We measure, therefore we ... ???

Performance metrics for OOMD

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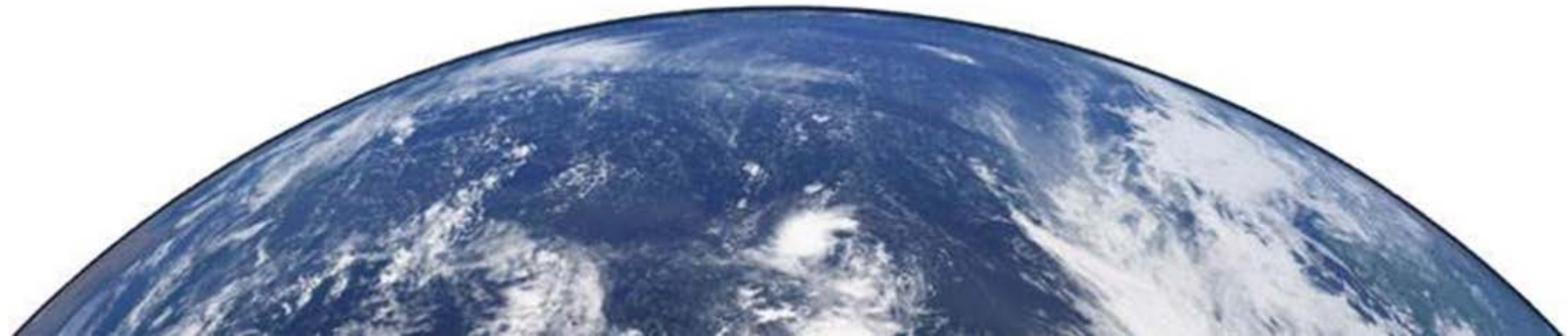


Performance and Metrics

"You can't manage what you can't measure"

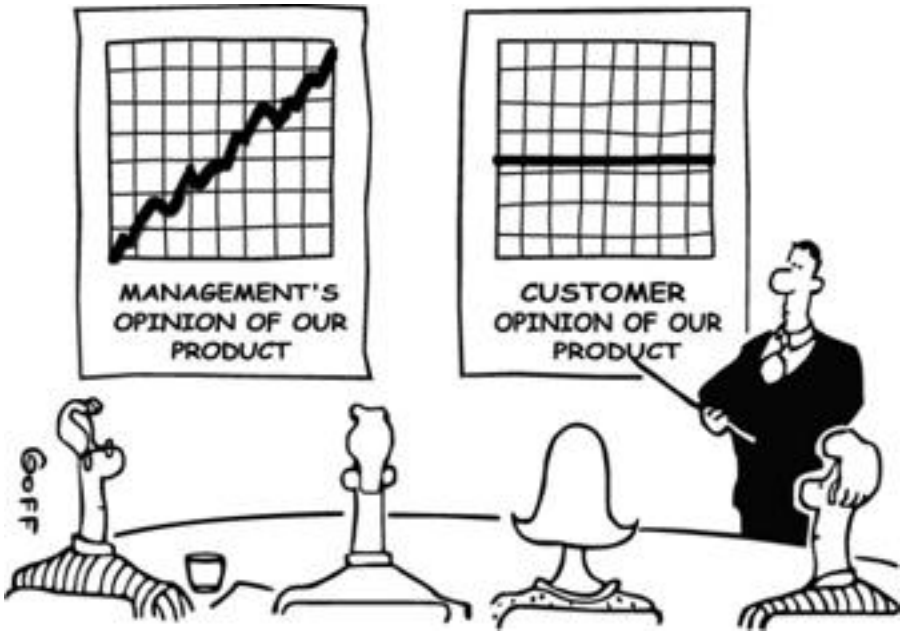
"Not everything that counts can be counted. And not everything that can be counted counts."

Our Goals Today

Why are we undertaking this?
How are we thinking about doing this?

What are we measuring now?
Does this make sense?

What should the next steps be?

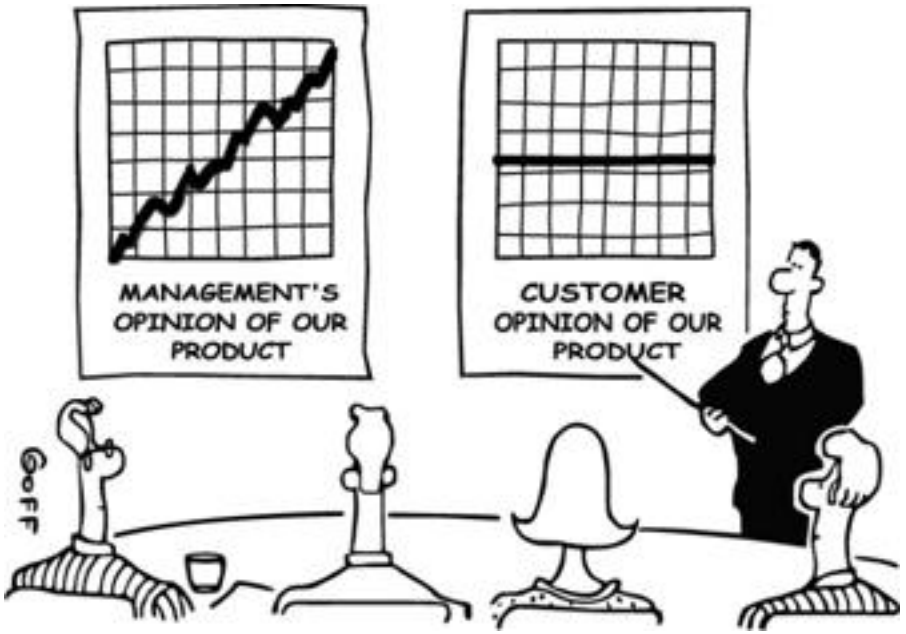


What's our Frame of Reference?

COD Strategic Plan (2014)
Vision, Goals, Objectives

Performance Metrics as defined by Community
Of Investigators
(Of Users)

Lots and Lots and Lots of Approaches



NRC 2007 Approach to Metrics

* Evaluating Progress of the U.S. Climate Change Science Program: Methods and Preliminary Results (NRC, 2007)

- Process – measures a course of action
  - Leader(s) with sufficient authority, functional review process
- Input – tangible quantities put into a process
  - Sufficient resources
- Output – measures products or services delivered
  - Scientifically sufficient, accessible data and research results
- Outcome - measures results that stem from the use of outputs and the influence on stakeholders
  - RTO, improved predictions, new areas of discovery
- Impact – Long term societal, environmental, economic

What are we measuring now?

* Evaluating Progress of the U.S. Climate Change Science Program: Methods and Preliminary Results (NRC, 2007)

- Process – measures a course of action
  - Program Reviews
- Input – tangible quantities put into a process
  - Number of platforms, outyear planning (leading)
- Output – measures products or services delivered
  - Data availability, data uptake by modeling centers
- Outcome - measures results that stem from the use of outputs and the influence on stakeholders
  - Scientific publications, improved predictions
- Impact – Long term societal, environmental, economic

What do we hope to achieve?

Vision

WHAT WE HOPE TO ACHIEVE

A sustained, comprehensive, and responsive global climate observing system that seamlessly delivers information and products to our partners and users within and beyond NOAA, and that provides a critical foundation for climate, weather, and environmental decision making

Desired Characteristics
Outputs
Stakeholders/Users
Outcomes/Impacts

What do we hope to achieve?

Strategic Goals

•1.0 Observing Systems

•Sustain an evolving *in situ* global observing system adequate to monitor, understand, and support prediction of the changing Earth system in collaboration with national and international partners. (Inputs, Outputs, Outcomes)

•2.0 Information and Products

•Provide a broad and expanding range of observation-based products and analyses that describe global and regional patterns of climate variability and change that address the needs of our broad range of customers. (Outputs, Outcomes)

•3.0 Innovation

•Leverage innovative practices and new technologies to improve system efficiency, timeliness, effectiveness, resilience/reliability, and catalyze new applications of observational capabilities. (Process, Outputs, Outcomes)

•4.0 Partnerships

•Collaborate with interagency, federal, international, academic, and private sector partners to develop solutions for sustaining and evolving the global *in situ* observing system and leverage federal observing investments. (Process, Outputs, Inputs)

•5.0 People and Culture

•Strengthen the COD workforce to sustain leadership in global climate observing and related research.

Where we are now

Suggestions for Performance Measures (FY 2017-2020)														
PI	**Project Title**	**Program**	**Program Manager**	**Measure of Performance**	**FY2015 Actual**	**2016 Actual**	**2017 Actual**	**2017 Planned w/ flat budget**	**2018 flat budget**	**2018 maintain capabilites**	**2019 flat Budget**	**2019 maintain capabilities**	**2020 flat budget**	**2020 maintain capabilities**
XXXXX	**XXXX**	XXXX	XX	Percentage of days with Florida Current Volume Transport estimate		>85% daily data return	>70% daily data return	>85% daily data return	>60% daily data return	>85% daily data return				
XXXXX	**XXXXX**	XXXXX	XX	Number of dropsonde cruises conducted		8-10	4-6	8-10	2	8-10				
XXXXX	**XXXX**	XXX	XX	Number of Walton Smith cruises completed		4-5	3	4-5	2	4-5				
XXXXX	**XXXX**	XX	XX	Number of Class one surveys completed		12-31	1	12-31	1	1				
XXXXX	**XXXX**	XX	XX	Time until data quality controlled and delivered		7 months	8 months	7 months	9 months	7 months				
XXXXX	**XXXX**	XX	X	Amount of time required to recover from IES instrumentation loss		3 years	5 years	3 year	7 years	3 year				

124 suggested performance measures in FY17 work plans

- Processes (produce monthly estimates, incorporate new data sources)
- Outputs (number of….)
- Outcomes (data assimilated, publications)
- Inputs captured in outyear/ leading indicators
- Outcomes/Impacts implicit

Developing Meaningful Metrics: Can we meet our objectives?

- A Performance metric is something that can be counted and compared; it provides evidence of the degree to which an objective is being attained over a specified time
- At a high level, we have these from the strategic plan/ guiding questions
- At a more granular level, each supported project should:
  - Have **individual objectives** (explicitly annual report and/or work plan)
  - Support at least one of the **OOMD level objectives**
  - **Once objectives are clearly defined, what are the processes, inputs, outputs needed to meet it? What are the outcomes and impacts of meeting that objective?**

Can we meet our objectives

- Step 1: **define your objectives**
- Step 2: evaluate objectives
- A meaningful objective:
  1. It will contribute to the OOMD strategy (where do they contribute to strategic plan)
  2. It is important and will it make a difference
  3. It is a single objective
  4. You have some level of control to influence the result
  5. It is something that can be measured

Examples from the OOMD Strategic Plan

- Articulate the vision of a future observing system that exploits new technologies
- Formulate COD criteria for prioritizing system evolution based on observing system requirements (1.2), COD's Guiding Questions (p. 4), and NOAA needs.
- Advance observing capabilities for the global tropics, especially in the Tropical Pacific.

Starting where we are

- Each project has **objectives**
- For each objective:
- What **processes** are necessary to achieve it?
- What **inputs** are needed?
  - Do you have sufficient resources now?
  - Do you expect to have them moving forward
  - A *lagging metric/indicator* reports on progress
  - A *leading metric/indicator* can help with planning
    - Lagging: number of floats deployed this year
    - Leading: number of “spares” on hand
- What **outputs** are necessary to meet the objective?
- What **outcomes will result** from meeting the objective?
  - E.g. a new paper, scientific knowledge, new users
- What **Impacts** will meeting the objective have?