

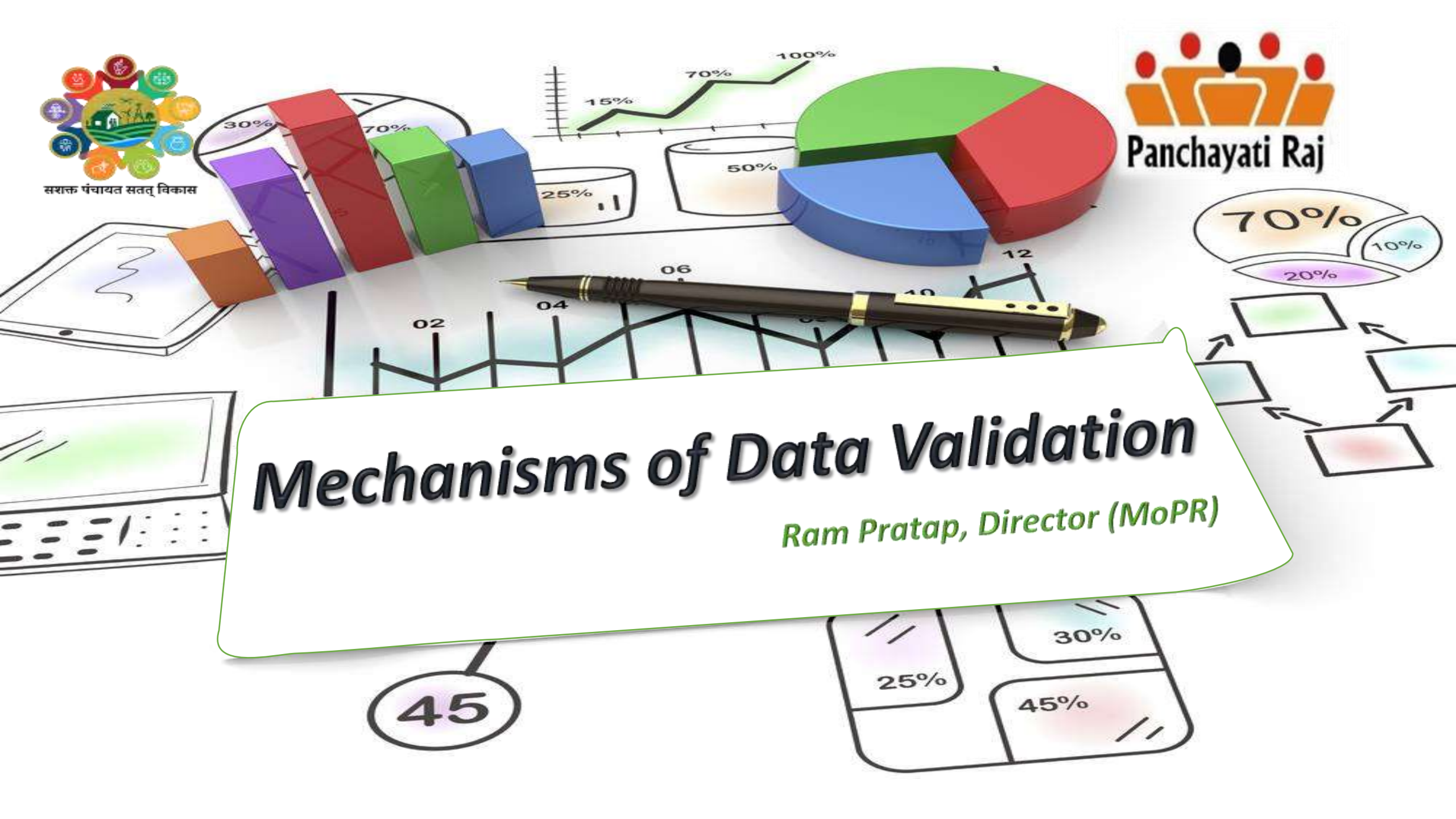


सशक्त पंचायत सतत विकास

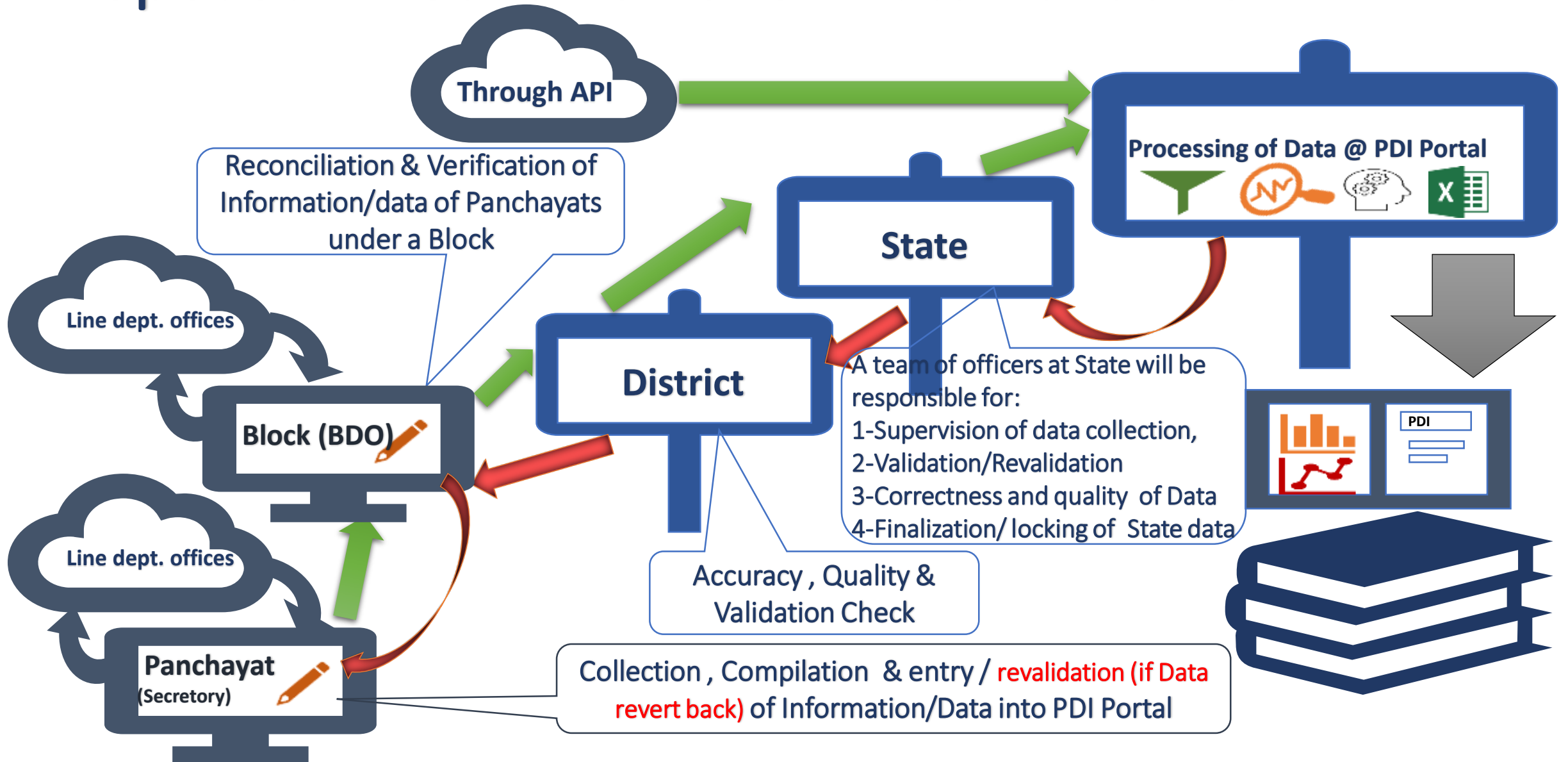


Mechanisms of Data Validation

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Proposed: Mechanisms for Data Validation



PDI Calculation : Step 1 & 2

Step 1: Compilation/Calculation of raw values on the indicators

- Compilation/Calculation of raw value of indicators
Conversion of Binary Indicators (Yes/No) into numeric value

Step 2: Assigning Weight to indicators

Equal weights will be given to all indicators up to GP level

Population weight will be taken above Gram Panchayat level

Block / District/ State

PDI Calculation : Step 3

Normalization of raw values

Rescaling the raw values into score between 0 to 100

Why normalization

Percentage of maternal death to live birth	6 per 100 live births
Percentage of births attended by skilled health personnel or institutional delivery	80%
Per lakh women that have been subjected to dowry offences during the year	350 per 1 lakh women
Under-five mortality rate of girl children per 1,000 live births	18 per 1000 live girl child birth
Total number of homeless population	12
Whether the GP ensures social inclusion	YES

PDI Calculation : Step 3

Normalization of raw values

Positive Indicators

Percentage of births attended by skilled health personnel or institutional delivery

Normal Score(X')

$$\frac{X - \text{Min}(x)}{\text{Max}(x) - \text{Min}(x)} \times 100$$

Where:

X = Raw data value

Min(x) is Minimum observed value of indicator in the data set

Max(x) is Maximum observed value of indicator in the data set.

x' is Normal score after rescaling

Positive Indicators

Infant Mortality Rate

Normal Score(X')

$$\frac{\text{Max}(x) - X}{\text{Max}(x) - \text{Min}(x)} \times 100$$

PDI Calculation : Step 3

Normalization of raw values

Positive Indicators

Percentage of births attended by skilled health personnel or institutional delivery

Panchayats	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Institutional Deliveries (As a % of total deliveries): X_i -Min	92	71	64	70	89	81	62	94	99	81
Normalize Value = $\frac{(X_i - \text{Min})}{(\text{Max} - \text{Min})} * 100$	80	23	5	22	72	50	0	87	100	51

Positive Indicators

Infant Mortality Rate

Panchayats	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Infant Mortality Rate (per 1000 live births): X_i	25	7	29	40	29	13	40	11	17	11
Normalize Value = $\frac{(\text{Max} - X_i)}{(\text{Max} - \text{Min})} * 100$	45	100	33	0	33	82	0	88	70	88

PDI Calculation : Step 3

Normalization of raw values

Indicator	Raw value	Normalized score
Percentage of maternal death to live birth	6 per 100 live births	10
Percentage of births attended by skilled health personnel or institutional delivery	80%	75
Per lakh women that have been subjected to dowry offences during the year	350 per 1 lakh women	16
Under-five mortality rate of girl children per 1,000 live births	18 per 1000 live girl child birth	8
Total number of homeless population	12	16
Whether the GP ensured their social inclusion?	YES	100

PDI Calculation : Step 4

Calculation of theme-wise GP's score

Arithmetic Mean of the indicator values for arriving at Thematic score of a GP

Indicators	I₁	I₂	I₃	I₄	I₅	Theme score ($= \frac{\sum T_i}{5}$)
Score	88	72	81	65	96	80.4

Step 5: Computation of PDI for GP

Geometric mean of the nine thematic scores to reach PDI of the GP

Themes	T₁	T₁	T₃	T₄	T₅	T₆	T₇	T₈	T₉	PDI (= Product of T_i)^{1/9}
Score	81	95	75	86	78	69	82	86	79	81

Volume of Data expected

- A large data set would be Generated for PDI compilation
 - 631 data points from each Gram Panchayat.
 - 2.69 lakh Gram Panchayats
 - 577 Indicators
 - 9 Themes
 - Around 200 Million data would be collected.
 - To handle this voluminous data, The PDI compilation will be done by PDI portal it self.

Expectation from States

- **Garbage in, garbage out (GIGO) to Good in, Good out(GIGO)**
 - In any system, operate by logical processes, the quality of output is determined by the quality of the input.
- Data validation done by States i.e. ensuring accuracy and quality of data, will play a vital role in establishing the quality and usability of PDI.

DATA



SORTED



ARRANGED



PRESENTED VISUALLY



EXPLAINED WITH A STORY



ACTIONABLE (USEFUL)



Thanks