

Report of the LANL Fellows Committee on Metrics for the Technical/Business Interface

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To: LANL Director Dr. Michael R. Anastasio
Members: Malcolm J. Andrews (Chair): mandrews@lanl.gov, 505-606-1430
Robert Benjamin
David Forslund
Benjamin Sims (consulting sociologist, CCS-6)

1. Charge from the LANL Director Dr. Mike Anastasio

“Metrics for the Business-Science Interface. I appreciate your help in the development of metrics for science and technology excellence at the Laboratory. There is an important piece of unfinished business: we need a metric for measuring efficiency with which S&T staff and S&T leadership spend their time on the science and technology that they are trained to do. We need to define the metric called out in STB/Peer Review & Metrics' report on "Assessment of Science, Technology and Engineering at Los Alamos National Laboratory:" time spent on ST&E by staff and technical leadership. This metric requires careful definition and quantification; but if we succeed, I can more effectively lead the Lab towards higher efficiency and productivity. I would welcome a workable plan to measure the business-science interface with minimal lag time.”

2. Position Statement

We take a perspective of being advocates for technical excellence and productivity at LANL. The anticipated audience for our final report is the LANL Director Anastasio and his management team. We have chosen to focus on a single overarching Principal Metric for the Technical/Business Interface:

The percentage of time spent by technical staff members on administrative and business duties.

We believe a reasonable and desirable goal for this time centric Principal Metric to achieve and maintain is 10% - 15%. To achieve this essential goal we urge that the status of this Principal Metric be easily accessible not only to managers at all levels, but also to technical and business staff.

In association with the Principal Metric we propose the following question for participants to facilitate/capture the intent of the metric, with suggested guidance for the question in the subsequent paragraph:

“On average, what percentage of your work time do you spend on business and administrative tasks?”

We propose that to capture the intention of Principal Metric, with the question above, guidance is needed. In particular, technical/business interface time consuming processes to be considered in response to the question might include: purchases, recruitment, travel, training, computing & support. However, those *not to include* when answering the question should be: health & safety (being considered elsewhere), proposal preparation, conference and meeting attendance, job searches, and normal activities associated with R&D).

This simple but powerful metric is a strong indicator of the health of the Technical/Business Interface in supporting technical productivity. Potential ways to collect data for the metric is through Time & Effort or through group level reports.

The Fellows recognize the need for metrics. The Principal Metric is intended to facilitate a measure of the strengths and weaknesses of the interface between the technical staff and the business administration of LANL, with a view to higher efficiency and technical productivity. Over the last six (6) months we have collected extensive input from the Fellows, Marc Clay, TSMs', line management and reviewed other approaches to metrics such as those used in Universities. It has become evident that several intrinsic implementation difficulties present themselves when trying to create suitable tightly focused metrics that include: how to "collect measurements" without overburdening; how to "use" the output from the metric; and how to "update" the metric once defined. However, we believe for the future health and success of LANL the Principal Metric warrants the management effort to support and maintain this crucial measure of the Technical/Business Interface.

As part of our development we identified five (5) central processes that repeatedly surfaced as significant drain on TSM time, namely:

- Purchases
- Recruitment
- Travel
- Training
- Computing & support

Not included are safety and security as these processes will be addressed by other committees. These five (5) processes then formed the core of our analysis and final determination for a Principal Metric. Indeed, Appendix A contains a summary of key metrics that we identified for each of these processes, and these metrics could serve in a supporting role to the Principal Metric.

3. Guidelines Used for this Report

As part of our approach to identify Technical/Business Interface (TBI) metrics we formulated the following guidelines that might be of value elsewhere within the LANL administration:

1. Identification of metrics with well defined objectives (technical quality etc.) based on time and quality of technical achievements.
2. Our metrics assess the interface between technical and business processes that support technical achievement.
3. We will strive to identify necessary data for the metric.
4. We will develop metrics that address (1), and that might later be adapted for the "Dashboard."
5. We will approach this task from the perspective of advocates for technical excellence at LANL.
6. We will emphasize the need to focus on metrics that facilitate technical achievement, rather than bureaucratic mandates.
7. We will strive to make TSMs influential when scoring whether the TBI interface is succeeding, but not burden TSMs with the onerous task of entering data into a spreadsheet (such as the "dashboard").
8. Since the primary business of the LANL is technical, and our essential product is technical credibility, we anticipate the use of TBI metrics to help guide the business sector to support the work of TSMs.

4. Closure

We close by re-affirming strongest support for the formulation of metrics for the Technical/Business interface, and our highest recommendation of the Principal Metric described at the start of this report.

APPENDIX A: Summary of Metrics for Key Processes

METRICS FOR KEY PROCESSES

Process	Requirement	Metric	Data
PURCHASES	Minimize time to complete correct purchase	Time from submission of a purchase order until the correct order is placed.	Interrogate purchase system, if data exists, or seek customer feedback on transactions (questionnaire)
RECRUITMENT	To give a good impression while minimizing time and maximizing recruitment success	Time from initial contact with a job applicant until the applicant is notified of interview or rejection	Questionnaire
TRAVEL	Minimize time spent and errors.	Turn-around time from request to correct reservation	Interrogate system; TSM questionnaire.
TRAINING	Maximize usefulness & quality of information for time spent.	Relevance and satisfaction of training to meet requirements, and time taken.	Questionnaire
COMPUTING SUPPORT	Minimize time of reduced productivity.	Time from first request to resolution	CCN ticket system data

Three other important processes considered were “Career Support”, “Time and Effort”, and “Intellectual Property”, however, it was felt that either the time element of these processes affected too small a number of TSMs’ (Career Support, Intellectual Property) or were already well optimized (Time and Effort). Furthermore, “Safety” and “Security” are additional important administrative processes that increasingly drain TSM time, but are being considered by other committees.

During deliberations about the Technical/Business Interface we noticed a need for similar metric considerations for the Technical/Sponsor/Business Interface, and suggest that this should be considered for a future charge.