**Source:** SEI *Implementing Goal-Driven Measurement* course material (adapted).

**SOEN6611/S22 Project Step 2 (1.5 points, due before midnight on July 11th)**

**Objective:** Operationalize Goals, Derive Success Criteria and Indicators

**Step 2 tasks:**

**2.1 Operationalized Goals**

The objective of the first part of this step is to express your measurement goal derived in Step 1, in a structured statement that identifies the object, purpose, quality focus & perspective, environment and constraints. This information is typically needed to gain required insight and/or to enhance decision-making. The objective of the second part is to develop success criteria and success indicators that will allow you to answer the measurement questions (from Step 1) quantitatively and then communicate the results to others.

**Operationalized Goals**

For each measurement goal you documented in Step 1:

* Operationalize it as a structured statement that identifies the object, purpose, quality focus & perspective, and environment and constraints.
* Document your results using the template below

**Volume**

| Operationalized Goal : Label and description | OG1: to evaluate the volume of big data from different data sources |
| --- | --- |
| Corresponding Measurement Goal label | MG1 |
| Object of interest | Mvol - Metric or Indicator for volume |
| Purpose | Analyze the size of data from different data sources in order to improve the performance of machine learning models. |
| Quality Focus, Perspective | Examine the quantity of a large amount of data from the point of view of the application team. |
| Environment and Constraints | Data sources can be located at different locations across the globe so there can be latency issues while sourcing data and appropriate tools needed to be available to the application team to ingest and process large volume of data. |

**Velocity**

| Operationalized Goal : Label and description | OG2 : to evaluate velocity of big data from different data sources |
| --- | --- |
| Corresponding Measurement Goal label | MG2 |
| Object of interest | Mvel - Metric or Indicator for velocity |
| Purpose | Analyze the rate of increase in the volume of the big data in order to compare the rate of data change. |
| Quality Focus, Perspective | Examine the changes in the data over the time interval from the point of view of the manager. |
| Environment and Constraints | Data generation at source may be rapid which will require appropriate infrastructure to deal with this. |

**Variety**

| Operationalized Goal : Label and description | OG3 : to evaluate diversity of unique data elements, records and datasets from different sources |
| --- | --- |
| Corresponding Measurement Goal label | MG3 |
| Object of interest | Mvar - Metric or Indicator for variety |
| Purpose | Characterize the consistency of the data in order to improve the data. |
| Quality Focus, Perspective | Examine the quality and behavior of a different type of data from the point of view of the developer. |
| Environment and Constraints | Process factors and tools are responsible for improving the quality of the different types of data. |

**Validity**

| Operationalized Goal : Label and description | OG4: to evaluate accuracy and correctness of data from different data sources |
| --- | --- |
| Corresponding Measurement Goal label | MG4 |
| Object of interest | Mval - Metric or Indicator for validity |
| Purpose | To determine and enhance the quality of data that is important for data management and influences decision making and data analysis |
| Quality Focus, Perspective | Examine the source of the data, the data elements if they are regulated and are represented in the correct form and they stick to the standards and convention for the specified use case. |
| Environment and Constraints | The format and type of data is very important. The data source should be reliant and there should be rules and assumptions listed based on the specific usecase based based on which the credibility of the data will measured. |

**Vincularity**

| Operationalized Goal : Label and description | OG5 : To evaluate the linkage and traceability between datasets. |
| --- | --- |
| Corresponding Measurement Goal label | MG5 |
| Object of interest | Mvinc - Metric or Indicator for vincularity |
| Purpose | There is significant value arbitrage potential by connecting diverse information sets. For example, the government can connect the expenditure spent and income declared in the tax by the citizen. |
| Quality Focus, Perspective | Linkage can be used to get the more derived analysis from multiple datasets which are linked together |
| Environment and Constraints | Datasets need to have some common attributes in order to study and use the datasets for deriving information. |

**Veracity**

| Operationalized Goal : Label and description | OG6 : to evaluate veracity of data from different data sources |
| --- | --- |
| Corresponding Measurement Goal label | MG6 |
| Object of interest | Mver - Metric or Indicator for veracity |
| Purpose | To analyze the quality, accuracy and completeness of data source in order to improve the trustworthiness of the process of decision making. |
| Quality Focus, Perspective | To examine the trustworthiness, accuracy and completeness of the from the point of view of project manager and senior management. |
| Environment and Constraints | data sources can be located at different locations and it is important to have complete information of the data source, the process of extracting data from data source and authenticity of data source. One should look at resource factors , people factors and methods while examining veracity. |