

Barclay Brown, Behavioral Economics and the Design of Systems Engineering Measures

Abstract: In pursuing a comprehensive approach to the measurement of systems engineering and systems development work, we must face difficulties in both theory and practice. The central questions we must answer are:

- What should we measure?
- How should we measure it?
- What does it mean?
- How will measuring this affect behavior?

Most work in the area of measures focuses on the first two questions. The field of data analytics and interpretation focuses on the third, and the field of behavioral economics is interested in the fourth. This paper will present some key ideas about how measures can be designed and conducted, applying some insights from these diverse fields. First, we focus on current practice, as assessed in a series of informal interviews conducted by the author in 2011-2012. The goal was to understand how systems engineering is measured in current practice and how those measures are used. Then, we look at the question of how measures are designed, their component parts and how meaning for measures can be determined. Last we consider the unintended consequences of applying measures—the behavioral economics perspective. Some guidelines will be suggested for the successful design of measures that avoid or minimize unintended consequences.

Author:

