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DESIGN AND DEVELOPMENT OF AN INTERACTIVE DASHBOARD FOR REAL-TIME DATA VISUALIZATION AND ANALYSIS

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Abstract
The increasing amount of data generated by businesses and organizations has led to a growing demand for effective data visualization and analysis tools. Interactive dashboards have emerged as a popular solution, allowing users to easily access, manipulate, and interpret data in real time. In this research paper, we present the design and development of an interactive dashboard for real-time data visualization and analysis.The primary objective of this research is to develop a dashboard that provides users with a comprehensive and intuitive interface for data exploration and analysis. The dashboard is designed to handle large amounts of data, presenting it in a visually appealing and easily understandable format. Additionally, the dashboard enables users to interact with the data in real time, allowing them to drill down into specific metrics and gain deeper insights.The research begins with an overview of the current state of data visualization and analysis tools. It then discusses the design principles and methodology used in the development of the interactive dashboard. The technical aspects of the dashboard, including the software and technologies used, are also described. Finally, the results of testing and evaluation of the dashboard are presented, demonstrating its effectiveness and usability.The interactive dashboard developed in this research provides a valuable model for other businesses and organizations looking to leverage their data for improved decision-making and strategic planning. By providing a comprehensive and intuitive interface for data exploration and analysis, the dashboard enables users to gain deeper insights into their data in real time.

Keywords: Dashboard design, Real-time data visualization, Data analysis, Interactive visualization, User interface, Data integration, Data processing, Data analytics, Google Sheets.

Introduction:

The Design and Development of an Interactive Dashboard for Real-time Data Visualization and Analysis research paper aims to explore the creation of an innovative and user-friendly dashboard that can display real-time data in a visually compelling way. The paper will delve into the process of developing the dashboard, including the technical aspects and design considerations.

The dashboard is designed to provide users with an easy-to-use platform that can collect, process, and visualize data from multiple sources in real time. The paper will discuss the methods used to ensure the accuracy and reliability of the data, as well as the tools and technologies employed to create the dashboard.

The dashboard aims to provide users with an interactive and customizable platform that can be tailored to their specific needs, and the paper will explore how this is achieved.

Overall, the research paper aims to contribute to the field of data visualization and analysis by presenting a novel approach to real-time data monitoring and visualization, which is used as a visual representation in graphical and chart format, helps to identify the trends, It helps for generating reports and helps to measure efficiency.

Objectives:

The R & D department of "Forbes Marshall" was facing difficulty in knowing the projects status by all stakeholders of the projects which had an impact on decision-making for future work handling of the projects. As there was lots of mismanagement that occurred due to the non-availability of exact information of projects at the same time to every person associated with the projects. It was a time-consuming task to get every project status from the Gantt chart and difficult to present in cross-meetings and management meetings. Collective information as required by stakeholders to handle the projects and take necessary action for problem areas. The S, P, E1, E2, and D gateway used by them for all projects needed to be viewed by all stakeholders and management to get an idea about the project status. For this, an automated system was required.

The main objectives of this project are.

1. Designing a Framework for the creation, adoption, and success of a dashboard for a manufacturing company.
2. Implementation of the framework.
3. Creation of google sheets automation through which project status is identified.
4. Identifying processes in which the project is currently going on.
5. Creation of a visual chart and displaying analysis of projects.
6. Displaying the on-time score of projects.

Developing Effective Dashboard:

The effectiveness of the dashboard can be assessed by five potential benefits that they generate for the organization like sharing metrics for business problems, a framework for recognizingexcellent performance, diagnosing poor performance, and evaluating different options for remedial action. The dashboard should show the current position and perhaps forecast. It should be a tool for increased profitability and decision-making.

In this paper following points are taken into consideration for developing the dashboard

1. A dashboard is used to measure consistency across various departments in the organization.
2. A dashboard is used to monitor performance. Monitor in turn may be both evaluative and developmental.
3. Dashboard used to plan goals and strategies depending upon the current situation of the projects.
4. Dashboard used to analyze the complex and diversified data faced by senior-level management.
5. The current system used by the organization is the Gantt chart by this system it is become too difficult to get every project status, dashboard makesit easier to analyze.

Problems with the current system

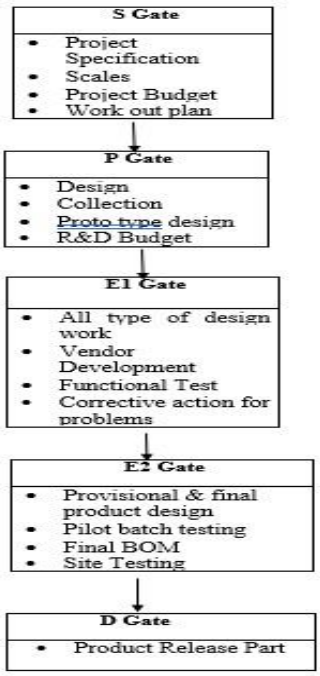
1. It is a time-consuming task to get every project status from the Gantt chart and difficult to present in cross-meetings and management meetings.
2. It became difficult to coordinate with other departments, every time have to send emails for project status.
3. Mismanagement occurs due to not having exact information on projects.

Framework for the Dashboard

This project aims to create an operational dashboard for the "***Forbes Marshall company***." The main challenge that the company faced was to have a single display for knowing different project statuses such as currently ongoing projects, analysis of the projects, and on-time scores of the projects. The R

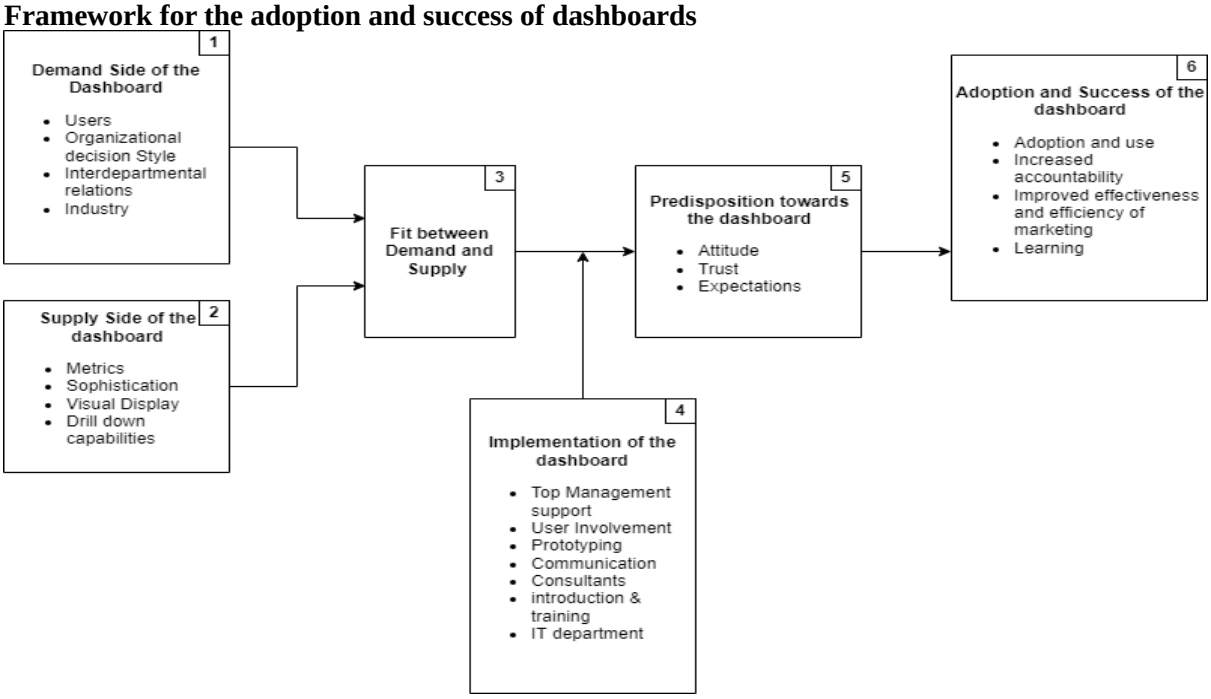
& D department of "Forbes Marshall" was facing difficulty in knowing the projects status by all stakeholders of the projects which had an impact on decision-making for future work handling of the projects.

For any new project company was using S,P,E1,E2,D gateway process, the S,P,E1,E2,D process is as follows



(Fig. 1 SPEED gateway process)

Framework for the adoption and success of dashboards

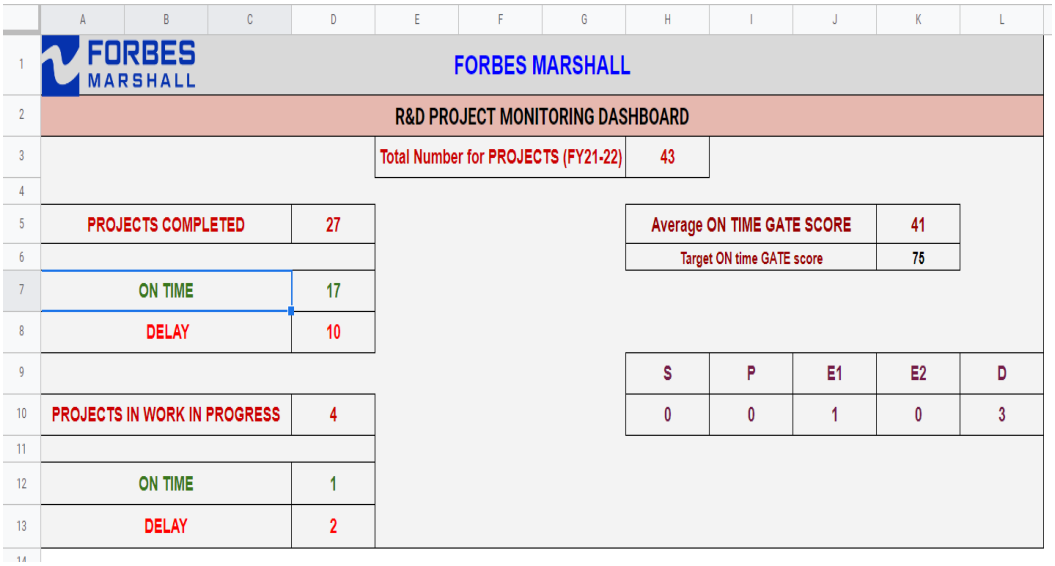


(Fig. 2 Framework for the adoption and success of dashboards)

As was already said, a dashboard that progresses past the first two stages has many of the same characteristics as a marketing decision support system. Therefore, we can build on the substantial literature on decision support systems and information systems to provide a framework for the adoption and success of dashboards.
The framework serves two purposes:
First, it serves as a jumping off point for research on the adoption and usage of dashboards. Second, it needs to assist businesses that want to create and use dashboards with a methodical inventory of pertinent issues.
The above figure depicts our approach, which proposes that dashboard adoption and success are determined by five major factors: demand, supply, the fit between demand and supply, the implementation process, and user predisposition.

Effective dashboards for the Forbes Marshall have developed the explanation of each dashboard is given below

1. Projects Monitoring Dashboard



(Fig.3 Project Monitoring Dashboard)

Summary dashboard shows summary status of project, how many projects completed, work in progress, and how many projects are in S,P,E1,E1,D respectively. How many projects are going on in the current year out of which how many are completed on time, delayed and also how many are work in progress out of which how many are going delayed and how many are going on time. For work in progress projects the current gate of the project is also shown.For this dashboard one input sheet is there in which gatewise project data, planned and actual dates of gate opened and closed are filled and there is one more backend sheet which reflects data on the dashboard. Backend sheet is an important part of this dashboard. Parameters of project status are “Not started, Work in progress, On time, Delay, Before time” These status are depend on S Gate Open and P, E1, E2, D Gate close actual and planned Dates

Condition for Formulas

(Table 1 Conditions for making formula)

Sr. No.	Actual Start Date	Actual End Date	Condition	Current Status
1	Blank	Blank		Not Started

2	Filled	Blank		Work In progress
3	Filled	Filled	Actual End Date = Planned End Date	On Time
4	Filled	Filled	Actual End Date > Planned End Date	Delayed
5	Filled	Filled	Actual End Date < Planned End Date	Before Time

Individual gate status & overall project status

First, we calculate individual gate status then overall project status displayed.

For calculation of gate status, we use the if formula.

IF(CELL NO="Hold","HOLD",IF(CELL NO="Pass","PASS",IF(CELL NO="NA","NA",IF(CELL NO="TBI","TBI",IF(AND(LEN(CELL NO)=0),"Not started",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)=0,),"WORK IN PROGRESS",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)<>0,CELL NO=CELL NO,),"ON TIME",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)<>0,D2>C2),"DELAY",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)<>0,CELL NO<CELL NO),"BEFORE TIME")))))))))

	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	P-Gate Actual	P-Gate STATUS	E1-GATE Planne	E1-GATE Actual	E1-GATE STATUS	E2-GATE Planne	E2-GATE Actual	E2-GATE STATUS	D-GATE Planne	D-GATE Actual	D-GATE STATUS	PROJECT STATUS	PROJECT FINAL STATUS	ON TIME SCORE(IN %)	
2	Jan2018	ON TIME	Apr2018		WORK IN PROGRES	Oct2018		WORK IN PROGRES	Sep2019		WORK IN PROGRESS	ON TIME	WORK IN PROGRESS	20	E1
3	NA	NA	NA	NA	NA	NA	NA	NA	Sep2019		WORK IN PROGRESS	NA	WORK IN PROGRESS	0	D
4	Jan2019	ON TIME	Apr2019	Apr2019	ON TIME	Sep2019	Apr2020	DELAY	Sep2019	Mar2021	DELAY	DELAY	COMPLETED	60	FALSE
5	Apr2019	ON TIME	Jun2020	Jun2020	ON TIME	Jun2020	Jun2020	ON TIME	Aug2020	Aug2020	ON TIME	ON TIME	COMPLETED	100	FALSE
6	Sep2019	ON TIME	Dec2019	Dec2019	ON TIME	Feb2020	May2020	DELAY	Feb2020		WORK IN PROGRESS	DELAY	WORK IN PROGRESS	40	D
7	Apr2018	ON TIME	Sep2018	Oct2018	DELAY	Feb2019	Sep2019	DELAY	Feb2019		WORK IN PROGRESS	DELAY	WORK IN PROGRESS	40	D
8	Apr2019	ON TIME	Jun2019	Jun2019	ON TIME	Sep2019	Sep2021	DELAY	Sep2019	Sep2021	DELAY	DELAY	COMPLETED	60	FALSE
9	Pass	PASS	Pass	Pass	PASS	Feb2021	Feb2021	ON TIME	Mar2021	Mar2021	ON TIME	ON TIME	COMPLETED	60	FALSE
10	Feb2019	ON TIME	Mar2019	Mar2019	ON TIME	May2019	Nov2019	DELAY	Mar2021	Mar2021	ON TIME	ON TIME	COMPLETED	80	FALSE
11	Mar2019	ON TIME	Jun2019	Jun2019	ON TIME	Sep2019	Jan2020	DELAY	Jan2020	Sep2021	DELAY	DELAY	COMPLETED	40	FALSE
12	Mar2019	ON TIME	Jun2019	Jun2019	ON TIME	Sep2019	May2020	DELAY	Sep2019	Aug2020	DELAY	DELAY	COMPLETED	60	FALSE
13	Dec2019	ON TIME	Mar2020	Feb2021	DELAY	Dec2021	Dec2021	ON TIME	Dec2021	Dec2021	ON TIME	ON TIME	COMPLETED	80	FALSE
14	Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	HOLD	HOLD	20	FALSE
15	Aug2019	ON TIME	Oct2019	Oct2019	ON TIME	Oct2020	Oct2020	ON TIME	Nov2020	Nov2020	ON TIME	ON TIME	COMPLETED	100	FALSE
16	Pass	PASS	Pass	Pass	PASS	Pass	Pass	PASS	Dec2020	Dec2020	ON TIME	ON TIME	COMPLETED	40	FALSE
17	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	0	FALSE
18	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	20	FALSE
19	Jun2021	DELAY	Apr2021	Aug2021	DELAY	Sep2021	Dec2021	DELAY	Sep2021	Mar2022	DELAY	DELAY	COMPLETED	20	FALSE
20	Feb2021	ON TIME	Pass	Pass	PASS	May2021	May2021	ON TIME	May2021	May2021	ON TIME	ON TIME	COMPLETED	80	FALSE
21	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	0	FALSE
22	Feb2021	ON TIME	Dec2021	Dec2021	ON TIME	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	60	FALSE
23	Feb2021	ON TIME	Nov2021	Nov2021	ON TIME	May2022	Apr2022	BEFORE TIME	Mar2022	Mar2022	ON TIME	ON TIME	COMPLETED	80	FALSE
24	Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	HOLD	HOLD	20	FALSE
25	Dec2020	ON TIME	Mar2021	Mar2021	ON TIME	Oct2021	Oct2021	ON TIME	Oct2021	Oct2021	ON TIME	ON TIME	COMPLETED	100	FALSE
26	Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	HOLD	HOLD	0	FALSE
27	Pass	PASS	Sep2021	Sep2021	ON TIME	Jan2022	Jan2022	ON TIME	Jan2022	Jan2022	ON TIME	ON TIME	COMPLETED	60	FALSE
28	Pass	PASS	Jul2021	Jul2021	ON TIME	Sep2021	Sep2021	ON TIME	Dec2021	Dec2021	ON TIME	ON TIME	COMPLETED	60	FALSE

(Fig. 4 Individual gate status & overall project status)

Projects completed/ work in progress

How many projects completed are shown and this data taken from the backend sheet, in the backend sheet from the final status of the project by using COUNTIF completed projects are counted.

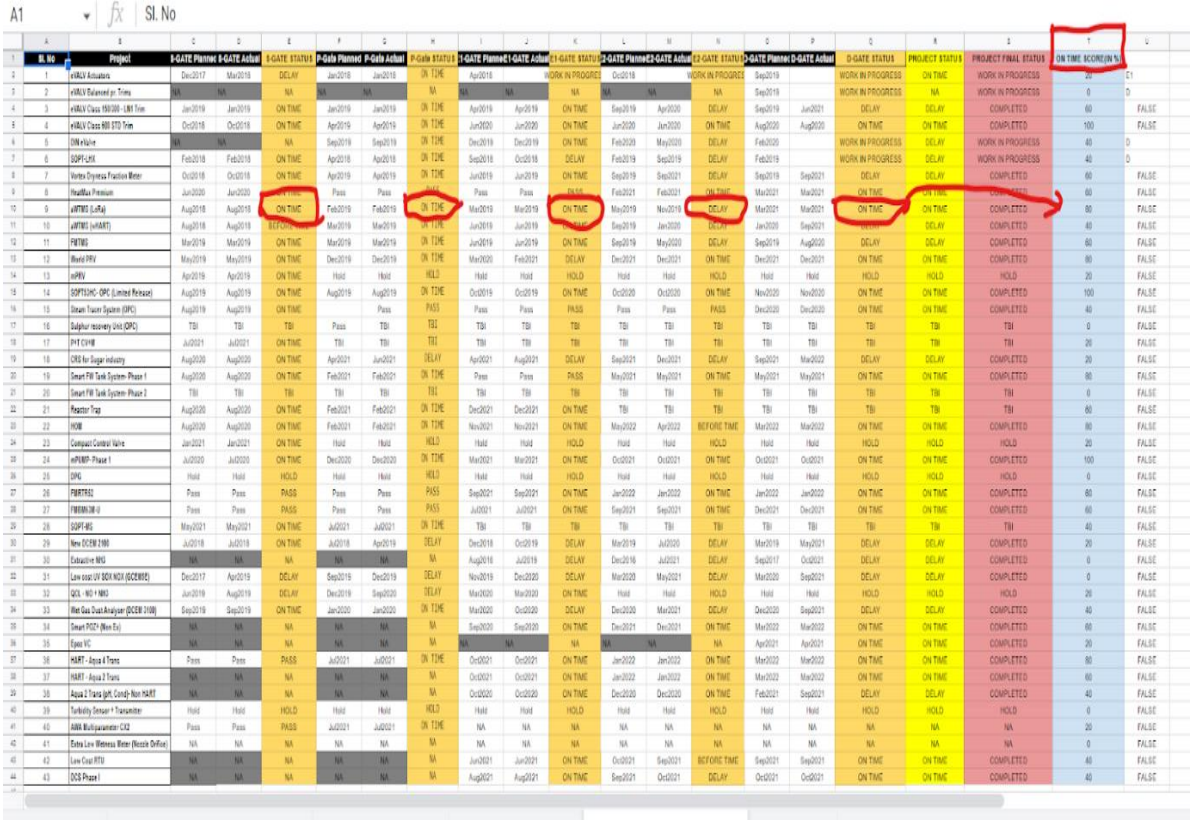
Projects completed/ Work in progress on time, delay

Discussed above how to calculate completed projects now we are calculating completed on time, in backend sheet there is one column name as Project status where we can find status of project, from this column we get data for on time as well as delay project and by simply using COUNTIFS, here we use COUNTIFS because we are taking multiple conditions for calculating status.

For finding the current gate of the project, if the actual date of the next gate is not written then the status of the previous gate will display as status of project.

Average on time score

For calculate average on time score we calculate first we calculate on time score of individual gate by simply taking out of five in how many gates on time score occurred (COUNTIF(Range,"ON TIME")/5)*100.



(Fig. 5 On time score of projects)

Find out Final Project status

Used in Sheet 40(2) in input sheet for column S

It can take value from D gate Actual (input sheet for column P)

Please see below red colour border columns and arrow for reference

E1-GATE Planne	E1-GATE Actua	E1-GATE STATUS	E2-GATE Planne	E2-GATE Actua	E2-GATE STATUS	D-GATE Planned	D-GATE Actual	D-GATE STATUS	PROJECT STATUS	PROJECT FINAL STATUS	ON TIME SCORE(IN %)	
Apr2018		WORK IN PROGRES	Oct2018		WORK IN PROGRES	Sep2019		WORK IN PROGRESS	ON TIME	WORK IN PROGRESS	20	E1
NA	NA	NA	NA	NA	NA	Sep2019		WORK IN PROGRESS	NA	WORK IN PROGRESS	0	D
Apr2019	Apr2019	ON TIME	Sep2019	Apr2020	DELAY	Sep2019	Jun2021	DELAY	DELAY	COMPLETED	60	FALSE
Jun2020	Jun2020	ON TIME	Jun2020	Jun2020	ON TIME	Aug2020	Aug2020	ON TIME	ON TIME	COMPLETED	100	FALSE
Dec2019	Dec2019	ON TIME	Feb2020	May2020	DELAY	Feb2020		WORK IN PROGRESS	DELAY	WORK IN PROGRESS	40	D
Sep2018	Oct2018	DELAY	Feb2019	Sep2019	DELAY	Feb2019		WORK IN PROGRESS	DELAY	WORK IN PROGRESS	40	D
Jun2019	Jun2019	ON TIME	Sep2019	Sep2021	DELAY	Sep2019	Sep2021	DELAY	DELAY	COMPLETED	60	FALSE
Pass	Pass	PASS	Feb2021	Feb2021	ON TIME	Mar2021	Mar2021	ON TIME	ON TIME	COMPLETED	60	FALSE
Mar2019	Mar2019	ON TIME	May2019	Nov2019	DELAY	Mar2021	Mar2021	ON TIME	ON TIME	COMPLETED	80	FALSE
Jun2019	Jun2019	ON TIME	Sep2019	Jan2020	DELAY	Jan2020	Sep2021	DELAY	DELAY	COMPLETED	40	FALSE
Jun2019	Jun2019	ON TIME	Sep2019	May2020	DELAY	Sep2019	Aug2020	DELAY	DELAY	COMPLETED	60	FALSE
Mar2020	Feb2021	DELAY	Dec2021	Dec2021	ON TIME	Dec2021	Dec2021	ON TIME	ON TIME	COMPLETED	80	FALSE
Hold	Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	HOLD	HOLD	20	FALSE
Oct2019	Oct2019	ON TIME	Oct2020	Oct2020	ON TIME	Nov2020	Nov2020	ON TIME	ON TIME	COMPLETED	100	FALSE
Pass	Pass	PASS	Pass	Pass	PASS	Dec2020	Dec2020	ON TIME	ON TIME	COMPLETED	40	FALSE
TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	0	FALSE
TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	20	FALSE
Apr2021	Aug2021	DELAY	Sep2021	Dec2021	DELAY	Sep2021	Mar2022	DELAY	DELAY	COMPLETED	20	FALSE
Pass	Pass	PASS	May2021	May2021	ON TIME	May2021	May2021	ON TIME	ON TIME	COMPLETED	80	FALSE
TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	0	FALSE
Dec2021	Dec2021	ON TIME	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	60	FALSE
Nov2021	Nov2021	ON TIME	May2022	Apr2022	BEFORE TIME	Mar2022	Mar2022	ON TIME	ON TIME	COMPLETED	80	FALSE

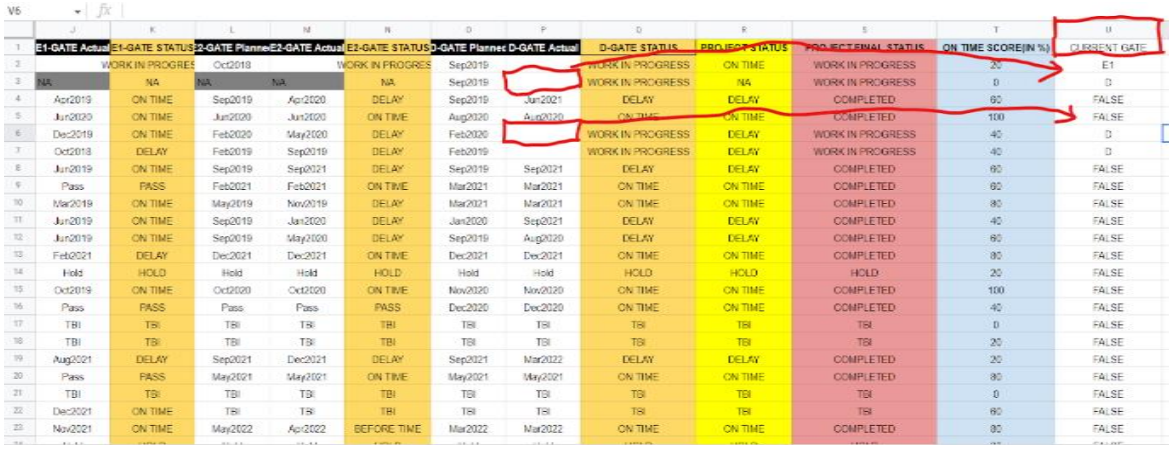
(Fig. 6 Project Status)

=IF(CELL NO ="Hold","HOLD",IF(CELL NO ="Pass","PASS",IF(CELL NO ="NA","NA",IF(CELL NO ="TBI","TBI",IF(LEN(CELL NO)=0,"WORK IN PROGRESS",IF(LEN(CELL NO)<>0,"COMPLETED",IF(LEN(CELL NO =0),"NOT STARTED")))))))

Find Out Current Gate of PROJECT

=IF(AND(LEN(CELL NO)=0,LEN(CELL NO)=0,LEN(CELL NO)=0,LEN(M2)=0,LEN(CELL NO)=0),"S",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)=0,LEN(CELL NO)=0,LEN(CELL NO)=0,LEN(CELL NO)=0),"P",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)<>0,LEN(CELL NO)=0,LEN(CELL NO)=0,LEN(CELL NO)=0),"E1",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)<>0,LEN(CELL NO)<>0,LEN(CELL NO)=0,LEN(CELL NO)=0),"E2",IF(AND(LEN(CELL NO)<>0,LEN(CELL NO)<>0,LEN(CELL NO)<>0,LEN(CELL NO)<>0,LEN(CELL NO)=0),"D")))))

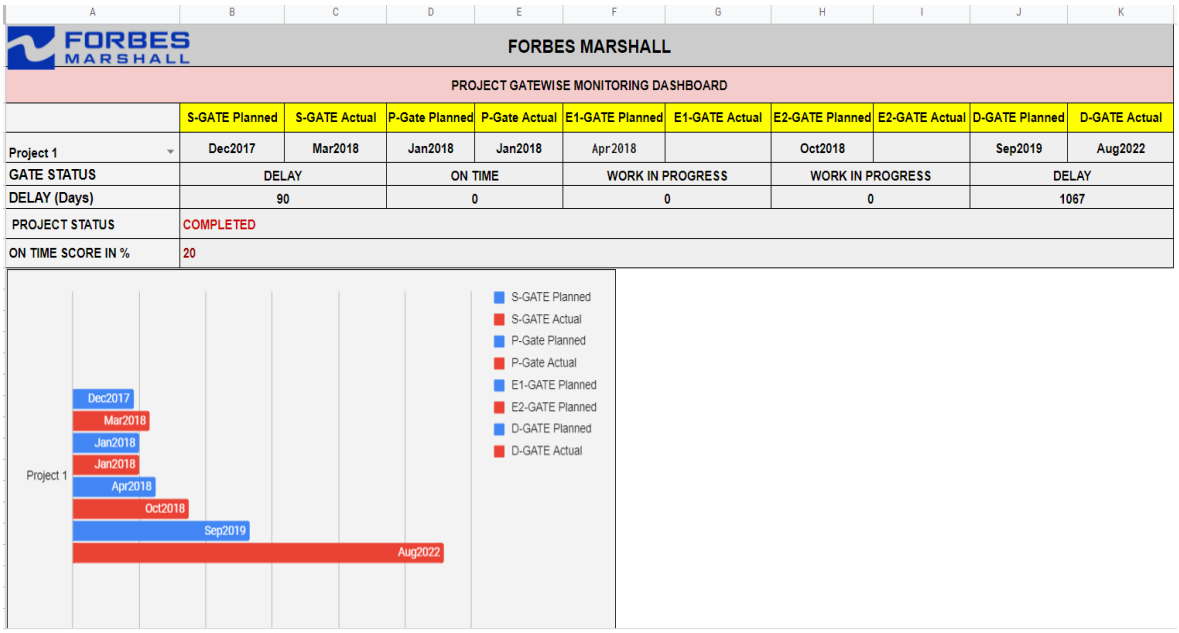
Please see below red color border columns and arrow for reference



E1-GATE Actual	E1-GATE STATUS	E2-GATE Planne	E2-GATE Actual	E2-GATE STATUS	D-GATE Planned	D-GATE Actual	D-GATE STATUS	PROJECT STATUS	PROJECT FINAL STATUS	ON TIME SCORE(IN %)	CURRENT GATE
	WORK IN PROGRES	Oct2018		WORK IN PROGRES	Sep2019		WORK IN PROGRESS	ON TIME	WORK IN PROGRESS	20	E1
NA	NA	NA	NA	NA	Sep2019		WORK IN PROGRESS	NA	WORK IN PROGRESS	0	D
Apr2019	ON TIME	Sep2019	Apr2020	DELAY	Sep2019	Jun2021	DELAY	DELAY	COMPLETED	60	FALSE
Jun2020	ON TIME	Jun2020	Jun2020	ON TIME	Aug2020	Aug2020	ON TIME	ON TIME	COMPLETED	100	FALSE
Dec2019	ON TIME	Feb2020	May2020	DELAY	Feb2020		WORK IN PROGRESS	DELAY	WORK IN PROGRESS	40	D
Oct2018	DELAY	Feb2019	Sep2019	DELAY	Feb2019		WORK IN PROGRESS	DELAY	WORK IN PROGRESS	40	D
Jun2019	ON TIME	Sep2019	Sep2021	DELAY	Sep2019	Sep2021	DELAY	DELAY	COMPLETED	60	FALSE
Pass	PASS	Feb2021	Feb2021	ON TIME	Mar2021	Mar2021	ON TIME	ON TIME	COMPLETED	60	FALSE
Mar2019	ON TIME	May2019	Nov2019	DELAY	Mar2021	Mar2021	ON TIME	ON TIME	COMPLETED	80	FALSE
Jun2019	ON TIME	Sep2019	Jan2020	DELAY	Jan2020	Sep2021	DELAY	DELAY	COMPLETED	40	FALSE
Jun2019	ON TIME	Sep2019	May2020	DELAY	Sep2019	Aug2020	DELAY	DELAY	COMPLETED	60	FALSE
Feb2021	DELAY	Dec2021	Dec2021	ON TIME	Dec2021	Dec2021	ON TIME	ON TIME	COMPLETED	80	FALSE
Hold	HOLD	Hold	Hold	HOLD	Hold	Hold	HOLD	HOLD	HOLD	20	FALSE
Oct2019	ON TIME	Oct2020	Oct2020	ON TIME	Nov2020	Nov2020	ON TIME	ON TIME	COMPLETED	100	FALSE
Pass	PASS	Pass	Pass	PASS	Dec2020	Dec2020	ON TIME	ON TIME	COMPLETED	40	FALSE
TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	0	FALSE
TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	20	FALSE
Aug2021	DELAY	Sep2021	Dec2021	DELAY	Sep2021	Mar2022	DELAY	DELAY	COMPLETED	20	FALSE
Pass	PASS	May2021	May2021	ON TIME	May2021	May2021	ON TIME	ON TIME	COMPLETED	80	FALSE
TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	0	FALSE
Dec2021	ON TIME	TBI	TBI	TBI	TBI	TBI	TBI	TBI	TBI	60	FALSE
Nov2021	ON TIME	May2022	Apr2022	BEFORE TIME	Mar2022	Mar2022	ON TIME	ON TIME	COMPLETED	80	FALSE

(Fig. 7 Current gate of project)

2. Individual Project Analysis Dashboard



(Fig. 8 Individual Project Analysis Dashboard)

This dashboard is needed for finding individual project status according to gate in detail. Project Dashboard shows individual project's process wise (gate wise) status whether project is delay, on time and work in progress and overall status of project completed or work in progress and on time score, depending upon the project dates the graph of gates pop up and changes according to projects, and if project is delay then how many days delay is also shown in this dashboard. If you change the project from dropdown list the whole data of dashboard changes including graph. The data come here from backend sheet.

The project dropdown list occurred by using data validation, range tool and then for getting dates according to project name we use VLOOKUP function. For GATE status formula use is explained in the R & D dashboard already.

For getting delay in days, we simply subtract two cells but the format of these two cells must be date format then and then only we will get accurate delay in days.

3. IN DETAIL PROJECT TRACKING DASHBOARD

	A	B	C	D	E	F	G	H	I
1	PRODUCT NAME : FMSMS - FORBES MARSHALL SOPT MONITORING SYSTEM								
2	S : STUDY OF FEASIBILITY (Specs sheet, study and design start)							% completio	83
3	Planned Start Date			Target Date	Planned End Date				
4	25/03/2021				30/01/2021				
5	Actual Start Date				Actual End Date				
6	01/12/2020				07/07/2022				
7	Status	DELAY							
9	0	Goals of the Study / Marketing Goals			Yes				
10	1	Market Analysis /Need finding					Site visits pending		
11	2	MRS: Specifications (short version)			Yes				
12	3	Budget for S - Phase			Yes				
13	4	Project Plan for S - Phase			Yes				
14	5	Form Cross functional Project core Team with Project sponsor			Yes				
15									
16		DELAY	YEARS	MONTH	DAYS				
17			1	5	7				
18									
19									
20									
21									
22									

(Fig.9 In detail project tracking dashboard)

This type of sheet and dashboard made for one particular project which gives gatewise task completion and progress of that gate according to task are shown by this shit. According to yes/no of task, progress of that gate is calculated and then if project is delay then how many delays is there is calculated.

4. SUMMARY PROJECTS TRACKING DASHBOARD

Sl. No	Project	STATUS	FINAL PROJECT STATUS	ON TIME SCORE
1	Project 1	ON TIME	WORK IN PROGRESS	20
2	Project 2	NA	WORK IN PROGRESS	0
3	Project 3	DELAY	COMPLETED	60
4	Project 4	ON TIME	COMPLETED	100
5	Project 5	DELAY	WORK IN PROGRESS	40
6	Project 6	DELAY	WORK IN PROGRESS	40
7	Project 7	DELAY	COMPLETED	60
8	Project 8	ON TIME	COMPLETED	60
9	Project 9	ON TIME	COMPLETED	80
10	Project 10	DELAY	COMPLETED	40
11	Project 11	DELAY	COMPLETED	60
12	Project 12	ON TIME	COMPLETED	80
13	Project 13	HOLD	HOLD	20
14	Project 14	ON TIME	COMPLETED	100
15	Project 15	ON TIME	COMPLETED	40
16	Project 16	TBI	TBI	0
17	Project 17	TBI	TBI	20
18	Project 18	DELAY	COMPLETED	20
19	Project 19	ON TIME	COMPLETED	80
20	Project 20	TBI	TBI	0
21	Project 21	TBI	TBI	60
22	Project 22	ON TIME	COMPLETED	80
23	Project 23	HOLD	HOLD	20
24	Project 24	ON TIME	COMPLETED	100
25	Project 25	HOLD	HOLD	0
26	Project 26	ON TIME	COMPLETED	60
27	Project 27	ON TIME	COMPLETED	60
28	Project 28	TBI	TBI	40
29	Project 29	DELAY	COMPLETED	20
30	Project 30	DELAY	COMPLETED	0
31	Project 31	DELAY	COMPLETED	0
32	Project 32	HOLD	HOLD	20
33	Project 33	DELAY	COMPLETED	40
34	Project 34	ON TIME	COMPLETED	60

(Fig. 10 Summary project tracking dashboard)

This Dashboard shows all projects' statuses in one sheet. This is different from summary and dashboard Here we collect together projects status data and it reflects this can be used to find out, from all going projects how many are on time, delayed or, not started. According to status the colour of the cell changes for this conditional formatting used, for delay red colour appears, for on-time yellow colour appears like this.

Conclusion:

The research helped us to find an optimized automated solution in the form of a dashboard. It led to the creation of a dashboard that provided project status and give an analytical report which helped in the decision-making of the project work. The company guide recommended understanding the manual process thoroughly to identify actual days and planned days for projects and also to study the earlier reports. Secondary data, observation, and interviews helped a lot in the creation of the dashboard. During the following, we planned to take the project to next level by moving it to the Power BI platform along with more analytical decision reports such as the number of employees involved in the project and removal of process delay time.

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