Project Report on

Engineering Excellence Plan in an Information Technology (IT) Organization

Submitted By:

Rishu Jain

(2K20/EMBA/30)

Under the Guidance of:

Mr. Mohit Beniwal

Professor

DELHI SCHOOL OF MANAGEMENT

Delhi Technological University

Bawana Road Delhi 110042

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CERTIFICATE

This is to certify that the project report titled **"Engineering Excellence Plan in an Information Technology (IT) Organization"** is a bonafide work carried out by **Rishu Jain** of **EMBA 2020-22** and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfilment of the requirement for the award of the Executive Degree of Master of Business Administration.

Signature of Guide **Signature of Head (DSM)**

Seal of Head

Place:

Date:

DECLARATION

I, **Rishu Jain**, student of **EMBA** of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi – 42, hereby declare that the project report **"Engineering Excellence Plan in an Information Technology (IT) Organisation"** submitted in partial fulfilment of Executive Degree of Master of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge.

This report is not being submitted to any other University, for award of any other Degree, Diploma or Fellowship.

Place: **Rishu Jain**
Date:

ACKNOWLEDGEMENT

I would like to express my sincere gratitude towards my Guide, Mr. Mohit Beniwal (Professor) for his support and valuable guidance throughout the duration of the project. I thank him for the constant encouragement and support at every stage.

I also wish to thank my project Co-Guide, Dr. Archana Singh for her valuable guidance, without whose help and support this project could not have been completed. I also thank her for her patience for providing me with a goal-oriented approach towards this project.

My sincere gratitude goes out to my colleagues whose participation in the project gave many valuable inputs for its completion.

Rishu Jain
(2K20/EMBA/30)

EXECUTIVE SUMMARY

Excellence is defined in an organization as the ongoing efforts put by any employee to complete his/her task in an excellent way. The tasks are completed as per the internal framework of standards and processes defined within an organization. A task completed by any employee is said to be excellent if the output of the task exceeds task objectives or task expectations.

We are designing the Engineering Excellence Plan which contains different goals and metrics. This plan can compute excellency factor for any employee within an organization towards his/her defined goals. The goals and metrics can be different for different organisation and strategy to compute excellency factor can also be varied.

We are designing one general template in Excel that contains general set of goals and metrics (metrics are defined to analyse whether the goals are achieved or not). After defining the goals and metrics we will compute the percentage of excellency for any employee. The percentage of excellency depends upon how much an employee achieved his/her goals within the given time frame. After computing individual percentage for an individual employee, we will then compute the overall percentage of any project or any team within an organization.

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Introduction

In any organizational, Excellence is defined as the ongoing efforts put by any employee to complete his/her task in an excellent way. The tasks are completed as per the internal framework of standards and processes defined within an organization. The continuous efforts to finish numerous jobs are planned to convey items and administrations that satisfy client prerequisites inside business assumptions. A task completed by any employee is said to be excellent if the output of the task exceeds task objectives or task expectations. Different organizations understand excellency in different ways.

Component Definitions:

Engineering Organisation:

An Engineering organization is a group of people particularly engineers which are combined under specific leadership/management. They are put together to function as a single entity for a particular purpose. For example: HCL, IBM etc.

Excellence:

Excellence is a measure of consistently superior performance that surpasses requirements and expectations without showing multiple errors.

Engineering Excellence Plan:

Engineering Excellence Plan is established by an organization in which all levels of the organization participate for continuous improvement.

Objectives of the Study

1. We are designing the Engineering Excellence Plan which contains different goals and metrics. This plan can compute excellency factor for any employee within an organization towards his/her defined goals.

2. The goals and metrics can be different for different organisation and strategy to compute excellency factor can also be varied.

3. We are designing one general template in Excel that contains general set of goals and metrics (metrics are defined to analyse whether the goals are achieved or not). The goals are identified in Excel depending upon an IT organization.

4. After defining the goals and metrics we will compute the percentage of excellency for an employee. The percentage of excellency depends upon how much an employee achieved his/her goals within the given time frame.

5. After computing individual percentage for an individual employee, we will then compute the overall percentage of any project or any team within an organization.

Literature Review

Designing Engineering Excellency in any organization is the objective of designing all associations, whether government or private industry, public or global. What do we mean by designing Excellency Plan? While most individuals have their own thoughts and translation with respect to what comprises designing Excellency Plan, maybe we can begin by characterizing the terms.

As indicated by "Mr. Webster" designing Excellency Plan is characterized as the utilization of logical and numerical administrators to functional finishes like the plan, development, and activity of effective and affordable designs, hardware, and frameworks. Excellency is characterized as the state, quality, or state of succeeding, prevalence, with succeed being characterized as to be preferable over or show improvement over others.

Using these concepts as a starting point, the question of how to acknowledge or otherwise assess "excellence" arises. In this regard, we'd like to repeat a comment made by Louis Armstrong on jazz music, which NASA Administrator Michael Griffin mentioned at the 56th International Astronautical Congress in Fukuoka, Japan, in October. "You'll never know what jazz is if you have to ask."

In the wake of considering this comment by Louis Armstrong, we have finished up there is a lot of truth in it comparative with designing greatness. In any case, when one attempts to evaluate the importance of designing excellency and produce some action that the people who are committed to having measurements to use in laying out whether a specific goal or objective has been accomplished, then, at that point, we make them interest perceptions. Does the quantity of licenses got, proficient diary distributions, Ph.D.'s. on staff, designing versus non-engineers at work, positive versus negative criticisms on items, flight vehicle triumphs versus disappointments, or benefit an organization makes, for instance, give a proportion of designing excellency an association has accomplished?

In the field of aircraft engineering, engineering excellence is unquestionably linked to mission success. Engineering excellence is, in the end, one of, if not the most important goal of any engineering firm. Another question for which there is no clear answer is how to achieve and maintain it. Without a doubt, engineering excellence will be achieved by an organisation with acknowledged technical leadership that has vision, high technical skill, and the ambition to excel. This leadership is key for the organization's success and ability of the managers assigned to carry out the organization's mission.

Designing excellency is additionally connected with the essential administration of an association's human resources. A new distribution gave by the Administrator of NASA focused on the point that the excellency of its labour force is the Agency's most basic resource in achieving its main goal wellbeing. Guaranteeing that the Agency keeps on having the logical and specialized ability important to safeguard the Nation's job as a forerunner in flight, earth and space science, and innovation is accordingly vital for accomplishing designing excellency.

Existing Studies and Models

Experts from the International City/County Management Association (**ICMA**) recommended these steps for Engineering Excellence:

1) Delight your customers.
2) Get results from vision and strategic planning.
3) Create a culture from your values.
4) Understand and incorporate both leadership and management.
5) Pay attention to engagement and passion.
6) Maximizing performance.
7) Measure progress.
8) Manage changes.

We need to research (ICMA, 2019) for additional details.

Engineering Excellence as the Quality of an Organization

A few discoveries from field research projects uncovered a huge effect of designing excellency on generally execution, human power efficiency organization culture and different highlights of associations. A great deal of other fascinating discernments and convictions are persistently introduced through long-lasting visiting. A few exceptional methodologies were created deliberately of hierarchical greatness level evaluation. Allow us to discuss three of them: the RADAR rationale as EFQM (2018) fostered a unique evaluation system and Duffy (2018) have proposed five greatness development levels and comparative methodology is likewise suggested by the most recent rendition of ISO 9004:2018 norm, which involves an exceptional addition totally arranged on hierarchical self-appraisal (ISO 9004).

This standard introduces a new phrase, "excellence of an organisation," which refers to how well an organization's inherent qualities meet the demands and expectations of its customers and other stakeholders in order to achieve long-term success. This term, in our perspective, is extremely like technical excellence. Unfortunately, information on the economic consequences of technical achievement is rarely published. For example, the results of a survey focusing on changes in performance metrics are intriguing in and of themselves. Some experts from George Washington University conducted this survey in 2019. (Washington D.C.).

Performance Indicator	Average Annual Positive Performance Improvement (%)
Timeliness of delivery	4.7
Errors or defects	10.3
Cost of quality	9.0
Employee satisfaction	1.4
Safety and Health	1.8
Overall customer satisfaction	2.5
Customer complaints	11.6
Market share	13.7
Sales per employee	8.6
Return on assets	1.3

Figure:1 Effects of Engineering Excellence (Adapted from GWU, 2019)

[Source: LeapIt.co.uk, Effects of Engineering Excellence]

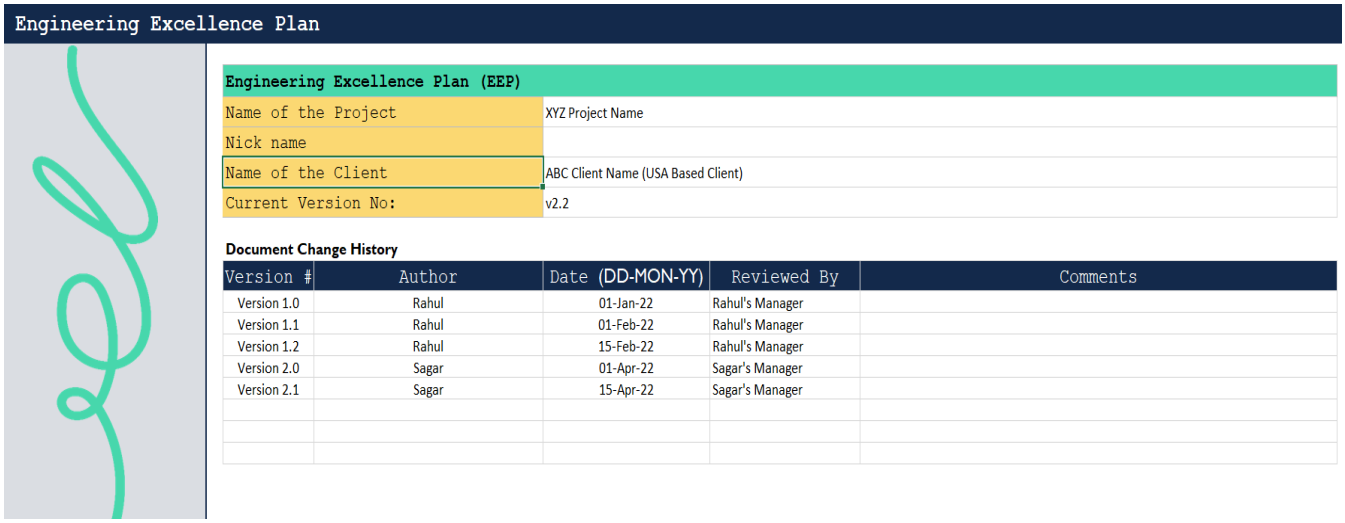
Similar studies in Czech organisations, on the other hand, cannot confirm comparable findings. Another study, undertaken by a team from the University of Leicester at 120 European organisations, discovered the impact of engineering quality on overall performance. The European Quality Award winners were compared to organisations that had not yet implemented the EFQM Excellence Model. The complete results can be seen at (Eraclitus, 2019).

Research Methodology

We are designing our engineering excellence plan using Excel Sheets and Functions. In excel, data can be divided into multiple groups easily and excellency factor can be computed using multiple excel functions effectively and efficiently.

Document and General Information

The first sheet of excel i.e., Figure: 1 contains the basic information related to the Name of the Project or the Client Information.



Engineering Excellence Plan

Engineering Excellence Plan (EEP)	
Name of the Project	XYZ Project Name
Nick name	
Name of the Client	ABC Client Name (USA Based Client)
Current Version No:	v2.2

Document Change History

Version #	Author	Date (DD-MON-YY)	Reviewed By	Comments
Version 1.0	Rahul	01-Jan-22	Rahul's Manager	
Version 1.1	Rahul	01-Feb-22	Rahul's Manager	
Version 1.2	Rahul	15-Feb-22	Rahul's Manager	
Version 2.0	Sagar	01-Apr-22	Sagar's Manager	
Version 2.1	Sagar	15-Apr-22	Sagar's Manager	

Figure: 2

[Source: MS Excel, Compiled by Author]

In the Introductory sheet, following information can be provided w.r.t to any Project within an organization.

1. **Name of Project:** We must provide the Name of the Project for which we are designing Engineering Excellence Plan. Here we have taken a general name i.e., XYZ.

2. **Nick Name:** We can also provide the information regarding Nick Name of the Project if the nick name exists.

3. **Name of the Client:** Here we are mentioning the client Name and the location of the Client. Currently we took a general Client name i.e., ABC Client Name (Location: USA based Client)

4. **Current Version No:** In the fourth row we are capturing the current version of our Engineering Excellence Plan. Since the plan can change depending upon new goals introduced, therefore the version number can also be changed.

Here, we have also provided one more table that can store information w.r.t Document change History. Since there are chances that the Plan can change with changing time and goals so the new version of plan can be introduced. In this table we are storing information related to Version No, Author (person who updates the plan), Date of Modification, Reviewed By (person who reviews the plan: generally, a team manager is the person who reviews the plan) and the final comments.

Project Plan

The second sheet (Figure: 2) of excel contains information regarding project planning i.e., general information/ project planning information/ project technical stack/ Engineering Excellence Journey.

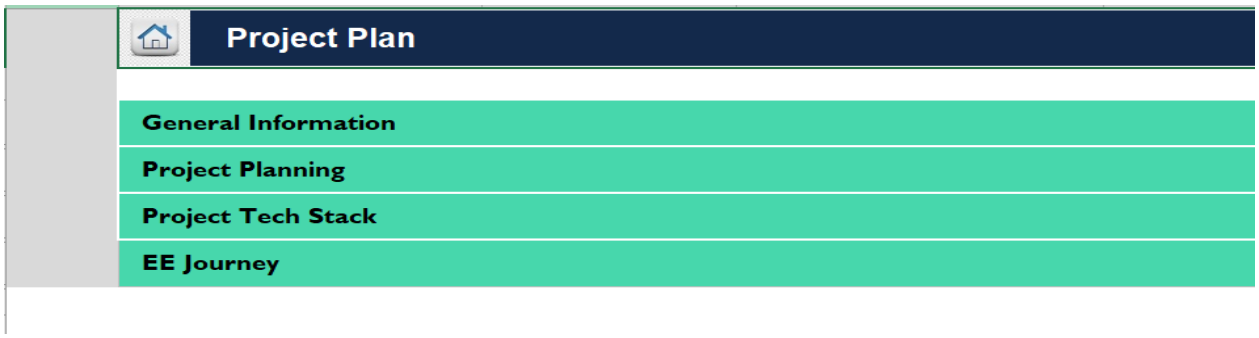


Figure: 3

[Source: MS Excel, Compiled by Author]

1. General Information

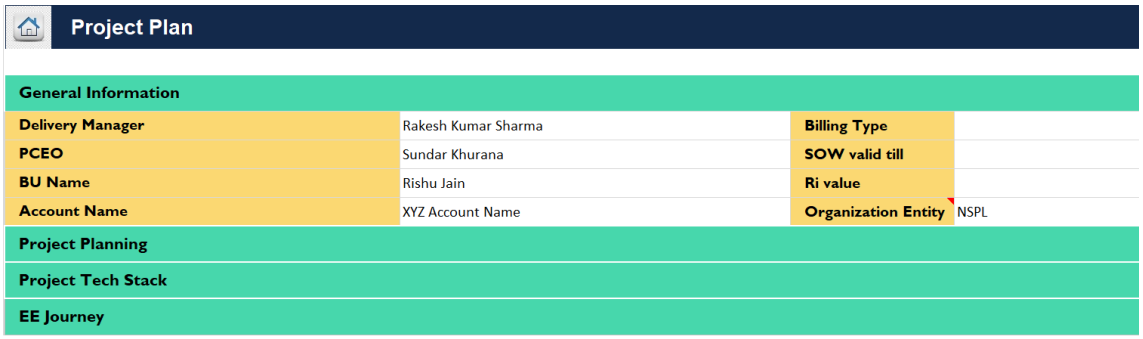
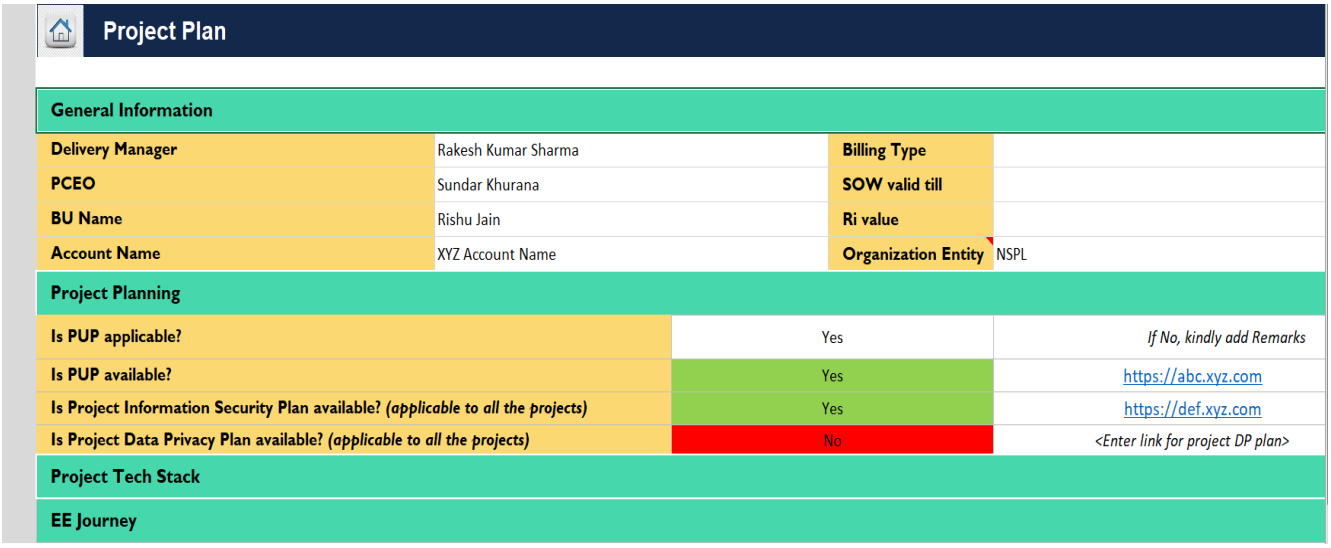


Figure:4

[Source: MS Excel, Compiled by Author]

General Information contains information related to Delivery Manager, Business Unit Head Name, Account Name, Billing Type e.tc. In this block of section, we are capturing the general data associated to any project. We have provided one general template to store information/data, but the template can be modified depending upon the different organization and the project.

2. Project Planning



Project Plan			
General Information			
Delivery Manager	Rakesh Kumar Sharma	**Billing Type**	
PCEO	Sundar Khurana	**SOW valid till**	
BU Name	Rishu Jain	**Ri value**	
Account Name	XYZ Account Name	**Organization Entity**	NSPL
Project Planning			
Is PUP applicable?	Yes	*If No, kindly add Remarks*	
Is PUP available?	Yes	https://abc.xyz.com	
Is Project Information Security Plan available? *(applicable to all the projects)*	Yes	https://def.xyz.com	
Is Project Data Privacy Plan available? *(applicable to all the projects)*	No	*<Enter link for project DP plan>*	
Project Tech Stack			
EE Journey			

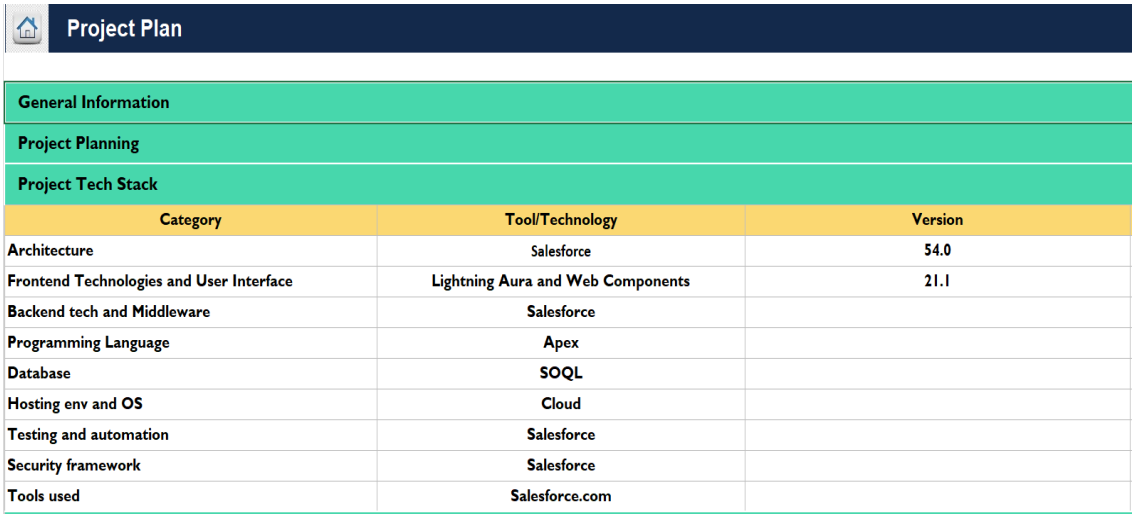
Figure: 5

[Source: MS Excel, Compiled by Author]

Here we are storing information related to Project Unified Plan (PUP). For Example:

- Is PUP available/applicable. If it is available, then do we have link for the required document. If we have link, then we can provide the link along with the document name.
- Is Project Information Security Plan available or not? If yes, then we can provide the external link as well.
- Is Project Data Privacy Plan available?

3. Project Technical Stack



Project Plan

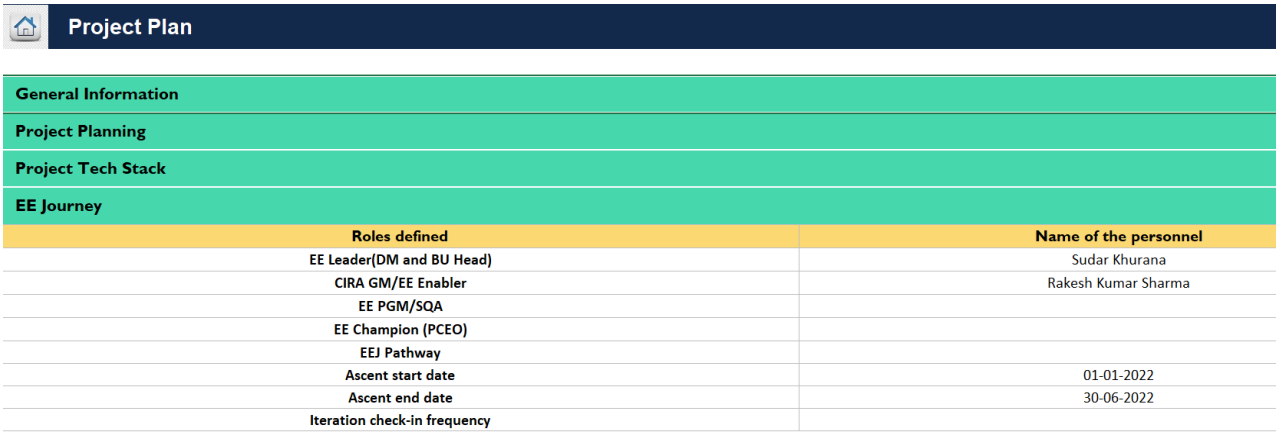
General Information		
Project Planning		
Project Tech Stack		
Category	**Tool/Technology**	**Version**
Architecture	Salesforce	54.0
Frontend Technologies and User Interface	Lightning Aura and Web Components	21.1
Backend tech and Middleware	Salesforce	
Programming Language	Apex	
Database	SOQL	
Hosting env and OS	Cloud	
Testing and automation	Salesforce	
Security framework	Salesforce	
Tools used	Salesforce.com	

Figure: 6

[Source: MS Excel, Compiled by Author]

In this block of section, we are capturing information related to technical information for our project. For example, in Figure: 5, we have captured all the technical information related to one of the Salesforce Project. We have stored the information related to Architecture/Front End and Backend technologies, Testing Environment, Operating Information and Tools Used etc. We have also stored information related to Version Numbers for all the specific architecture mentioned in Figure: 5. For example, in a project: lightning aura and lightning web components are used with a version of 21.1.

4. Engineering Excellence Journey



Project Plan

General Information	
Project Planning	
Project Tech Stack	
EE Journey	
Roles defined	**Name of the personnel**
EE Leader(DM and BU Head)	Sudar Khurana
CIRA GM/EE Enabler	Rakesh Kumar Sharma
EE PGM/SQA	
EE Champion (PCEO)	
EEJ Pathway	
Ascent start date	01-01-2022
Ascent end date	30-06-2022
Iteration check-in frequency	

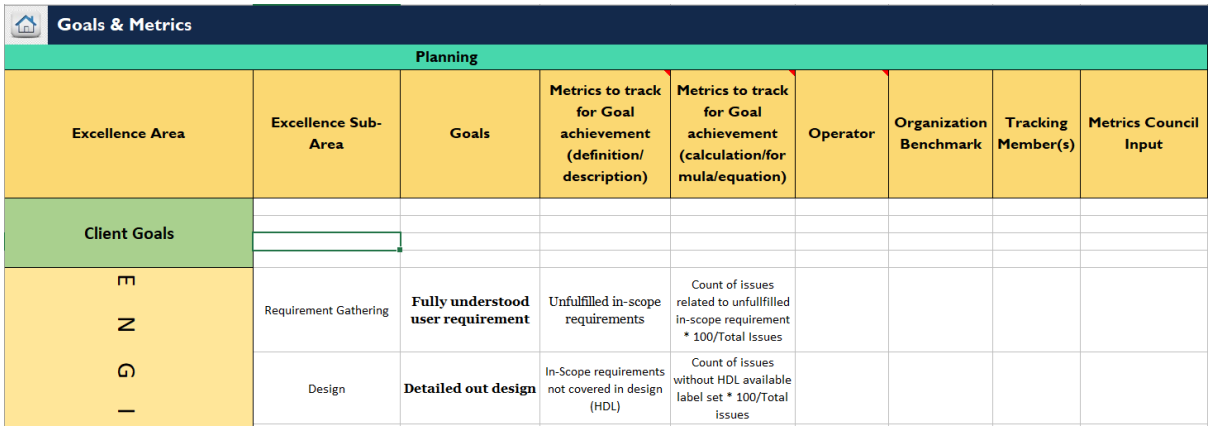
Figure: 7

[Source: MS Excel, Compiled by Author]

In the last block, we are storing information related to Engineering Excellence Journey. Here we are capturing data related to EE leader or enabler. We are also mentioning the start and end date of EE Plan. The start and the end date of EE plan signifies that this given template of goals and metrics are applicable for this period. Once the time is elapsed, we need to define another template with new version of goals and metrics.

Goals and Metrics

In the third sheet of Excel, we are designing Goals and Metrics or planning our Project goals depending upon different excellence areas for any project within an organization. Below figure (Figure: 7) shows an overview of How Goals and Metrics can be defined. We are giving one general template for Goals and Metrics, but it can be different for different organisations/ projects. Currently we have designed our goals depending upon a project running in an IT firm.



Goals & Metrics

Planning								
Excellence Area	Excellence Sub-Area	Goals	Metrics to track for Goal achievement (definition/ description)	Metrics to track for Goal achievement (calculation/formula/equation)	Operator	Organization Benchmark	Tracking Member(s)	Metrics Council Input
Client Goals								
THINGS	Requirement Gathering	**Fully understood user requirement**	Unfulfilled in-scope requirements	Count of issues related to unfullfilled in-scope requirement * 100/Total Issues				
	Design	**Detailed out design**	In-Scope requirements not covered in design (HDL)	Count of issues without HDL available label set * 100/Total issues				

Figure: 8

[Source: MS Excel, Compiled by Author]

Columns Information in setting up Goals and Metrics:

1. **Excellence Area:** It is defined as the areas in which the project deals with. For example, a project in an IT firm particularly deals in an area such as Client Goals, Thinking Breakthrough/Innovation or People Communication etc.

2. **Excellence Sub Areas:** Here we are mentioning the sub areas of Excellence Areas. For example, in Client Goals: multiple sub areas can exist such as Design, Requirement Gathering or Coding.

3. **Goals:** In the third column, we are mentioning the actuals goals. These goals must be achieved by an employee working in a project. For example, if an excellence sub area is a requirement gathering then Goal could be "An employee fully understood the client's requirements or not".

4. **Metrics to track for Goal achievement(definition/description):** Here we are defining Metrics to understand whether the Goal has been achieved or not.

5. **Metrics to track for Goal achievement(calculation/equation):** In this column we are calculating that how much goals have been achieved or not. Here we are mentioning the equation of success or failure. The Metrics and the formula to

calculate the metrics or percentage of success and failure can be different for different projects or organization.

6. **Operator and Organization Benchmark:** Here we are mentioning the organization benchmark value for a particular Goal. For Example, in requirement gathering Goal, organization benchmark could be ">=75%".

7. **In the last columns** we are giving information related to Tracking Members (Person who is being tracked in any Iteration of Engineering Excellence) and an area where the person (Metric Council User) can provide his/her inputs for the members who are being tracked in any iteration of Engineering Excellence.

Examples of Different Types of Goals and Metrics in Planning Sheet

1. For an IT firm the first Excellence Area could be Client Goals. Client Goals can be further divided into sub- areas of Requirement Gathering, Design, Coding, Testing and Review and Delivery.

Requirement Gathering

Planning								
Excellence Area	**Excellence Sub-Area**	**Goals**	**Metrics to track for Goal achievement (definition/ description)**	**Metrics to track for Goal achievement (calculation/form**	**Operator**	**Organization Benchmark**	**Tracking Member(s)**	**Metrics Council Input**
Client Goals								
E N	Requirement Gathering	**Fully understood user requirement**	Fulfilled in-scope requirements	Count of issues related to fullfilled in-scope requirement * 100/Total Issues	<=	75		Notes and Input by Metric Council User

Figure: 9

[Source: MS Excel, Compiled by Author]

The above figure (Figure: 8) shows different column information w.r.t to Requirement Gathering Goal which comes under Client Goals Excellence area. Here the success or failure metrics are calculated depending upon formula mentioned above.

Excellence Sub-Area: Requirement Gathering

Goal: Fully understood user requirement

Metrics to track for Goal achievement (Definition): Unfulfilled in-scope requirements

Metrics to track for Goal achievement (Equation): (Count of issues related to unfulfilled in-scope requirement * 100)/Total Issues

Design

Excellence Sub-Area	Goals	Metrics to track for Goal achievement (definition/ description)	Metrics to track for Goal achievement (calculation/formula/equation)	Operator	Organization Benchmark	Tracking Member(s)	Metrics Council Input
Design	**Detailed out design**	In-Scope requirements not covered in design (HDL)	Count of issues without HDL available label set * 100/Total issues	<=	25		

Figure: 10

[Source: MS Excel, Compiled by Author]

Excellence Sub Area: Design

Goal: Detailed out design

Metrics to track for Goal achievement (Definition): In-Scope requirements not covered in design (HDL)

Metrics to track for Goal achievement (Equation): (Count of issues without HDL available label set * 100)/Total issues

Coding

Excellence Sub-Area	Goals	Metrics to track for Goal achievement (definition/ description)	Metrics to track for Goal achievement (calculation/formula/equation)	Operator	Organization Benchmark	Tracking Member(s)	Metrics Council Input
Coding		Defect Density	(Total defects / Total estimated effort in PDs) x 100	<=	<=40		
		Defect Leakage	(Client reported defects / Total estimated effort in PDs) x 100	<=	<=3		
	Good qaulity code	Checkins without mapping Jira ticket	Count of checkins without Jira tickets * 100/Total Checkins				
		Defect Removal Efficiency	Internally reported defects / Total defects	>=	>= 93%		
		Rework	Time spent in Rework / Total time spent	<=	<=12%		

Figure: 11

[Source: MS Excel, Compiled by Author]

In Coding Sub-Area, there can be multiple metrics for Goal achievement. For example, Defect density, rework, or defect leakage.

Excellence Sub Area: Coding

Goal: Good quality code

Metrics to track for Goal achievement (Definition): Defect Density, Defect Leakage, Defect Removal Efficiency and Rework.

Metrics to track for Goal achievement (Equation): For Defect Density → (Total defects / Total estimated effort in PDs) x 100 or For Defect Removal Efficiency → Internally reported defects / Total defects.

Testing and Review

Excellence Sub-Area	Goals	Metrics to track for Goal achievement (definition/ description)	Metrics to track for Goal achievement (calculation/formula/equation)	Operator	Organization Benchmark	Tracking Member(s)	Metrics Council Input
Testing and Review		Test Case Coverage	(Executed test cases / Total no. of applicable test cases)*100				
		Defect Validity Ratio	Total Valid Nagarro Bugs/ (Total Valid Nagarro Bugs+ Total Invalid Nagarro Bugs)	>=	>=78%		
	Efficient testing	Testing Efficiency	count of issues having an existing testcase *100/Total issues				
		Test Case Effectiveness	Sum of valid defects reported through test cases. Defects are weighted by their severity.				
		Test Efficiency	(Total no. of Nagarro valid defects*100)/ Total Estimated Effort				
		Review Effectiveness	Internally reported review defects / Total defects	>=	>=40%		

Figure: 12

[Source: MS Excel, Compiled by Author]

Excellence Sub Area: Testing and Review

Goal: Efficient Testing

Metrics to track for Goal achievement (Definition): Some of them are Test Case Coverage, Testing Efficiency, Test Case Effectiveness and Review Effectiveness etc.

Metrics to track for Goal achievement (Equation): Some of them are:

Test Case Coverage → (Executed test cases / Total no. of applicable test cases) *100

Testing Efficiency → count of issues having an existing testcase *100/Total issues

Test Case Effectiveness → Sum of valid defects reported through test cases. Defects are weighted by their severity.

Review Effectiveness → Internally reported review defects / Total defects

Delivery

Excellence Sub-Area	Goals	Metrics to track for Goal achievement (definition/ description)	Metrics to track for Goal achievement (calculation/formula/equation)	Operator	Organization Benchmark	Tracking Member(s)	Metrics Council Input
Delivery		Sprint Completion Ratio	Completed scope of sprint / Committed scope of sprint	>=	>=90%		
		Velocity	No of story points completed in a sprint.				
	High delivery Diligence	Requirements delivered on time	Count of requirements(Stories) delivered for time period T * 100/ Count of total requirements(Stories) promised to be delivered for time period T				
		Schedule Variance	(Actual end date – Planned end date) / (Planned end date – Planned start date)		+-2%		

Figure: 13

[Source: MS Excel, Compiled by Author]

Excellence Sub Area: Delivery

Goal: High delivery Diligence

Metrics to track for Goal achievement (Definition): Some of them are: Requirements delivered on time, Sprint Completion Ratio, Velocity and Task Completion Ratio.

Metrics to track for Goal achievement (Equation): Some of them are:

Requirements delivered on time → Count of requirements (Stories) delivered for time period T * 100/ Count of total requirements (Stories) promised to be delivered for time period T

Sprint Completion Ratio → Completed scope of sprint / Committed scope of sprint

Task Completion Ratio → Completed Task Count/ Estimated Task Count

Productivity

Excellence Sub-Area	Goals	Metrics to track for Goal achievement (definition/ description)	Metrics to track for Goal achievement (calculation/formula/equation)	Operator	Organization Benchmark	Tracking Member(s)	Metrics Council Input
Productivity		Resource Utilization	Actual Earned Value / Available Resource Allocation		>=85%		
		Capacity Utilization	Estimated Effort/Available Capacity				

Figure: 14

[Source: MS Excel, Compiled by Author]

Excellence Sub Area: Productivity

Goal: Efficient Productivity

Metrics to track for Goal achievement (Definition): Resource Utilization and Capacity Utilization

Metrics to track for Goal achievement (Equation): Resource Utilization → Actual Earned Value / Available Resource Allocation and Capacity Utilization → Estimated Effort/Available Capacity

2. Now in an IT firm second excellence area could be Thinking Breakthrough/Consulting. In any organisation an employee needs to give innovative ideas along with his daily routine work. This section contains the information related to same.

Thinking Breakthrough/Consulting	Innovation							
	Technology							
	Business							

Figure: 15

[Source: MS Excel, Compiled by Author]

Excellence Area: Thinking Breakthrough/Consulting

Excellence Sub Area: Innovation, Technology and Business

Goal: Any Goal can be established for an employee if he gives his Innovative Ideas in Technology or Business.

3. Third Excellence Area can be People. Depending upon a person's communications skills and his/her leaning development within a project multiple goals can be set in this Excellence Area.

People	Employee feedback (ESAT)							
	Communication							
	Learning & Development							

Figure: 16

[Source: MS Excel, Compiled by Author]

Excellence Area: People

Excellence Sub Area: Employee feedback (ESAT), Communication and Learning & Development

Goal: Any Goal can be established for an employee depending upon his/her learning development within an organization.

4. Business and Others: Now another Excellence Area can be defined as Business. Here we store information related to an employee engagement in business apart from his daily routine work. Depending upon Client Feedback, metrics for an Employee can be designed.

Business	Client feedback (CSAT)		Overall CSAT score (Avg)	Always - 6 Mostly - 3 Sometimes - 1 Never - 0		6		
	Customer Engagement							
Others	Client							

Figure: 17

[Source: MS Excel, Compiled by Author]

Excellence Area: Business and Others

Excellence Sub Area: Client feedback (CSAT), Customer Engagement

Goal: Any Goal can be established for an employee depending upon his/her engagement within the business apart from his daily routine work.

Data Analysis

Iteration in EEP

Once we have designed the basis of our EEP then we can perform Iteration for each member of a team to calculate his/her overall percentage w.r.t to Goals Achieved. The very first iteration we are performing on Employee named Rishu Jain.

Here is the Iteration for Rishu Jain:

Engineering Excellence Iteration
Start date : 01/01/2022
End date : 30/06/2022
Employee Name: Rishu Jain

Excellence Area	Excellence Sub-Area	Goals	Total Number Value	Achieved Value	Achieved Percentage (%)	Operator	Organization Benchmark	Final Percentage (%)
Client Goals	Requirement Gathering	Fully understood user requirement	10	8	80.00	>=	75	106.67
	Design	Detailed out design	15	10	66.67	>=	70	95.24
	Coding	Good qaulity code - Defect Removal Efficiency	35	32	91.43	Equals	100	91.43
		Good qaulity code - Defect Leakage	10	6	60.00	>=	90	66.67
	Testing and Review	Efficient testing - Review Effectiveness	10	7	70.00	>=	50	140.00
		Efficient testing - Test Case Coverage	5	5	100.00	>=	75	133.33
		Efficient testing - Test Case Effectiveness	5	5	100.00	Equals	100	100.00
Thinking Breakthrough	Technology	Technological Ideas	1	0	0.00	Equals	100	0.00
	Business	Innovative Business Ideas	1	1	100.00	Equals	100	100.00
People	Communication	Communication	5	4	80.00	>=	80	100.00
	Learning & Development	Learning & Development	5	3	60.00	>=	50	120.00
Business	Client feedback	Client feedback	5	5	100.00	Equals	100	100.00
							Total Percentage	96.11

Figure: 18

[Source: MS Excel, Compiled by Author]

This is the very important step in in EEP after which Team Manager can have clear picture of his team performance within the specified time. In the figure above (Figure:) we have shown an example of Iteration for an individual employee. His percentage is calculated depending upon his assigned goals.

1. **At the top of Excel Sheet**, we are mentioning the basic details regarding the period for Start and End of the Iteration and the Name of the Employee.

2. **In Goals and Metrics sheet**, we have mentioned all possible goals for a particular project and their metrics (How to calculate them) but in a team, an individual is

responsible for some goals that are assigned to him. In the figure mentioned above, we have taken an example of some goals which are assigned to an employee i.e., an employee is responsible for these goals for that period.

3. **Total Number Value:** Total number of instances where an employee faces that situation of the Goal. For example, in Client Goals → Requirement Gathering → Total Number Value → 10 i.e., within that period an employee was given 10 times to gather and understand requirements from the clients.

4. **Achieved Value:** It specifies how many times an employee fulfilled the goal requirements. For example, out of 10 times where employee needs to gather project requirements from the clients, he/she can collect correct information only 8 times.

5. **Achieved Percentage:** It is the percentage calculated depending upon the Total Number Value and the Achieved Value.

6. **Organization Benchmark:** Here we are mentioning the organization benchmark value for a particular Goal. For Example, in requirement gathering Goal, organization benchmark could be ">=75%".

7. **Final Percentage:** It is the percentage calculated depending upon the Achieved Percentage Value and the Organization Benchmark Value. For example, in requirement gathering goal, an employee achieved 5% more than the organization benchmark value. Hence his final percentage for that goal is greater than 100%. Similarly rest of the percentages are calculated for all the goals assigned to an employee for that period.

8. **Total Percentage:** After calculating the Final Percentage for all the goals, we are now calculating the total percentage. It is the sum of all final percentages/total number of goals assigned to an employee. This comes out to be 96.11.

Criteria of EE Stars		Engineering Excellence Star	Silver
Gold			
1. All goals and metrics should have achieved% >=100%			
Silver			
90% <= OWA < 100%			
Bronze			
80% <= OWA < 90%			

Figure: 19

[Source: MS Excel, Compiled by Author]

Once the total percentage of an employee is calculated then we will calculate the EE stars for an employee. Criteria for an EE stars are:

1. **Gold Star:** All goals and metrics should have achieved **"% >=100%".**
2. **Silver Star:** All goals and metrics should have achieved **"90% <= OWA < 100%".**
3. **Bronze:** All goals and metrics should have achieved **"80% <= OWA < 90%".**

The Current EE star of an employee whose total percentage (**96.11**) is **SILVER**.

This is how we can calculate EE stars for everyone in a team for a project. This gives the Project Manager, the clear picture about the performance of the team. It also helps him to give some remedial measure to the team if the team is not performing well in his assigned goals.

We will calculate the percentage of each member in the team. Depending upon his/her assigned goals within the given time frame, we will calculate different metrics and final percentage.

Iteration for Abhishek Saxena:

Engineering Excellence Iteration
Start date : 01/01/2022
End date : 30/06/2022
Employee Name: Abhishek Saxena

Excellence Area	Excellence Sub-Area	Goals	Total Number Value	Achieved Value	Achieved Percentage (%)	Operator	Organization Benchmark	Final Percentage (%)
Client Goals	Requirement Gathering	Fully understood user requirement	15	12	80.00	>=	75	106.67
	Design	Detailed out design	12	10	83.33	>=	70	119.05
	Coding	Good qaulity code - Defect Removal Efficiency	25	22	88.00	Equals	100	88.00
		Good qaulity code - Defect Leakage	10	6	60.00	>=	90	66.67
	Testing and Review	Efficient testing - Review Effectiveness	10	10	100.00	>=	50	200.00
		Efficient testing - Test Case Coverage	1	0	0.00	>=	75	0.00
		Efficient testing - Test Case Effectiveness	5	5	100.00	Equals	100	100.00
Thinking Breakthrough	Technology	Technological Ideas	1	0	0.00	Equals	100	0.00
	Business	Innovative Business Ideas	1	1	100.00	Equals	100	100.00
							Total Percentage	86.71

Figure: 20

[Source: MS Excel, Compiled by Author]

Total Percentage: After calculating the Final Percentage for all the goals, we are now calculating the total percentage. It is the sum of all final percentages/total number of goals assigned to an employee. This comes out to be 86.71.

Criteria of EE Stars	Engineering Excellence Star	Bronze
Gold		
1. All goals and metrics should have achieved% >=100%		
Silver		
90% <= OWA < 100%		
Bronze		
80% <= OWA < 90%		

Figure: 21

[Source: MS Excel, Compiled by Author]

Once the total percentage of an employee is calculated then we will calculate the EE stars for an employee. Criteria for an EE stars are:

1. **Gold Star:** All goals and metrics should have achieved **"% >=100%".**
2. **Silver Star:** All goals and metrics should have achieved **"90% <= OWA < 100%".**
3. **Bronze:** All goals and metrics should have achieved **"80% <= OWA < 90%".**

The Current EE star of an employee whose total percentage (**86.71**) is **Bronze**.

Iteration for Sana Irshad:

Engineering Excellence Iteration
Start date : 01/01/2022
End date : 30/06/2022
Employee Name: Sana Irshad

Excellence Area	Excellence Sub-Area	Goals	Total Number Value	Achieved Value	Achieved Percentage (%)	Operator	Organization Benchmark	Final Percentage (%)
Client Goals	Requirement Gathering	Fully understood user requirement	20	16	80.00	>=	75	106.67
	Design	Detailed out design	14	12	85.71	>=	70	122.45
	Coding	Good qaulity code - Defect Removal Efficiency	20	15	75.00	Equals	100	75.00
Thinking Breakthrough	Technology	Technological Ideas	1	1	100.00	Equals	100	100.00
	Business	Innovative Business Ideas	1	1	100.00	Equals	100	100.00
People	Communication	Communication	5	4	80.00	>=	80	100.00
	Learning & Development	Learning & Development	5	3	60.00	>=	50	120.00
Business	Client feedback	Client feedback	5	5	100.00	Equals	100	100.00
							Total Percentage	103.01

Figure: 22

[Source: MS Excel, Compiled by Author]

Total Percentage: After calculating the Final Percentage for all the goals, we are now calculating the total percentage. It is the sum of all final percentages/total number of goals assigned to an employee. This comes out to be 103.01.

Criteria of EE Stars
Gold
1. All goals and metrics should have achieved% >=100%
Silver
90% <= OWA < 100%
Bronze
80% <= OWA < 90%

Engineering Excellence Star	Gold

Figure: 23

[Source: MS Excel, Compiled by Author]

Once the total percentage of an employee is calculated then we will calculate the EE stars for an employee. Criteria for an EE stars are:

1. **Gold Star:** All goals and metrics should have achieved **"% >=100%".**
2. **Silver Star:** All goals and metrics should have achieved **"90% <= OWA < 100%".**
3. **Bronze:** All goals and metrics should have achieved **"80% <= OWA < 90%".**

The Current EE star of an employee whose total percentage (103.01) is **Gold**.

Iteration for Saransh Gupta:

Engineering Excellence Iteration
Start date : 01/01/2022
End date : 30/06/2022
Employee Name: Saransh Gupta

Excellence Area	Excellence Sub-Area	Goals	Total Number Value	Achieved Value	Achieved Percentage (%)	Operator	Organization Benchmark	Final Percentage (%)
Client Goals	Requirement Gathering	Fully understood user requirement	12	9	75.00	>=	75	100.00
	Design	Detailed out design	15	10	66.67	>=	70	95.24
	Coding	Good qaulity code - Defect Removal Efficiency	15	12	80.00	Equals	100	80.00
		Good qaulity code - Defect Leakage	11	6	54.55	>=	90	60.61
	Testing and Review	Efficient testing - Review Effectiveness	12	7	58.33	>=	50	116.67
		Efficient testing - Test Case Coverage	6	5	83.33	>=	75	111.11
		Efficient testing - Test Case Effectiveness	5	4	80.00	Equals	100	80.00
Thinking Breakthrough	Technology	Technological Ideas	1	0	0.00	Equals	100	0.00
	Business	Innovative Business Ideas	1	1	100.00	Equals	100	100.00
People	Communication	Communication	5	4	80.00	>=	80	100.00
	Learning & Development	Learning & Development	5	3	60.00	>=	50	120.00
Business	Client feedback	Client feedback	5	5	100.00	Equals	100	100.00
							Total Percentage	88.64

Figure: 24

[Source: MS Excel, Compiled by Author]

Total Percentage: After calculating the Final Percentage for all the goals, we are now calculating the total percentage. It is the sum of all final percentages/total number of goals assigned to an employee. This comes out to be 88.64.

Criteria of EE Stars
Gold
1. All goals and metrics should have achieved% >=100%
Silver
90% <= OWA < 100%
Bronze
80% <= OWA < 90%

Engineering Excellence Star	Bronze

Figure: 25

[Source: MS Excel, Compiled by Author]

Once the total percentage of an employee is calculated then we will calculate the EE stars for an employee. Criteria for an EE stars are:

1. **Gold Star:** All goals and metrics should have achieved **"% >=100%".**
2. **Silver Star:** All goals and metrics should have achieved **"90% <= OWA < 100%".**
3. **Bronze:** All goals and metrics should have achieved **"80% <= OWA < 90%".**

The Current EE star of an employee whose total percentage (88.64) is **Bronze**.

Iteration for Rohan Dham:

Engineering Excellence Iteration
Start date : 01/01/2022
End date : 30/06/2022
Employee Name: Rohan Dham

Excellence Area	Excellence Sub-Area	Goals	Total Number Value	Achieved Value	Achieved Percentage (%)	Operator	Organization Benchmark	Final Percentage (%)
Client Goals	Requirement Gathering	Fully understood user requirement	10	7	70.00	>=	75	93.33
	Design	Detailed out design	15	10	66.67	>=	70	95.24
	Coding	Good qaulity code - Defect Removal Efficiency	30	20	66.67	Equals	100	66.67
		Good qaulity code - Defect Leakage	10	6	60.00	>=	90	66.67
	Testing and Review	Efficient testing - Review Effectiveness	10	10	100.00	>=	50	200.00
		Efficient testing - Test Case Coverage	5	3	60.00	>=	75	80.00
		Efficient testing - Test Case Effectiveness	5	3	60.00	Equals	100	60.00
							Total Percentage	94.56

Figure: 26

[Source: MS Excel, Compiled by Author]

Total Percentage: After calculating the Final Percentage for all the goals, we are now calculating the total percentage. It is the sum of all final percentages/total number of goals assigned to an employee. This comes out to be 94.56.

Criteria of EE Stars
Gold
1. All goals and metrics should have achieved% >=100%
Silver
90% <= OWA < 100%
Bronze
80% <= OWA < 90%

Engineering Excellence Star	Silver

Figure: 27

[Source: MS Excel, Compiled by Author]

Once the total percentage of an employee is calculated then we will calculate the EE stars for an employee. Criteria for an EE stars are:

1. **Gold Star:** All goals and metrics should have achieved **"% >=100%".**
2. **Silver Star:** All goals and metrics should have achieved **"90% <= OWA < 100%".**
3. **Bronze:** All goals and metrics should have achieved **"80% <= OWA < 90%".**

The Current EE star of an employee whose total percentage (94.56) is **Silver**.

Team Details

Once we have written down all goals and metrics for our project team members and calculated their efficiencies then after that we need to capture some common information regarding our project team. Here we are mentioning our team details in which each member's tasks will be analysed according to his/her assigned goals. Below Figure () will give insights on how to record team information.

Team Details

Employee_Name	Email Id	Years of Experience	Iteration_Start_Date	Iteration_End_Date	EE Percentage	EE Star	Project Nicknames(in case of multiple teams)
Rishu Jain	rishu@test.com.test	6	01-01-2022	30-06-2022	96.11%	Silver	Service Cloud
Abhishek	Abhishek@test.com.test	5	01-01-2022	30-06-2022	86.71%	Bronze	Service Cloud
Sana	Sana@test.com.test	5	01-01-2022	30-06-2022	103.01%	Gold	Service Cloud
Saransh	Saransh@test.com.test	4	01-01-2022	30-06-2022	88.64%	Bronze	Service Cloud
Rohan	Rohan@test.com.test	5	01-01-2022	30-06-2022	94.56%	Silver	Service Cloud
					93.81%		

Team Percentage = 93.81%

EE Star for Team : Silver

Figure: 28

[Source: MS Excel, Compiled by Author]

Here we are capturing some Team information. The information is as follows:

1. **Employee Name:** Name of the Employee working in an organization.

2. **Email Id:** Official Email Id of an Employee. Here we have taken sample email id.

3. **Years of Experience:** How much years of experience an employee has.

4. **Iteration Start Date and Iteration End Date:** Here we are recording the time for which we will calculate the Engineering Excellence of an employee.

5. **EE Percentage:** Percentage calculated depending upon his/her assigned goals and metrics.

6. **EE Star:** This information will store EE star details once the iteration was completed for an individual employee and his/her percentage has been calculated.

7. **Project Nickname:** If there are multiple teams within a project then nicknames will help us to identify the EEP (Engineering Excellence Plan) developed for which Team.

Notes and Glossary

Notes		
Item	**Noted By**	**Status**
Exceptions given to Sana in Testing Goals	Team Lead	Final percentage is 100%

Figure: 29

[Source: MS Excel, Compiled by Author]

Notes: General information written down by EEP Managers in between the Iterations for an employee. For example: one employee was given exceptions in Testing Goals and her final percentage for testing goals is assumed to 100%.

Glossary	
Acronyms	**Definition**
PIF	Project Initiation Form
EEPGM	Engineering Excellence Program Manager
PCI	Process Compliance Index
DP	Data Privacy
T&M	Time and Material
PUP	Project Unified Plan
MSA	Master Service Agreement
SOW	Statement of Work

Figure: 30

[Source: MS Excel, Compiled by Author]

Glossary: A glossary is also known as a vocabulary. It is an alphabetical list of terms in a particular domain of knowledge with the definitions for those terms. For example, we have used PUP in project definition multiple times which means Project Unified Plan.

Conclusion

Advantages of Using EEP (Engineering Excellence Plan)

Effectiveness: It shows the employee's progress in numbers and his/her effectiveness towards project goals and objectives.

Best Practices: It provides the Manager, the ability to determine the person approaches towards his goals. How the employee is achieving his goals and in what manners. What practices he is following to achieve his goals.

Improvement: EEP provides ongoing assessment of an employees for a defined period and helps managers to identify the areas of improvement in his team.

Accountability: EEP can also become the official document for interpreting an organization's worth to its stakeholders.

Promotion & Advocacy: By looking at EE stars of an employees in Engineering Excellence Plan, managers can give promotions or rewards in his team.

Appraisal & Coordination: It gives managers, the performance information regarding each employee to make better operational decisions.

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