Practical Software and Systems Measurement

Objective Information for Decision Makers

How does PSM relate to and Influence Operational Analytics - Outbrief

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*PSM Users Conference
Norfolk, VA*

Objectives of the Workshop

1. **Define Analytics context for PSM**

2. **Discuss interpretation of Analytics data**

3. **Describe the actions of the Measurement analyst in using analytics for input into measures to drive decision making**

Observations

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Measurement and Analytics

Measurement	Analytics
Structured	Unstructured
Planned	Unplanned
Known targeted information for decision making	Discovery of information to support decision making
Plan versus actual	Observation of patterns
Answer Information Needs questions by implementing a measure or indicator	Answer Information Needs questions by looking for a pattern.
Collected	Data-mined

Enterprise, Project

- *Analytics is more relevant to the enterprise – versus the project level*
- *Patterns and behavior across projects are capable of illustrating trends*

Measurement Construct - Analytics

- *Start at the Information Product*
- *Use attributes of entities to make discoveries*
- *PSM provides a planned top-down approach, versus discovery from analytics*
- *Data being used resides below/with the entities*
- *The discovered patterns inform the Measurable Concepts for the information needs*

Using Analytics

- *Parallel – Patterns from analytics drive the relationships and derived Measures*
- *Data that may have no apparent meaning in the measurement plan may be combined or transformed to create meaning*
- *Create a derived measure chain using observed patterns and behavior*
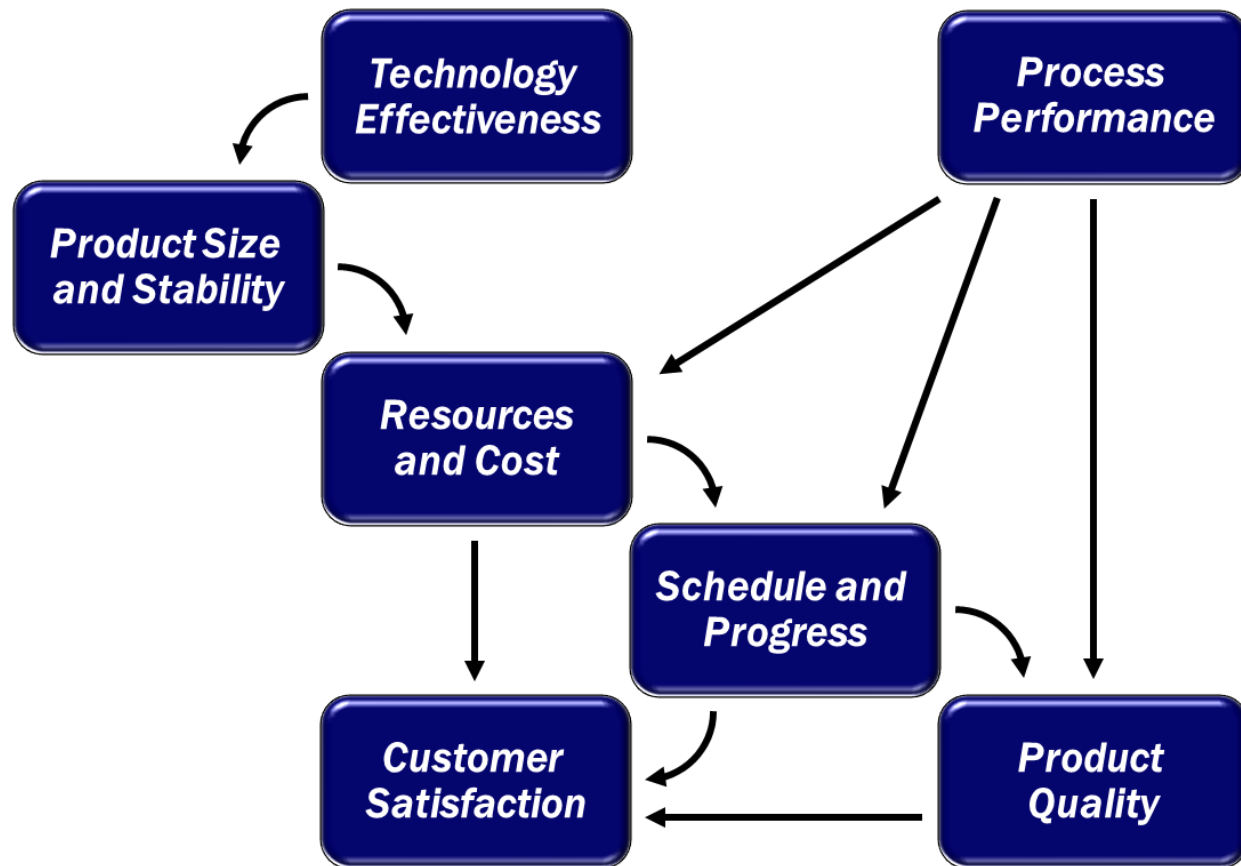
Interpreting Analytics

- *Interpreting patterns and behavior to improve information product*

- *Use analytics to build additional value in the information product*

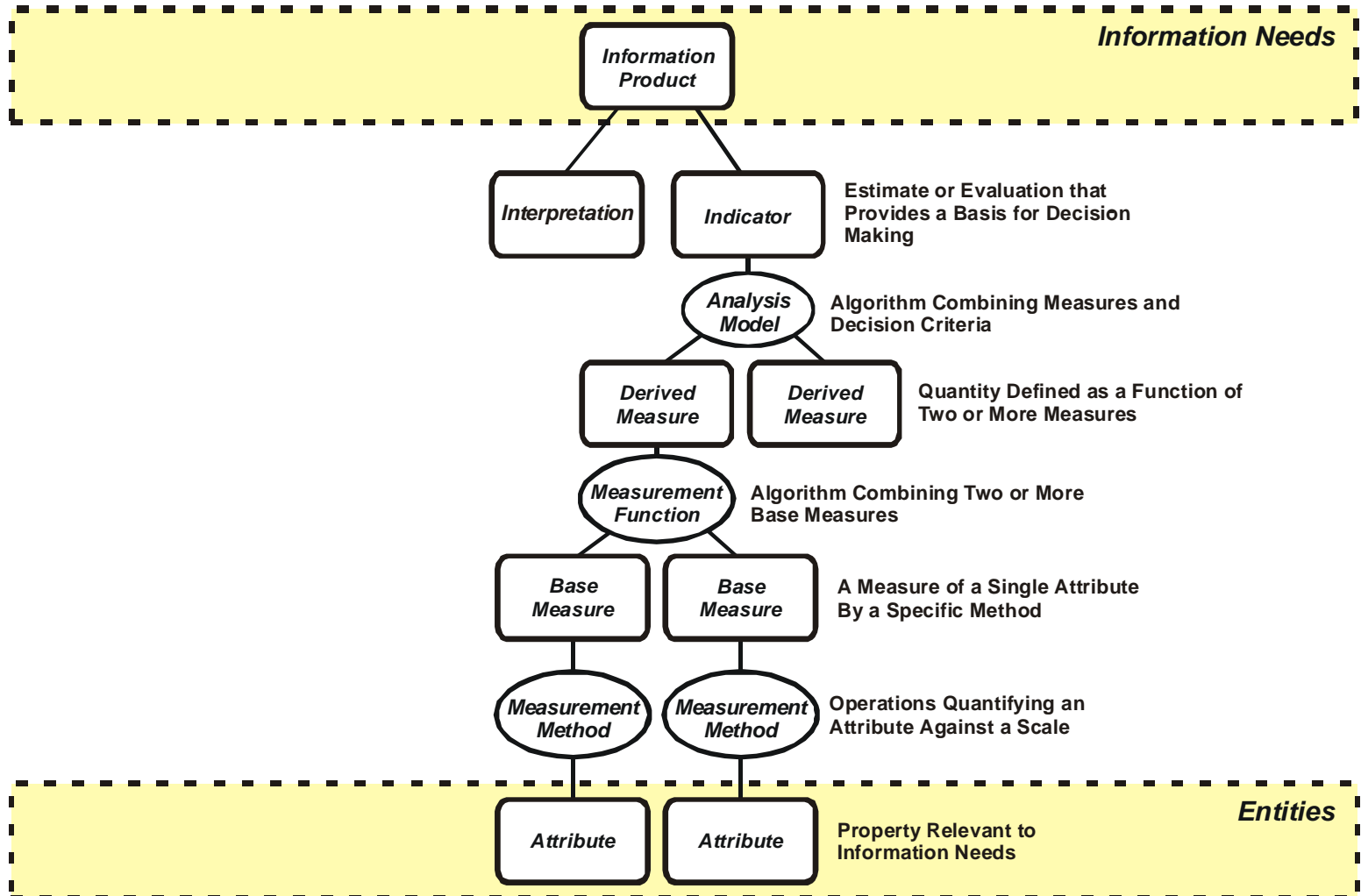- *Discover patterns that may add to refinement of information needs*

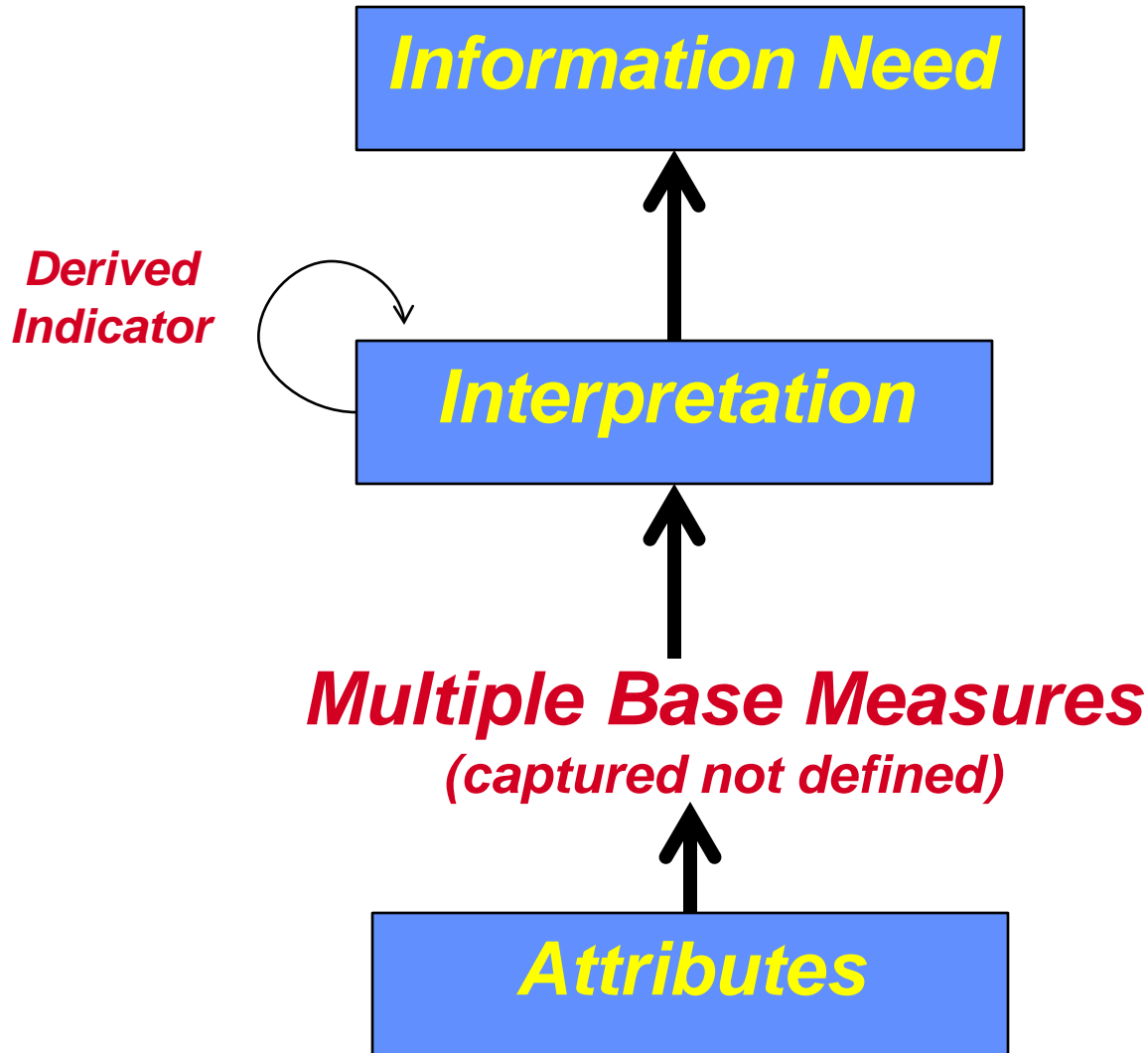# *PSM Information Model Extension to Analytics*

PSM Information Model

Practical Software and Systems Measurement
Integrating Analytics into the Measurement Construct

Adapted from ISO/IEC 15939 - *Software Measurement Process*

Analytics for Measurement Constructs

Information Need

Derived Indicator

Interpretation

Multiple Base Measures
(captured not defined)

Attributes

Conclusions:
PSM considerations for Analytics

- *Analytics can provide insight through patterns and behavior to enhance the information product*

- *Analytics uses discovery to develop measurement constructs*

- *Combine analytics with PSM driven measurement to improve the information product and resultant decision support*

Workshop team

- *Kim Elliott*
- *Paul Kohl*
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Terms

Measurement - a set of operations having the object of determining the value of a measure (PSM course)

Measurement is obtaining the numeric value of different attributes that can be analyzed and provided to the Decision Maker as an information product.

Does analysis belong as part of measurement – is it separate?

Analytics – Analysis using data, statistics and outcome modeling to inform and support decision making

Business Intelligence (BI) – the collection of information and capabilities that an enterprise uses to understand business decision making

Analytics defined

- *Analytics is the study of patterns existing in databases, transactional data, and/or network data and using analysis and extraction of information for the examination (analysis focused on a particular thing)*

- *Analytics can be applied within the organization, between organizations, or through data streams across the internet*