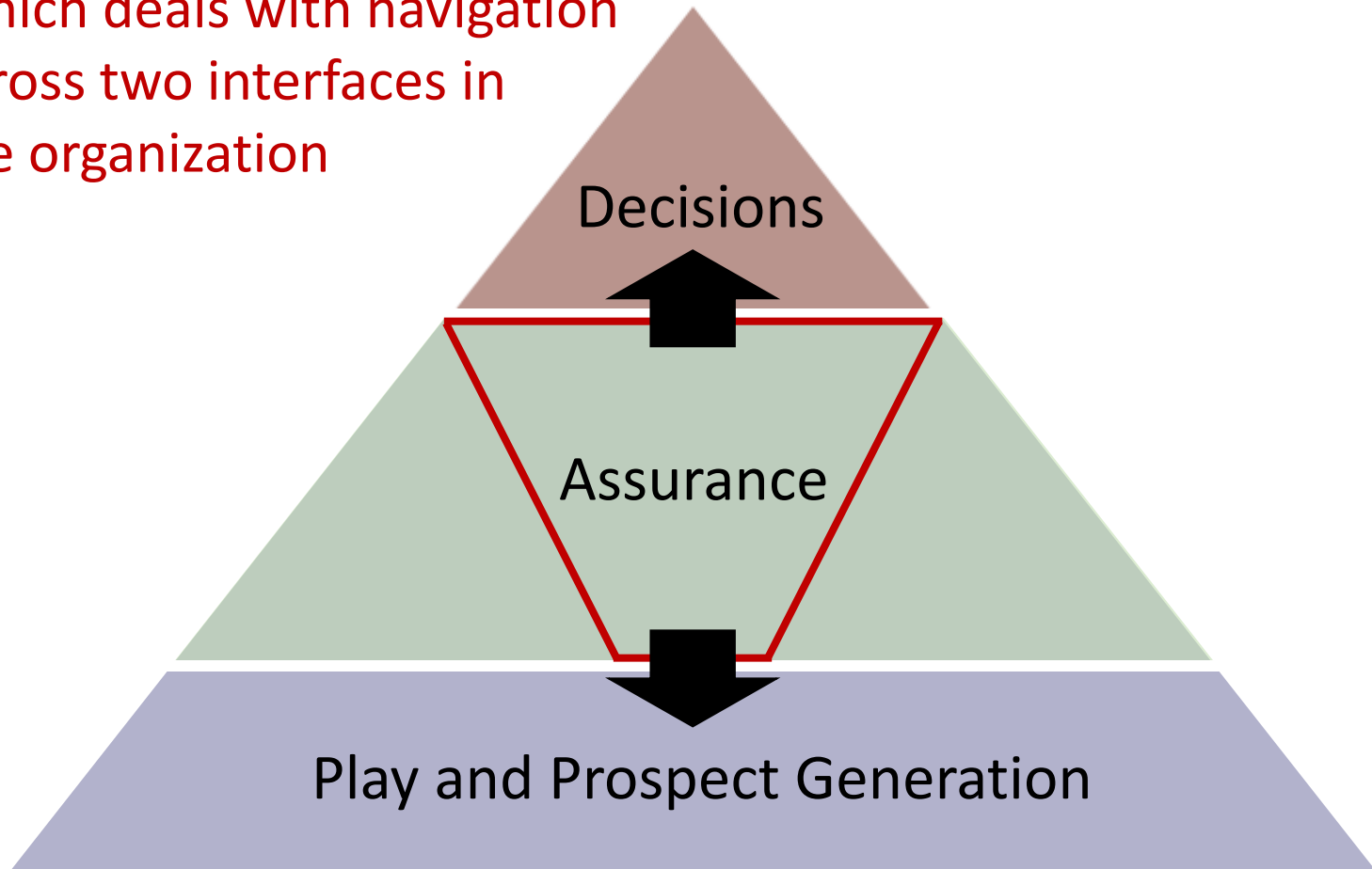
IP rate,  
MBO / D



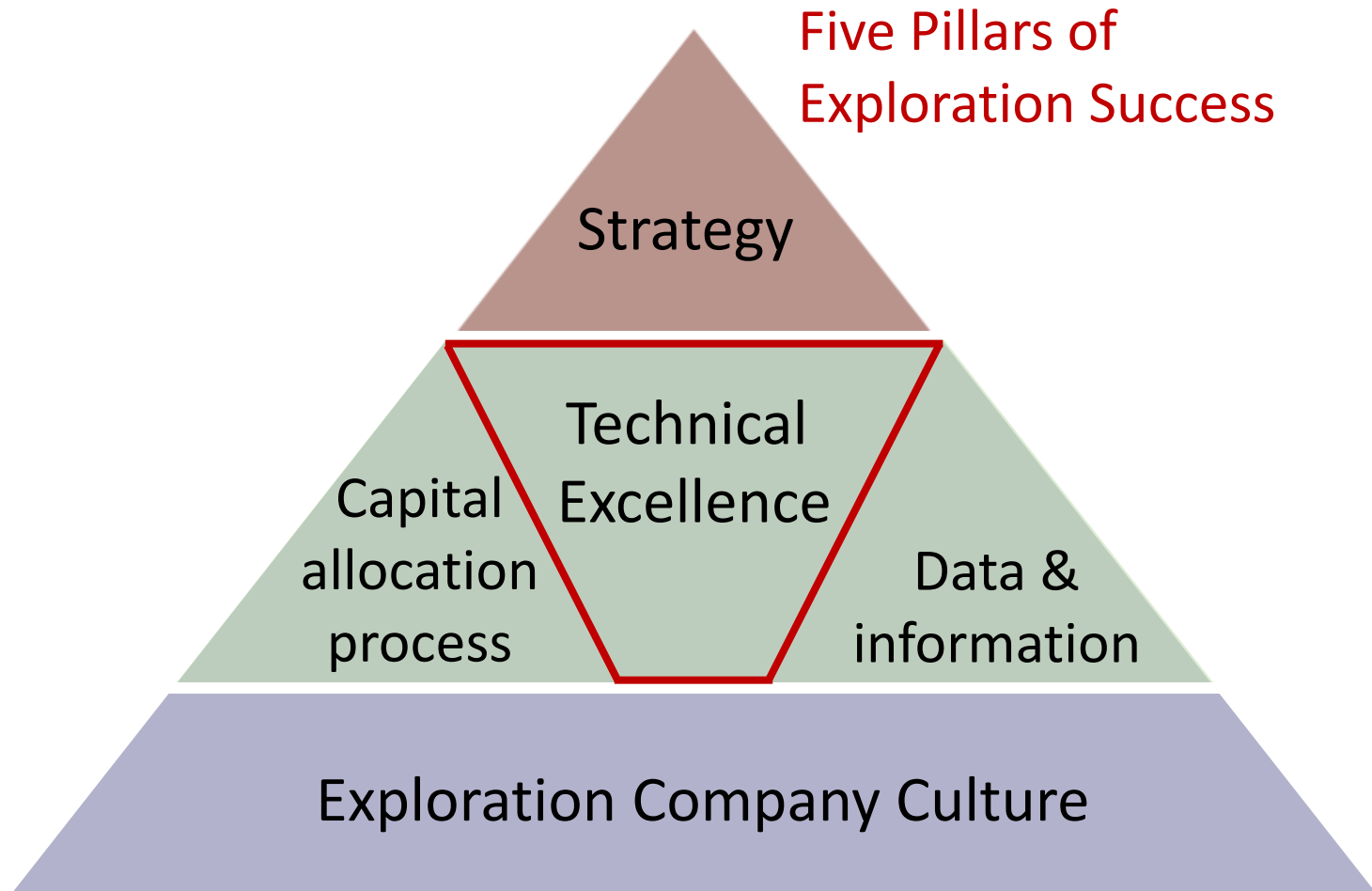
Next: Where

# Where: Assurance Team Space Operates Between Ideas and Decisions

Which deals with navigation  
across two interfaces in  
the organization



# Where: Assurance Team Space Operates Towards Technical Excellence



# Connecting The **What, Why** and **Where**:

- Assurance Team efforts can foster **consistency, communication and calibration** laterally and vertically across the organization

Leading to:

more-informed decisions  
a more predictive portfolio

“Provides the underpinning of everything we do in decision making and portfolio management”

Sr. VP Exploration



# Primary Roles & Responsibilities of the Assurance Team

- Manage the overall subsurface assessment process across the organization
- Ensure consistent resource and chance estimations of plays and the prospects therein
- Provide feedback and recommendations across both interfaces previously shown in the triangle
- Coordinate post well evaluations, performance tracking and knowledge sharing to progress learning

How best to do that?

# How: Assurance Team **Organization**

Most effective

Least effective

## Dedicated Core Team

Extended network of Subject Matter Experts

Maintains pre & post-drill data

Delivers Annual Review

Frequent Input into improved practices, workflows & Technology Plan

## Dedicated Core Team

Self-contained, able to meet normal demand

Maintains pre & post-drill data

Delivers Annual Review to Management only

Limited Input into improved practices, workflows & Technology Plan

## **Ad Hoc team**

Extended network of Subject Matter Experts

Difficult to Maintain pre & post drill data

No Annual Review

**No Input into improved practices, workflows & Technology Plan**

# How: Assurance Team **Capability**

Most effective

Least effective

## **Experienced team members**

Members support and believe in assurance

Succession Plan in place

**Selection to team based in large part on listening as well as technical skills**

No thought on individuals to include in team

Team members are mildly supportive of an assurance process

No Succession Plan

Selection to team based only on technical skills

# How: **Management Support** for Assurance

Most effective

Least effective

Exploration Leadership  
Team

Exploration Managers

Team Leaders

G&G Staff

All Levels Aligned and  
Support the Process

Exploration Leadership  
Team

*Exploration Managers*

*Team Leaders*

G&G Staff

Top Level Support with  
*Gaps*

*Exploration Leadership  
Team*

Exploration Managers

Team Leaders

G&G Staff

*Lack of Leadership  
Support*

# How: **Management Support for Assurance**

Most effective

Least effective

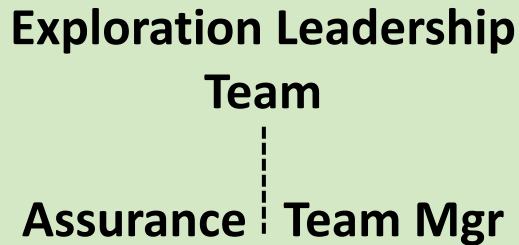
**Exploration Leadership  
Team**

**Determines what should get done**

# How: Management Support for Assurance

Most effective

Least effective



Determines what should get done  
Having Assurance input is beneficial  
especially via  
direct report relationships

Assurance Teams reporting in through the  
Technology organization  
is also common,  
but can be suboptimal

# How: **Management Support for Assurance**

Most effective

Least effective

Exploration Leadership  
Team

**Determines what should get done**  
Having Assurance input is beneficial

Exploration Managers

Team Leaders

**This interface**

G&G Staff

**Determines what does get done,**  
and how,

So interaction between the  
**Assurance Team** and Team Leaders  
is critical

# How: Assurance **Review Process**

Most effective

Least effective

## Fit-for-purpose

starting (if needed) with  
the play perspective

Project Framing

Peer Reviews & Assists

Final Assurance Review

**Assurance Review  
included in  
Decision-Making**

Rigid process

No Project Framing

Ad hoc Peer Reviews

Final Assurance Review

Assurance Review  
plays limited role in  
Decision-Making

**Inconsistent process**

No Project Framing

No Peer Reviews

**Final Assurance  
Review only**

**No participation of  
Assurance Process in  
Decision-making**



# How: Assurance **Review Meeting Behaviors**

Most effective

Least effective

## Listen and challenge

Open-ended, inquisitive questions

Informal coaching

Review focused on  
critical metrics for required decision,  
with regional perspective; &  
critical resource parameters &  
chance factors

## **Very little or no listening**

Confrontational “Audit” questions

No coaching

Review is **inconsistently focused**  
**or**  
drives  
overly detailed requirements  
not relevant to the decision

# How: Assurance **Ownership & Accountability**

Most effective

Least effective

**Exploration teams  
Accountable for Chance  
and Volume**

Exploration teams act on  
Assurance Team  
recommendations

Assurance Team provides  
direct input into  
Economics & Strategy

**Assurance opinion  
directly given to  
Exploration Leadership**

Assurance Team  
Accountable for Chance  
and Volume

Exploration teams act on  
Assurance Team  
recommendations

Exploration Teams  
Accountable for  
Economics & Strategy

Assurance opinion directly  
given to Exploration  
Leadership

Exploration Teams  
Accountable for Chance  
and Volume, decisions

Exploration teams may  
not act on Assurance  
Team recommendations

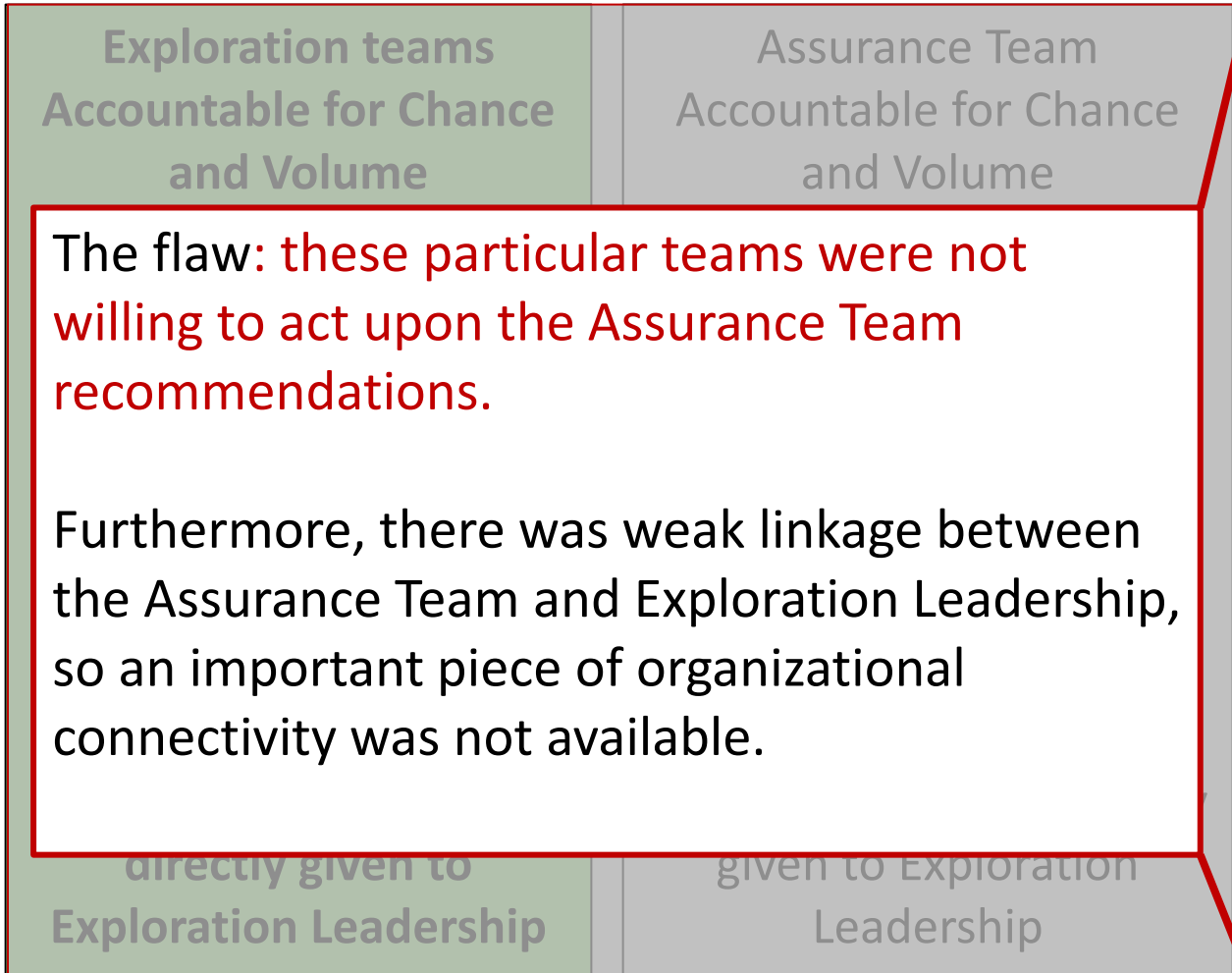
Assurance team has no  
input to  
Economics & Strategy

Assurance team has no  
direct link to  
Exploration Leadership

# How: Assurance **Ownership & Accountability**

**Impacts** information flow and organizational alignment **negatively**

Least effective



The flaw: these particular teams were not willing to act upon the Assurance Team recommendations.

Furthermore, there was weak linkage between the Assurance Team and Exploration Leadership, so an important piece of organizational connectivity was not available.

Exploration Teams Accountable for Chance and Volume, decisions

Exploration teams may not act on Assurance Team recommendations

Assurance team has no input to Economics & Strategy

Assurance team has no direct link to Exploration Leadership

# How: Assurance **Ownership & Accountability**

Most effective

**Impacts** information flow and organizational alignment **positively**

**Exploration teams  
Accountable for Chance  
and Volume**

Exploration teams act on  
Assurance Team  
recommendations

Assurance Team provides  
direct input into  
Economics & Strategy

**Assurance opinion  
directly given to  
Exploration Leadership**

Assurance Team  
Accountable for Chance  
and Volume

Exploration Teams  
Accountable for Chance  
and Volume, **decisions**

**In contrast, both the center and left systems have proven to be effective since the early 1990's.**

**These durable systems have survived staff turnover in the Assurance, Exploration & Leadership teams.**

Notably some of the Assurance team members earned promotions into the Leadership Team.

given to Exploration  
Leadership

**direct link to  
Exploration Leadership**

# How: Assurance **Feedback Mechanisms**

Most effective

Least effective

**Structured, consistent, documented feedback**

Timely, written delivery of feedback

Detailed prospect assessment notes, including recommendations

**Assurance team input included in formal decision package**

Unstructured, verbal feedback

No consistency on delivery of feedback

Brief summary notes and comments with no formal recommendations

Assurance team input NOT included in formal decision package

**Limited feedback;** rely on memory

No consistency on delivery of feedback

No summary notes and comments provided

**Assurance team input NOT incorporated**

# How: Engineering, Economics & Planning

Most effective

Least effective

**Reservoir engineer is part of or works closely with Assurance team**

Strong working relationship with Engineering, Commercial, Economic and Planning groups

Ensures Development group is aware of the project

Fit for purpose economic case selection

**Portfolio controlled by multiple objectives & exposure to upside**

Reservoir Engineers have limited or no exposure to project

'Handoff' to Engineering, Economics and Planning teams

Poor communication with Development & Commercial teams

Single deterministic assessments

**Portfolio controlled by a single parameter**

# How: **Post Well Appraisal** and Calibration

Most effective

Least effective

**Pre- and Post-Drill  
outcomes thoroughly  
analyzed**

**Volume Parameters & Pg  
fully calibrated and  
adjusted**

Results and Learnings  
**shared** with Management  
and Geoscience teams

**Company has the will and  
process to take actions to  
improve**

Pre- and Post-Drill  
Outcomes analyzed  
technically

Volume Parameters & Pg  
partially calibrated and  
adjusted

Results and Learnings  
**informally shared** with  
Mgmt & Geoscience teams

Company has an informal  
process to improve  
performance

**Pre- and Post-Drill  
outcomes not  
analyzed**

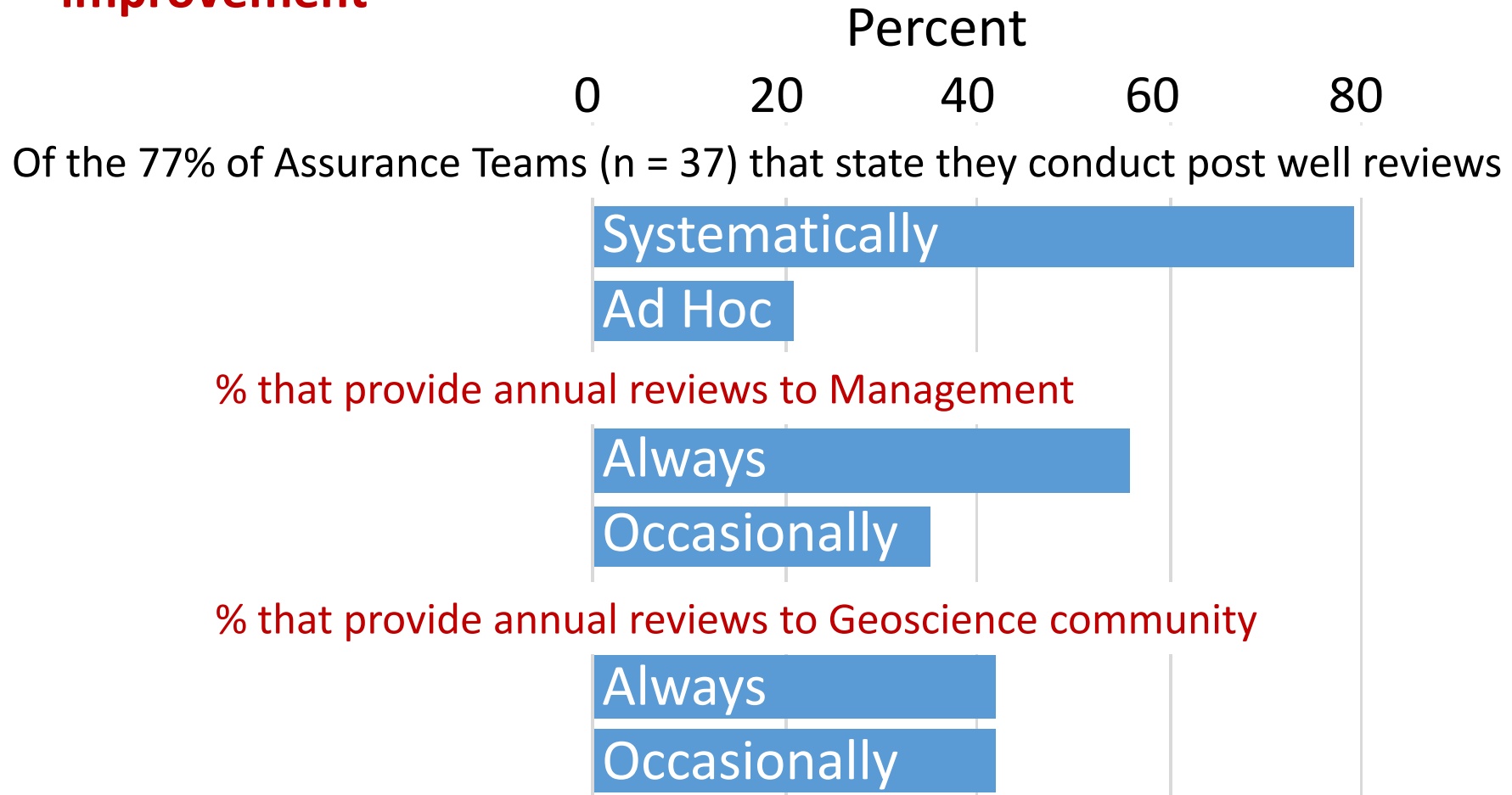
Volumes and  
Parameters & Pg NOT  
Calibrated

Results and Learnings  
**NOT shared** with Mgmt  
& Geoscience teams

**Company has no  
practice to initiate  
improvement**

# How: **Post Well Appraisal** and Calibration

- **Commitment and actions** from Management and the Geoscience community must be put in place **to ensure performance improvement**



n = 37



# Summary of Assurance Practices:

**While there is no single best practice...**

- Effective Assurance teams have the demonstrable support of Management and Exploration Teams...
- **This often leads to improved flow of information**
- Assurance teams add value via effective behaviors to listen, challenge, feedback, document, and lookback
- **Assurance teams leverage that value via sharing and workshops to increase the pace of learning**
- Assurance teams can deliver insights and value back to the company as measured by reliably predictive portfolios

# Exploration Assurance Team



## Best Practices



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# Thank you