

Behavioral Performance Intelligence

...A missing link to Operational Excellence

By Bruce J Hayes

Forward

“Cultural norms tend to be fairly resilient...the norms bounce back into shape after being stretched or bent. Beliefs held in common throughout an organization resist alteration”.¹

While watching a recent airing of the television program NOVA on the Public Broadcasting System (PBS), I was reminded of the importance of human behaviors and culture in highly technological processes and projects. The program was a documentary dealing with the Challenger and Columbia Space Shuttle Accidents and the investigation into the causes. One of the key findings in the investigation was that, despite detailed review after Challenger, the Columbia mission suffered from similar issues related to culture, decision-making, organizational causes and historical behaviors. In fact, four full chapters, almost the entirety of Part II on the Challenger Accident Cause, dealt with non-technical, behavioral issues.

When striving for Performance Excellence many organizations focus solely on tools and technology (“hard skills”) and often dismiss the importance of the so-called “soft skills”. The NASA investigations illustrate, in an extreme way, the consequences of discounting this importance. For most of us the consequences of execution failures manifest themselves as poor execution and performance with business consequences. In extreme cases they create dangerous and life threatening scenarios. We can all learn from the NASA story by seriously considering how to objectively and regularly characterize the human side of our organizations to effect changes commensurate with business and stakeholder needs and requirements.

Computers vs. Humans

In today’s rapidly changing and dynamic business environment, technology is colliding with human resource on a daily basis. While we rely more and more on technology to do everything from rapid calculations to vacuuming the carpet, humans are being left to pick up the pieces when technology does not work as intended. Often, technology based programs are implemented without regard for the humans who must oversee the systems performance. Performance gaps are created when humans create workarounds to technology solutions or violate process rules due to conflicting priorities. This could be due to many things including the lack of training, poor design requirements processing, lack of understanding of existing rules, poor design of the technology or just a lack of

¹ Howard E. McCurdy, Inside NASA, John Hopkins University Press, 1993, pg24

communication (written and verbal). Our conventional data collection systems usually do not report these types of anomalies and problems. But they are very real root causes to missed performance targets. Process behaviors need to be understood rapidly so that their root causes are understood and dealt with to maximize the efficiency and performance requirements of a demanding business environment. This emerging field is defined as Behavioral Performance Intelligence (BPI).

Creating Understanding Through Assessment

In recent years, when corporations and organizations desired to roll out major initiatives, projects and programs of any kind, an assessment or characterization of the subject organizations strengths, weaknesses, opportunities for improvement and performance gaps is often conducted. Most would agree that this is a logical starting point and good baseline setting activity. As Consultants and / or internal leaders, our intuition and training tells us to define the problem before trying to solve it, or at least it should. This applies at all levels of problem solving (Strategic, Organizational, Cultural, Tactical and Project).

Typical assessments are executed by defining an appropriate sample of a target population, which is then subjected to interviewing (questioning) through a “person to person”, telephone or paper based survey. Observations and results are then compared (often subjectively) to a Body of Knowledge (BoK) or standard of some type. An “expert” (often a consultant) organizes the responses and creates a feedback report (usually a PowerPoint presentation). Some type of scoring or ranking is often employed to make the responses quantitative and easy to organize and prioritize.

Measurement System Error (MSE)

Inherent in these types of assessments is measurement system error (MSE) in three (3) basic forms.

1. Interviewer bias created by 1) the natural knowledge and skills of the person conducting the interview / interpreting the results and, 2) bias in their opinion about how things should or could be done based on their experience. This may lead them to ask questions or interpret results in a context that makes sense to them but not the interviewee or the organization under review.
2. Interviewee bias created by 1) fear of the process (being interviewed) and the consequence of providing a “wrong” answer or 2) providing responses relative to how things should or could be performed (rather than reality). Either can lead to a “false positive” when results are analyzed and reviewed.
3. Sampling bias created by poor sampling techniques, small samples due to budget restrictions, or management tampering with available interviewee populations (usually to get a good score).

Training and experience tells us that we must mitigate MSE to acquire accurate data with which to apply analytical techniques for problem solving. Proceeding with MSE present in the assessment process places results and conclusions at significant risk leading to ineffective or even harmful actions (or perhaps no action at all).

Reducing Measurement System Error (MSE)

Web Technology is now being used to effectively deal with the large degree of MSE in assessment systems. First, we can now “cyber-interview” a large number of respondents (up to 100%) with a fraction of the workplace disruption created by having “strangers in the house”. This helps with 2 sources of MSE (sample size and tampering) and adds a layer of efficiency (web based) to the process. The questions related to the BoK being examined will now be consistently “asked” and interviewees will be free from fear, increasing the probability that they will answer honestly and factually. This method also eliminates the potential “context” problem introduced by the expert opinions and grey areas of dialog. When interviewees are not under an interview schedule constraint, they can provide more thoughtful and complete answers, also improving accuracy.

Web based systems also help to integrate and correlate the questions being asked, to documented standards, best practices and other requirements. This helps to provide a basis for accurate and quantitative scoring to be used later for prioritization and root cause analysis. Based on the score achieved, the best practices can also be used to drive specific recommendations and remedial actions.

Designing Assessments

The design of an assessment including scope, context and content is a critically important task. Organizations should link the need and purpose of an assessment to a critical path area. Topics and functions commonly assessed include: Quality, Safety, Operations, Regulatory Compliance, Engineering, Culture, Security and many others. Need should be closely correlated to items such as performance trends, new critical requirements, chronic problem areas, or a life changing event (accident or other major failure).

Questions should be developed based on an approved standard, best practice BoK, regulatory requirement or in the absence of these, a team of authorized experts. Careful consideration to the organization of the questions, into clusters, categories or best practices will enable a logical “drill-down” when results are compiled. Various types of questions should be employed including scored, multiple choice and open ended. All of these responses will be important when correlating and prioritizing actions related to the responses.

Questions should be aligned with the respondents who are supposed to know the most about the particular area, function or topic being explored.

Serving BPI Assessments

In the provisioning and serving of assessments, communications is a key driver of success and accuracy. Management must clearly communicate the need for each respondent's accurate answer by describing in business terms why the assessment is important. If respondents do not believe their input will be taken seriously, they will be less likely to spend adequate time and thought on their answers. Like any good communications strategy, multiple lines of communication should be used and the message sent more than once to emphasize importance. One effective three (3) tier communication strategy is as follows:

1. A carefully worded and personal message to all employees from a senior officer articulating need, purpose, expected outcome and follow up commitment.
2. Coverage by each Manager / Supervisor in a regular departmental meeting reinforcing the message from 1 above, with a departmental spin.
3. A reminder note a day or two before the assessment goes live.

Assessment Analysis

Web Technology can now enable several things to happen. With accurate and complete scored data now resident in an organized database, visual statistical analysis tools can be invoked to "see" patterns in the data, drill down to detailed causes, organize and sort data demographically and prioritize needed actions. Further, reports and information are stored and available for recall, further analysis and archive.

Conclusions

Behavioral Process Intelligence is an important field of study. Identifying performance gaps related to the actions of human decisions, the degree to which they embrace (or do not embrace) policies, standards, technology and instructions are all critically important. Maximizing investments in technology, tools, processes and training hinge on the way humans will ultimately use them. When organizations invest in acknowledging, characterizing, measuring, correlating and analyzing the human side of performance they uncover critical success factors usually missed by those that don't. In the end, the massive technological undertaking of manned space flight was not compromised in total by design or material flaws, but by the decision process and the culture that failed to keep up with the external demands of the program in a balanced way.

About the Author

Bruce Hayes has been involved in driving Operational Excellence and Quality Improvement for over 25 years. During his tenure at Motorola his was part of the MBNQA winning team and won 3 CEO Quality Awards for performance excellence. He is currently co-founder of NeuraMetrics, Inc. where he has helped to architect a best in class, web based assessment platform. For information about this article you may contact Mike St. Angelo at mstangelo@neurametrics.com