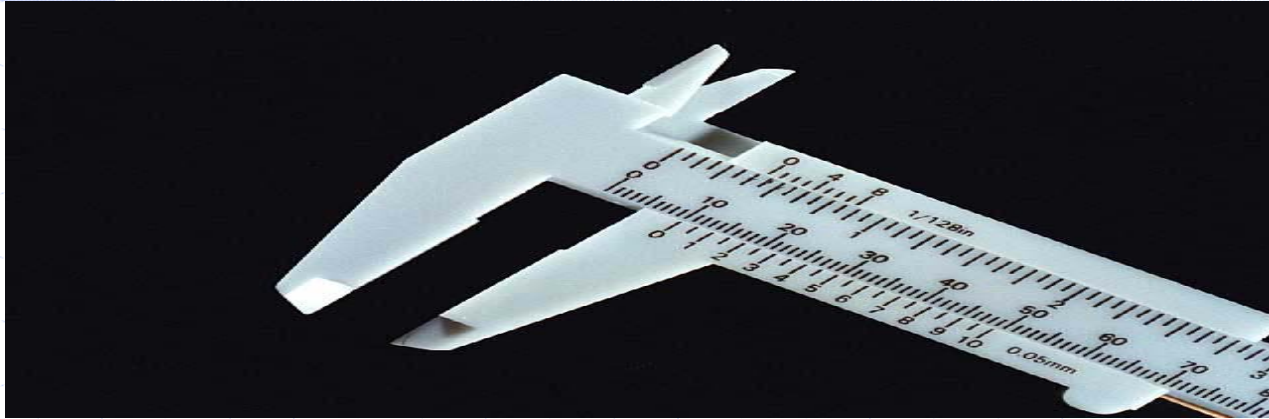




Measuring Customer Satisfaction using Internal Data



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- Measuring Customer Satisfaction using Internal Data
- Different organizations have different types of customers
 - Internal Customers & External Customers
 - Product organizations have different types of customers from project organizations
- Focus of this presentation is on
 - Project-based software development organizations
 - Software Development organizations



- ❖ Customer satisfaction is very important
- ❖ Present method is CSS – Customer Satisfaction Survey – obtained from customers
- ❖ CSS allows us to learn the customer rep's perception of our service
- ❖ While CSS is filled by one person, users (and hence) customers are multiple !
- ❖ CSS falls short when it comes to learning the real level of customer satisfaction



➤ Factors influencing CSS rating

- One-incident factor – a predominant incident (positive or negative) that occurred during project execution
- Recency factor – the recent incidents just before filling out the CSS
- Prejudices – various prejudices of the person filling out the CSS
- Poor Judgment of the person filling out CSS
- Personal Stake – of the person filling out CSS
- Just like/dislike the guy – customer rep liking or disliking the vendor rep

➤ All these factors cause a biased rating

➤ Above all – the ratings are subjective !



Why compute a CS Metric with internal Data?

- Scenario 1
 - Customer is very pragmatic
 - Not swayed by above cited factors
 - Keeps meticulous records
 - Expert data analyst
- Scenario 2
 - Customer is a normal person
 - May be swayed by some of the above cited factors
 - Keeps some required records
 - Can analyze data

Scenario 1 gives accurate rating while scenario 2 – we are not sure of its accuracy



Why compute a CS Metric with internal Data?

- Impact
 - Higher Rating to a poorly-executed project – encourages to continue poor execution
 - Poor Rating to a well-executed project – de-motivates the project team
- In either case, it is difficult for the management to
 - Assess how satisfied the customers really are
 - Administer reward / punishment fairly
 - Differentiate good practices from bad practices
 - Administer process improvement

Therefore, a CS Metric based on internal data is desirable



What to measure – tangible aspects

1. Quality – customers may forget delays in delivery but not quality
2. On-time Delivery — delayed deliveries disrupt planning, and irritates
3. Money – price escalations – impact on budgets
4. Issues – too many issues cause irritation
5. Accommodation & Cooperation – implementing Change Requests from Customer

Of course, we need to assign weights to each of the above factors depending on the project, and the type of customer



Quality Rating

- A six sigma organization has 3 defects for every million opportunities !
- Count only the "delivered defects"
- suggestions –
 - Start from Acceptance Testing
 - Critical & Major defects
 - Ignore Minor defects
 - Use Defect Density - Defects per unit size – FP, LOC, SSU, UCP OP etc
 - One defect for every "n" FPs or
 - "n" defects per every FP

Quality Rating

- Here is the formula to compute a **quality rating** (QR) for customer satisfaction:
- **QR = (actual defect density – accepted defect density) ÷ accepted defect density**
- **Actual Defect Density** – the density of defects that is actually delivered
- **Accepted Defect Density** – specified by the customer or implicit based on your organization's sigma level





Quality Rating

Interpretation of QR

- ❖ Equal to 0 – zero – customer expectations are met
- ❖ More than zero – positive – customer expectations are not met
- ❖ Less than zero – negative - customer expectations are exceeded



Delivery Schedule Rating – DR

- Delayed Delivery causes irritation
- Prior intimation of delay may ease the irritation to some extent
- Suggestions
 - Use the original delivery date
 - Count “calendar days” for delivery





Delivery Rating – DR

- The formula for computing a ***delivery rating*** (DR) for customer satisfaction is as follows:

$$\text{DR} = (\text{actual days taken for delivery} - \text{accepted days for delivery}) \div \text{accepted days for delivery}$$

- Actual Days – no of calendar days taken from the date on the PO till the date of final delivery
- Accepted days – no of days from the date on the PO till the delivery date specified on the PO
- Use of “revised” delivery date – use it for external purposes



Delivery Rating – DR

Interpretation

- ❖ Equal to 0 – zero – customer expectations are met
- ❖ More than zero – positive – customer expectations are not met
- ❖ Less than zero – negative - customer expectations are exceeded



Price Rating

- How is it possible to bill more than accepted price?
 - Price escalation clauses
 - Change Requests
 - Scope Change
 - Time & Material Contracts
 - Freight & insurance at actual - reimbursement
- Price escalation negotiations are frustrating
- Suggestions –
 - Use total amount mentioned in the PO
 - Use total billed amount
 - Both amounts to exclude taxes



Price Rating

- To compute the *price rating* (PR), here is the formula for computing customer satisfaction in this area:

$$\text{PR} = (\text{actual amount billed} - \text{amount on the purchase order}) \div \text{amount on the purchase order}$$

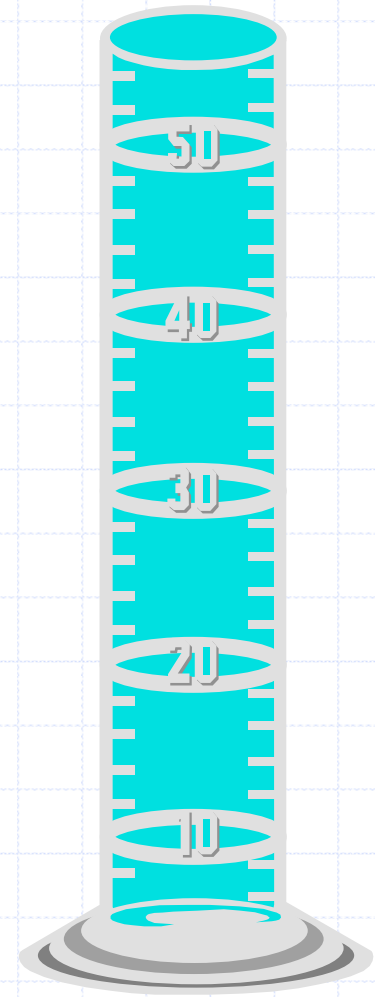
- Actual Amount Billed – total amount billed – from all raised bills
- Price on the purchase order – total amount mentioned in the PO



Price Rating

Interpretation of PR

- ❖ Equal to 0 – zero – customer expectations are met
- ❖ More than zero – positive – customer expectations are not met
- ❖ Less than zero – negative - customer expectations are exceeded





Issue Rating - IR

- **Issues do crop up during project execution**
- **Too many issues cause irritation**
- **Suggestions**
 - **Use Issue Density – no of issues raised per unit software size in FP, SSU, UCP, OP etc.**
 - **One issue for every “n” FPs or**
 - **“n” issues for every FP**
 - **Use a consistent definition**

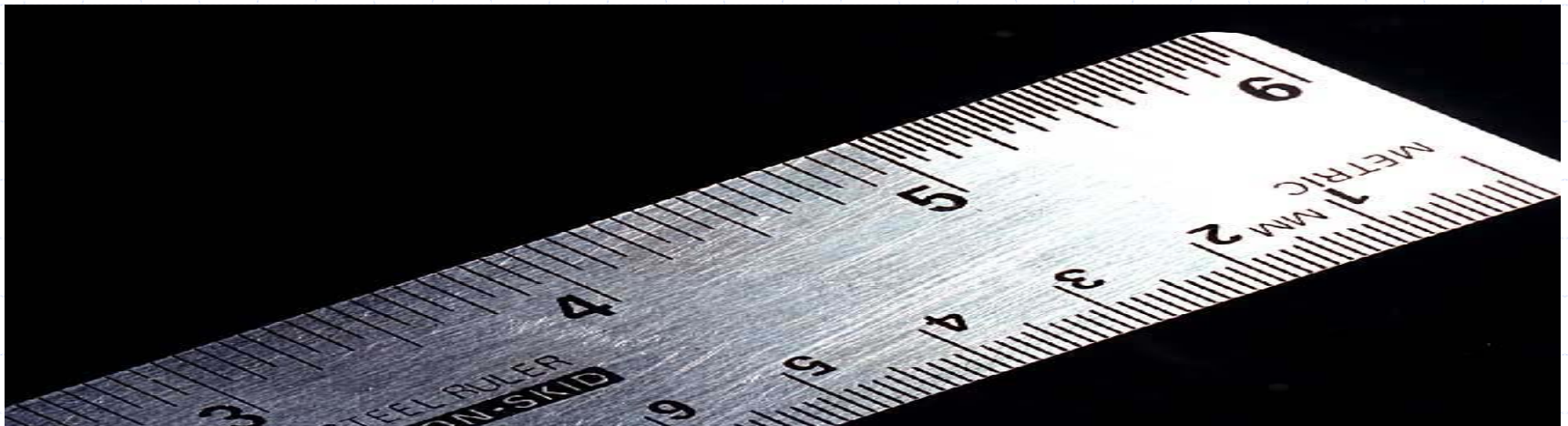


Issue Rating - IR

- **The formula for computing IR for customer satisfaction is as follows:**

$$\text{IR} = (\text{actual ID} - \text{standard ID}) \div \text{standard ID}$$

- **Actual ID – Actual Issue Density – computed with actual number of issues raised**
- **Standard ID – Organizational standard Issue Density**





Issue Rating – IR

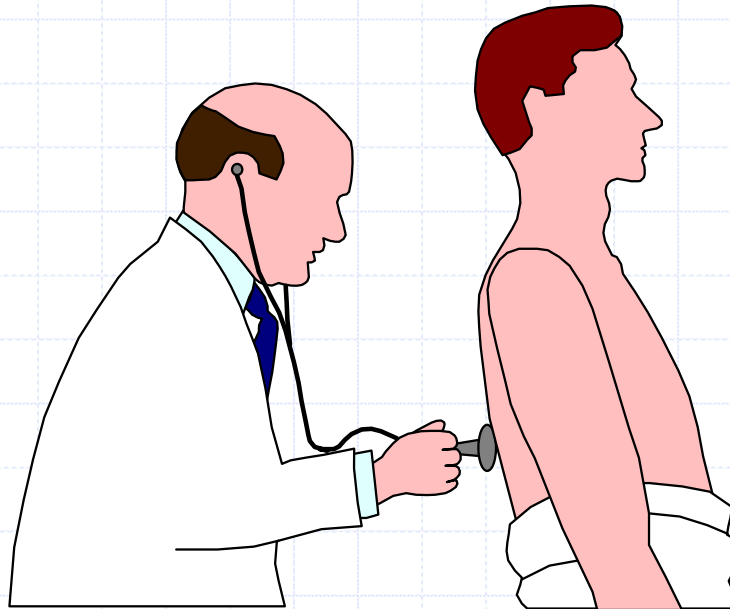
Interpretation of IR

- ❖ Equal to 0 – zero – customer expectations are met
- ❖ More than zero – positive – customer expectations are not met
- ❖ Less than zero – negative - customer expectations are exceeded

Cooperation Rating – CR

➤ Change Request handling

- Accepting & implementing with out impacting delivery schedule and price
- Accepting & implementing with impacting delivery schedule and price





Cooperation Rating – CR

➤ The formula for *cooperation rating* (CR), is :

$$\text{CR} = (\text{no. of change requests received} - \text{no. of change requests implemented without affecting delivery date or price}) \div \text{no. of change requests received}$$



Cooperation Rating – CR

Interpretation of CR

- ❖ Equal to 0 – zero – customer expectations are met
- ❖ More than zero – positive – customer expectations are not met



Composite Customer Satisfaction Rating – CSSR

- Weights have to be assigned to each of the above 5 ratings
- Sum of all weights to be equal to 1
- The weights to be inline with the importance of the metric – that is – more important metric would have higher weight
- Suggested Weights

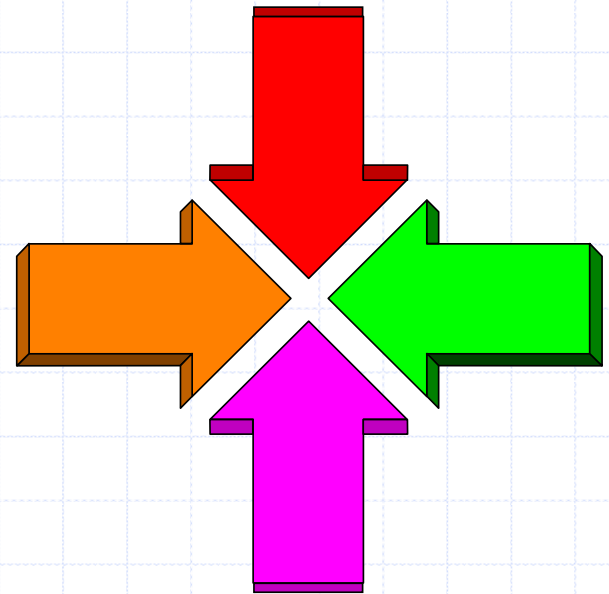
Sl. No	Rating	Weight
1	Quality Rating - QR	0.35
2	Delivery Rating - DR	0.30
3	Price Rating - PR	0.25
4	Issue Rating - IR	0.05
5	Cooperation Rating - CR	0.05
6	Total Weight	1.00

Composite Customer Satisfaction Rating – CSSR

- The formula to compute CCSR on a 5-point scale is this:

$$\text{CCSR} = 5 - (\text{QR} * \text{w1} + \text{DR} * \text{w2} + \text{PR} * \text{w3} + \text{IR} * \text{w4} + \text{CR} * \text{w5})$$

- W1. W2. W3, w4, w5 are respective weights for ratings
- 5 – for a five-point scale – replace it with 10 for a 10-point scale





Composite Customer Satisfaction Rating – CSSR

- ❖ Use CSSR in conjunction with CSS both are important !

- ❖ When CSSR and CSS Are in agreement
 - ❖ Customer Satisfaction management and Service Delivery are in sync
 - ❖ Customer perception is in sync with reality
 - ❖ Management of Customer Satisfaction is - as it should be
 - ❖ Organization strengths are equal in satisfaction management and service delivery
 - ❖ Organization needs to take corrective action based on the metric
 - ❖ Low – improve
 - ❖ High – maintain and better



Composite Customer Satisfaction Rating – CSSR

- ❖ **When CSSR higher than CSS**
 - ❖ Customer perception is poorer compared to reality
 - ❖ Service delivery is better than the Management of Customer Satisfaction
 - ❖ Organization strengths are better in service delivery but poorer in satisfaction management
 - ❖ Organization needs to take corrective action (improve) satisfaction management



Composite Customer Satisfaction Rating – CSSR

- ❖ When CSSR lower than CSS
 - ❖ Customer perception is better than reality
 - ❖ Management of Customer Satisfaction is better than the service delivery
 - ❖ Organization strengths are more in satisfaction management but poorer in service delivery
 - ❖ Organization needs to take corrective action (improve) in service delivery



- ❖ Should there be all 5 ratings?
 - ❖ I suggest – but you may customize
- ❖ Can weights be modified ?
 - ❖ Yes – it depends on the organization and the project
- ❖ What scale to use
 - ❖ The one your organization is more comfortable with – 5-point, 10-point or 100-point scale – can be used



Questions???