CONTRACTOR ASSURANCE SYSTEM TASK TEAM

REVIEW OF PERFORMANCE ANALYSIS FUNCTION IN SUPPORT OF CAS

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SUMMARY:

There is wide interpretation and range of activities associated with performance analysis across the complex. This is a function of factors including site mission, and contractor and DOE site management. Performance analysis is recognized as having an important role in contractor assurance, with strong leadership engagement and use of information provided to support decisions. Improved analytical and visualization tools are being employed to further mature performance analysis activities and impact. Some of the challenges cited include the effort to acquire and format data versus analyzing it; need for more IT support; resource limitations that impact the amount of performance analysis conducted.

There is a general desire to mature performance analysis and that improved integration of data sets will provide enhanced insight into performance issues before they become significant.

PURPOSE:

The EFCOG CAS Working Group established a Task Team to learn about the various approaches and methods for performance analysis used across the Complex. The objective of the Task Team was to provide an information base about these approaches and methods.

SCOPE:

The scope of this effort was DOE-wide, including DOE and Contractors. The focus of performance analysis is as it supports contractor assurance systems.

DEFINITIONS:

DOE Complex: includes DOE offices and laboratories, contractor facilities and both DOE and contractor staff.

NARRATIVE:

A survey was developed (Reference A) to gather information from across the DOE Complex to understand how performance analysis is performed and what best practices could be gathered to help increase the efficiency and/or effectiveness of contractor assurance. A list of contacts was developed from existing EFCOG CAS Group distribution lists. The survey was available in Microsoft Forms or as an Excel spreadsheet. In addition to the survey, staff from several organizations were interviewed. The information gathered during these interviews provided a more in depth understanding of how some organizations are conducting performance analysis.

Survey responses were received from thirteen organizations. Most of the responses were from contractor organizations. The Program Offices the contractors worked for include:

- Energy, Efficiency and Renewable Energy Technologies (EERE) – 1 response
- Environmental Management (EM) - 5 responses
- National Nuclear Security Administration (NNSA) – 2 responses
- Science (SC) – 5 responses

The survey responses were reviewed for common themes as well as areas of variation. Because of the small data set, and the variety in the contractors, DOE mission areas, and local drivers (DOE Site Office

and contractor management) it is difficult to draw complex-wide conclusions. While there was a wide range of interpretations of performance analysis and maturity of practices, a few common themes were observed:

Resources and Tool:

- Resources dedicated to performance analysis varied, which is likely indicative of the wide interpretation of what performance analysis and how the function is structured. It is very common for there to be a central group focused on assurance activities; this group is generally on the order of 10 FTEs. Within that group several organizations indicated from 1-3 FTEs that performed data analysis. Most organizations also cited a network of staff throughout the line organizations that performed local performance analysis and provided performance analysis information to the central group. The distributed staff provide part time (15-25%) effort.
- There was also a wide range of tools used to conduct analysis; some of the more commonly cited included metrics/KPIs, statistical control charts, trend analysis, Tableau, Excel, Microsoft PowerBI, assessment and audits.
- Tools being used for communication include distribution of performance reports, regular performance review meetings, and dashboards or scorecards.

Working Well:

- Most respondents indicated their site is applying improved analytical/visualization tools (i.e., Tableau, PowerBI) to further mature their performance analysis activities, especially in the past few years.
- Many sites note improvement in risk management and better alignment with performance, especially those organizations that have implemented an Enterprise Risk Management framework that proactively manages risk at various levels.
- Organizations have a structured approach to performance monitoring – periodic reporting cycles at different levels of management as well as with the corporate parent and the DOE customer.
- Leadership engagement tends to be strong and senior management often acts on information surfaced through analyses.

Challenges:

- Most sites list data wrangling as one of their key challenges; more time is spent obtaining and formatting data vs. analyzing it (according to Gartner, 90% of our time is spent data wrangling).
- Lack of IT support in terms of gathering data, managing it, and supporting new analytical and visualization tools were all cited as challenges.
- It is important that the Information Technology (IT) function are partners in providing the performance analysis tools, but they should not drive the performance analysis function.
- Time and resources limit the amount of performance analysis conducted
- Obtaining consistent buy-in and level of effort from all involved.
- Establishing data sources to enable “one truth” for the organization.

Data Input to Analysis:

- Operational events/incidents (i.e., ORPS, issues, injuries/illnesses, security incidents, NTS, improvements, radiation problem reports, POMC, causals)
- Performance metrics/KPIs
- Assessment/audit results
- Other program/system health data
- Some of the more mature sites included data from all areas (i.e., financial, strategic, human resources, culture/staff engagement, research impact)

Utilization of Analysis Outputs:

- Many sites noted that the analyses are used to look for and take action on cross-cutting trends/issues/emerging risks before they become significant.

- Analyses are used to drive correction/improvement.
- Support performance reviews and leadership updates.
- Help management to make decisions/adjust processes, training, etc. when needed.

Goals/Aspirations:

- A general desire exists amongst practioners to further mature performance analysis activities.
- Common belief that improving integration and analysis across datasets will provide enhanced insight into performance issues and concerns before they become significant.
- Improving the effectiveness and efficiency of analysis to accommodate every growing data set and more timely analyses.
- Move from a retrospective analysis to predictive analysis.

Potential Good Practices:

- A couple of sites have moved from a decentralized analysis approach where the full CAS team would conduct analyses to a more dedicated performance analysis team that can include performance analysts, statisticians, storytellers, visualization experts, etc.; this could be indicative of the large growth in data and analytics in the past several years.
- Regular review, retirement, and development of metrics/KPIs and analyses to accommodate dynamic work environments.

CONCLUSION:

The responses to the survey show a wide interpretation of and range of activities associated with performance analysis. Most do not appear to have mature analytical functions and tend to be more focused on operational data with lagging indicators and/or are simply conducting assessments, managing issues and collecting data for regular management review. Some appear to be more focused on distribution of analyses vs. actual consumption and discussion of analyses resulting in action.

Data without a decision is a distraction.

The volume and complexity of data is growing as technology advances at a rapid pace. This data, when analyzed, can help to better understand and improve performance. And there are more intuitive and easier to implement tools accessible to more people across an organization to conduct analyses. This offers great opportunity to better understand performance and provide management with timely analysis that helps enable decisions. But it also drives the need for a more structured and enterprise-focused approach to performance analysis with appropriate governance to assure integrity of data and consistent use of data to understand and drive performance.

The trajectory of maturation includes bringing managers along to use data and facts instead of their gut an/or anecdotal information. Managers need to trust the data, and then recognize the importance of performance analysis as a tool that supports decision making. When management becomes comfortable with the ability of the performance analysis function and confidence in the information it provides, there is an increased demand for more information.
This WP should be considered an initial effort to understand how performance analysis is being conducted in support of contractor assurance. It is limited by the small number of survey respondents. As a result, the following is recommended:

- Further study of performance analysis as it is being practiced and future plans for maturity
- Creation of a community of practice or sub group for performance analysis and visualization practitioners

REFERENCES

A. Performance Analysis Survey

The survey consisted of the following questions:

1. What organization are you affiliated with?
2. What is the size of your organization (total number of employees and subcontractors)?
3. What is the mission scope of your organization?
4. What DOE Office is your organization affiliated with (Science, NNSA, EM, etc.)? If none, enter N/A
5. Which of the following is your CAS based on:
    a. DOE O 226.1B
    b. H Clause
    c. NNSA Policy on CAS, similar to O 226
    d. NNSA SD 226.1C
6. Have you gone through a joint DOE/Parent CAS Review (2018), and if so, what lessons learned were gleaned?
7. Have you completed a CAS Effectiveness Review utilizing either the EFCOG Maturity Model or Effectiveness Review? Indicate which one. What lessons were learned?
8. How do you, as part of Contractor Assurance, assess risk(s) to your mission?
9. How does your organization define Performance Analysis?
10. What is the scope and structure of the Performance Analysis function?
11. How many resources support Performance Analysis (FTEs)?
12. Who is the audience for your Performance Analysis products (Parent Company, Senior Management, Mid-Management, Site Office, Other DOE?)
13. Do you include Business risks in your performance analysis process? If yes, how is it evaluated?
14. What inputs/data sources do you consider when analyzing performance?
15. What tools and analytical methodologies are used when analyzing performance (e.g., KPIs)?
16. Do you have an integrated set of metrics? If yes, describe the structure.
17. How are KPIs or critical metrics established?
18. What is the process for revising and eliminating KPIs?
19. How do these metrics support decision making?
20. How do you communicate results of Performance Analysis?
21. How is the Performance Analysis output utilized by your organization?
22. How has the Performance Analysis function matured? What drove the changes?
23. What successes/challenges have you encountered with Performance Analysis?
24. Who have you benchmarked and learned from in developing your Performance Analysis function?
25. Other comments?

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