

Presentation for the American Evaluation Association:

Performance Measurement for Research Improvement

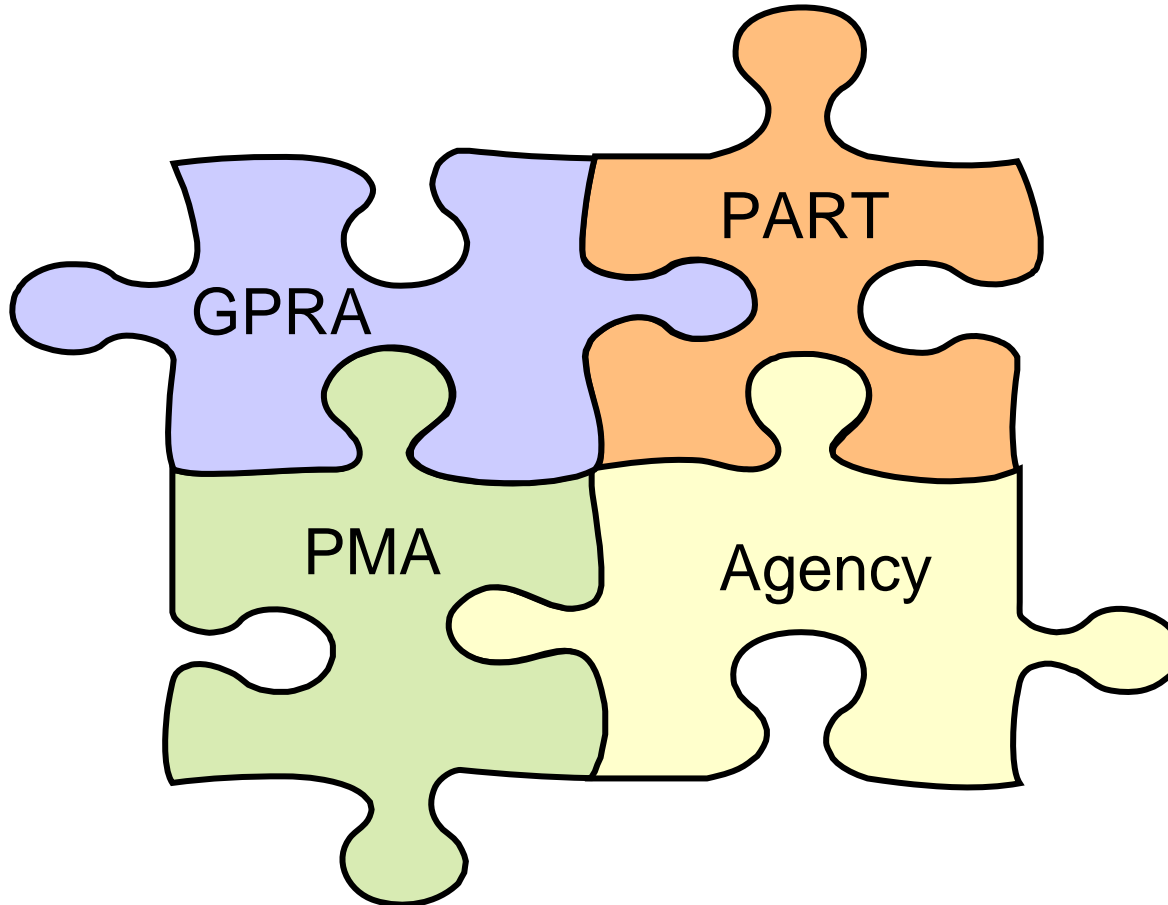
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Office of Research and Development*



OVERVIEW

- ❖ Accountability within the Federal government
- ❖ EPA/ORD progress in performance measurement
- ❖ Performance management and improvement

Accountability within the Federal Government

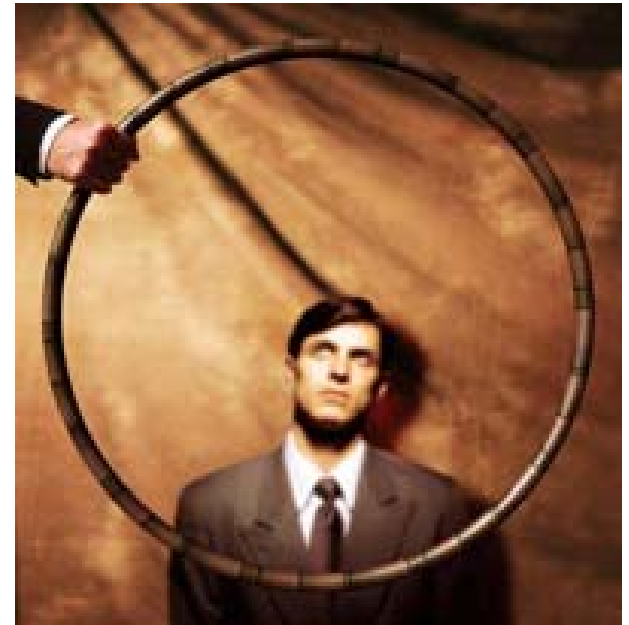


Federal Government

Government Performance and Results Act of 1993 (GPRA)
<http://www.whitehouse.gov/omb/mgmt-gpra/gplaw2m.html>

Program Assessment Rating Tool (PART)
<http://www.whitehouse.gov/omb/part/>

President's Management Agenda (PMA)
<http://www.whitehouse.gov/results/>



EPA Stat Quarterly Report

<http://www.epa.gov/performance/>

- ❖ Quarterly performance improvement tool focused on key measures critical to managers in EPA
- ❖ A more limited number of measures than GPRA/PART, focused on outputs and outcomes (often by organization, not just program/media)
- ❖ Important to EPA receiving the 2007 Presidential Award for Management Excellence



EPA/ORD Progress in Performance Measurement



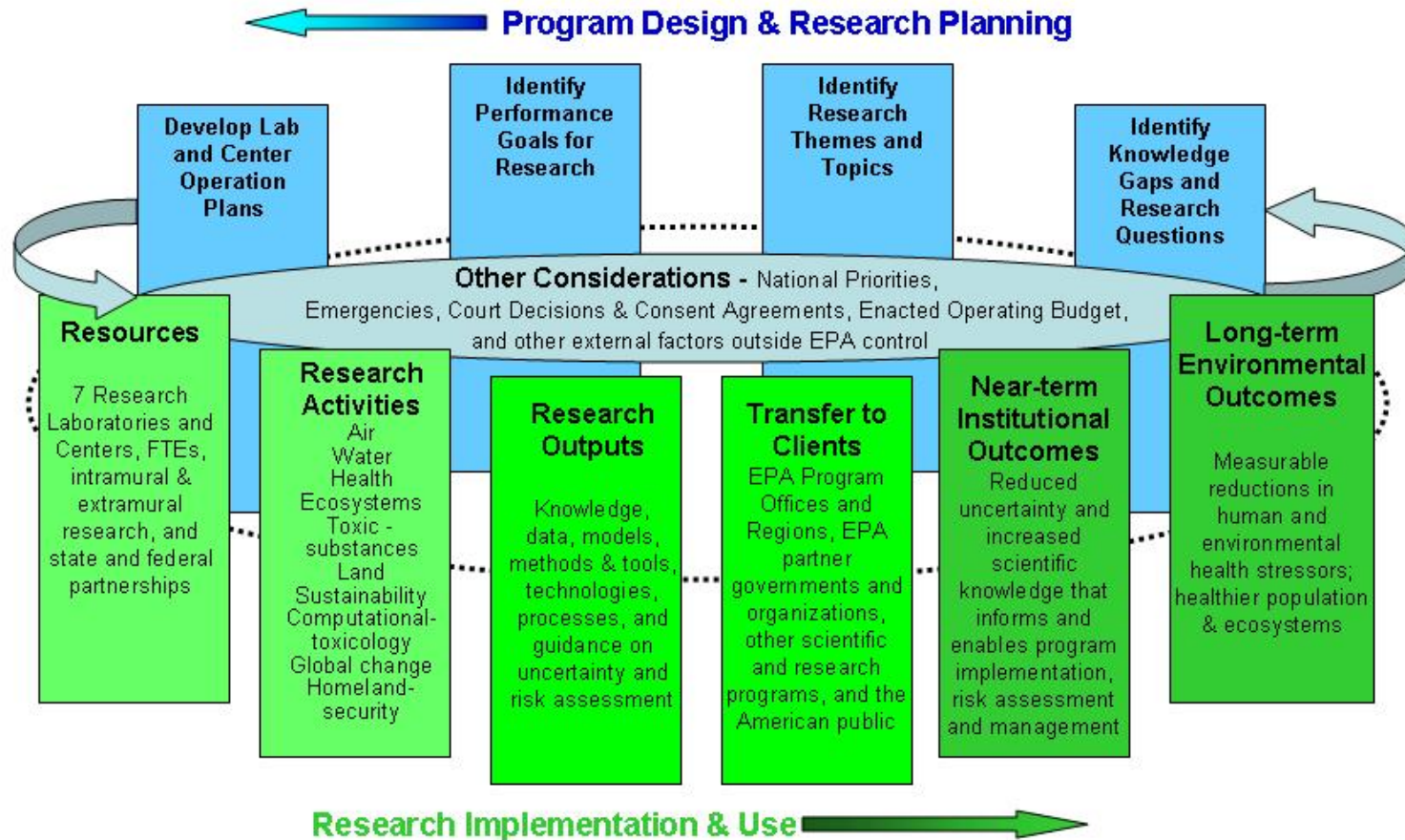
ORD Research Programs

- ❖ Office of Research and Development (ORD) Mission:
 - Produce relevant, high quality research products that are used to make scientifically-sound decisions to improve human health and the environment
 - Approximately \$540 million research portfolio

- ❖ Multi-Year Research Plans:

- | | |
|---|--|
| <ul style="list-style-type: none">• Clean Air Research Plan• Drinking Water Research Plan• Water Quality Research Plan• Land Research Plan• Human Health Risk Assessment Plan | <ul style="list-style-type: none">• Endocrine Disruptors Research Plan• Global Change Research Plan• Human Health Research Plan• Ecological Research Plan• Safe Pesticides/Safe Products Research Plan |
|---|--|

Logic Model for ORD Research Planning and Management



Developing a Balanced Suite of Measures

- ❖ Measuring across the logic model to complement evaluation:
 - **Annual Measures:** Focus on outputs (performance)
 - **Biennial Measures:** Focus on outputs/outcomes (quality, relevance)
 - **Long-Term Measures:** Focus on outcomes (quality, relevance, performance)
 - **Efficiency Measures:** Focus on inputs/outputs (performance)

Annual Output Measures

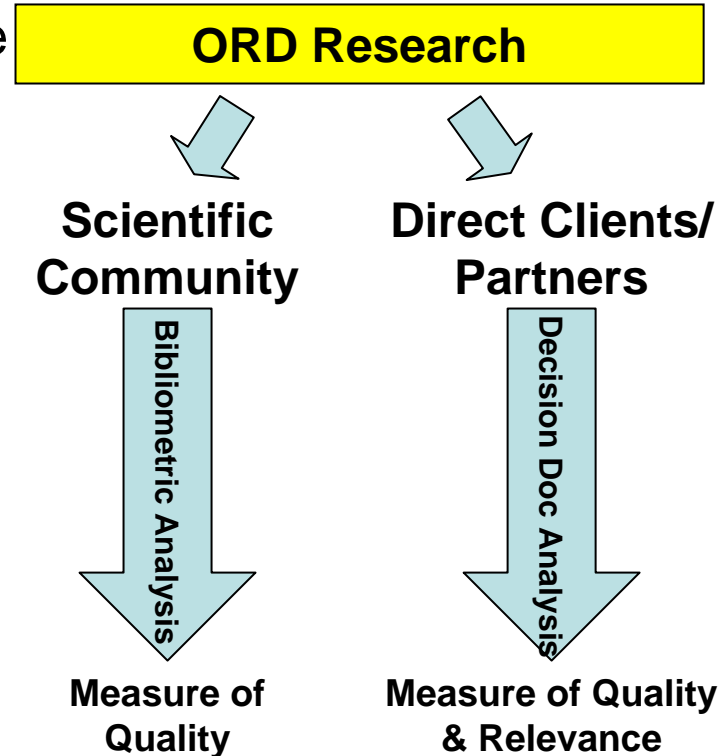
- ❖ ORD programs track % **on-time completion of research milestones** by long-term goal
- ❖ Strengths: measurable, useful planning and communication tool, demonstrates progress toward long-term outcomes
- ❖ Weaknesses: milestones must evolve with research, challenge to ensure ambitiousness, not direct reflection of meeting client/partner needs

**% of Key Research Management Objectives On Schedule
EPA Labs and Research Centers (EPASat—3rd Qtr FY 2008)**

	Q 407	Q1	Q2	Q3
<i>National Exposure Research Lab (NERL)</i>	100%	100%	100%	100%
<i>National Health & Environmental Effects Research Lab (NHEERL)</i>	100%	100%	98%	98%
<i>National Risk Management Research Lab (NRMRL)</i>	100%	100%	100%	97%
<i>National Center for Computational Toxicology (NCCT)</i>	50%	100%	100%	100%
<i>National Center for Environmental Assessment (NCEA)</i>	89%	100%	96%	92%
<i>National Center for Environmental Research (NCER)</i>	92%	95%	89%	89%
<i>National Homeland Security Research Center (NHSRC)</i>	100%	100%	100%	100%
<i>Immediate Office of the Assistant Administrator (IOAA)</i>	NR	100%	67%	67%

Biennial Output/Outcome Measures

- ❖ ORD programs conduct bibliometric and decision citation analyses as well as partner surveys, tracking % citation rates and % partner satisfaction
 - ❖ Strengths: measurable; demonstrate quality, relevance, use
 - ❖ Weaknesses: costly, challenge to bridge time lag between research and citation/use, difficult to interpret and identify meaningful targets
- *ORD spends approximately \$250k annually in contract support for these performance analyses*



Bibliometric and Decision Analyses

- ❖ Assess the extent to which ORD research is cited in academic journals and regulations/decisions
- ❖ Examine 10-year range of publications/products (>1,000) for each program
- ❖ Decision analysis piloted at the start of 2008 using web search tools and a software program that automates the process
 - 23% of ORD publications are highly-cited and published in high-impact journals
 - Decision citation rates range between 0-20% for programs analyzed to date

Partner Surveys

- ❖ Piloted in late 2005, but initiated systematically for all programs at the beginning of 2008
- ❖ Serve both to **inform impact evaluations** AND to **guide program management/improvements**
 - >55% of partners report that ORD research impacts decisions that improve human health and environment
 - >85% of partners are satisfied with scientific support provided by ORD
 - Two-thirds of partners are not satisfied with communication and involvement in science planning

Long-Term Outcome Measures

- ❖ As part of each program evaluation, ORD's Board of Scientific Counselors (independent expert panel) assigns a **qualitative rating** and provides a **summary assessment** of progress for each long-term goal (LTG)
- ❖ Strengths: focused on **relevance, quality, and effectiveness/impact**; adds clarity to evaluation reports
- ❖ Weaknesses: adds one more aspect to evaluation/peer review, challenge to ensure ratings are meaningful, challenge to ensure focus on *content* of ratings and *progress*

Long-Term Outcome Measures—Methodology

ORD Program Rating Categories:

- *Exceptional*: Program is addressing the right questions, meeting all/ exceeding some of its goals, science exceeds expectations for quality and speed.
- *Exceeds Expectations*: Program is addressing the right questions meeting all of its goals, science is competent or better and exceeds expectations for either quality or speed.
- *Meets Expectations*: Program is addressing the right questions, meeting most of its goals, science is competent or better and timely.
- *Not Satisfactory*: Program is failing to meet a substantial fraction of its goals, the questions being addressed are inappropriate or insufficient to meet the intended purpose, or the science is of low quality.

Long-Term Outcome Measures—Baselines

ORD Research Program(s)	Rating(s)
Safe Pesticides/Safe Products	Exceeds Expectations (LTG 1); Meets Expectations (LTGs 2 & 3)
Human Health Risk Assessment	Meets Expectations (LTGs 1 & 3); Exceeds Expectations (LTG 2)
Science and Technology for Sustainability	Exceeds Expectations (LTG 2); Meets Expectations (LTG 3)
Human Health, Ecological	Meets Expectations (progress rating only)
Endocrine Disrupting Chemicals, Clean Air, Drinking Water, Global Change	Exceeds Expectations (progress rating only)

Efficiency Measures

- ❖ ORD has a variety of **process measures** used to manage resources more efficiently
- ❖ Strengths: focus on inputs relative to outputs
- ❖ Weaknesses: difficult for research, “right measure” challenge for a diverse mission/organization, must be balanced with measures of quality and relevance

- ❖ EPA has engaged the National Academy of Sciences and other Federal agencies in ongoing dialogue to determine the best approach for assessing efficiency

Performance Management and Improvement



Interpreting Data and Setting Meaningful Targets

- ❖ Annual/Biennial/Efficiency Measures:
 - Need trend data
 - Must conduct benchmarking
 - Focus on entire suite of measures

- ❖ Long-Term Measures:
 - Collect baseline data
 - Must conduct benchmarking
 - Focus on content rather than ratings/scores

Steps Toward Improvement

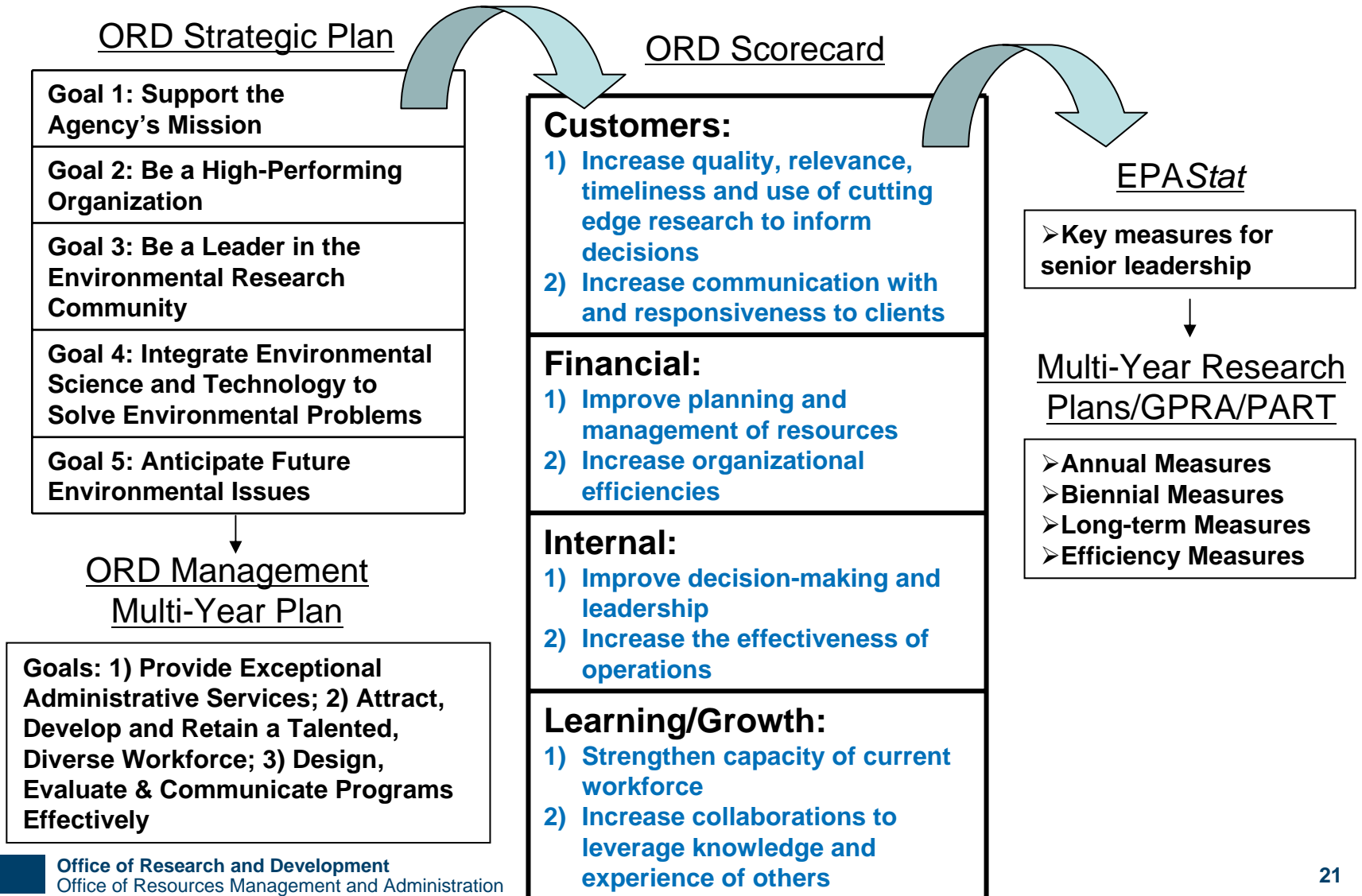
- ❖ Leverage performance data, especially **survey and evaluation feedback**:
 - Respond to input from partners and stakeholders
 - Address recommendations from experts and peer reviewers

- ❖ Incorporate performance data/feedback into **science policy**:
 - Establish linkages between performance and budgeting
 - Explore/develop tools to inform science investments and decisions

Linking Mission/Success with Accountability

- ❖ Establish concrete mechanisms to hold senior leaders accountable for performance
- ❖ Must focus on a limited number of measures that are strategic
- ❖ Capture all aspects of organizational performance, not just traditional outputs/outcomes
- ❖ ORD is **implementing a scorecard** in 2009 that provides a strategic framework for measuring success and ensuring accountability:
 - Customers (impact decisions and science)
 - Financial (increase % of resources for core mission)
 - Internal (improve management of operations)
 - Learning/Growth (improve staff effectiveness)

ORD Scorecard Linkages



More Information

❖ More Information:

<http://www.epa.gov/ord/performance/>

<http://es.epa.gov/ncer/publications/bibliometrics/>

<http://www.epa.gov/osp/bosc/>

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