MANAGING OVER ALLOCATION OF RESOURCE IN STEEL INDUSTRIES USING PROJECT MANAGEMENT SOFTWARE

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Abstract

The purpose of this paper is to determine if implementing project management software, especially Microsoft Project, would increase effectiveness of organization's project management and reduce project duration. It focuses on famous quote "Good project management cannot guarantee success, but poor management on significant projects always leads to failure."

Keywords: - *Good Project management, Methodology, Microsoft Project, Project Duration, Software.*

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1. INTRODUCTION

The Microsoft Project is an efficient and flexible programme designed to administrate projects and it enables the user to plan effectively, to administrate and to publish the time table of the project and the information. By organizing the list of tasks and by setting the time frame the Project helps quick planning of projects. If resources are assigned to the tasks, the Project keeps the exact record about them and administrates their assigning, controls costs on the resources. Thanks to the programme Project the user can keep the information on project always up-dated on one place, so possible decisions can come out from correct bases. The project can also be used for creating the scenario of the "what if?" type.

Microsoft Project has been around for around two decades now (can you believe that?) and arguably has a pretty large slice of the project management software market share. Thousands upon thousands of project managers have used this powerful tool to quickly get a handle on their projects and keep everyone on the same page. Just like every other software company, Microsoft is constantly looking for ways to improve this software based upon user feedback. It has made great strides in recent years in making MS project easier and more intuitive to use as well as reduce the learning curve that new users would experience when they fired it up for the first time on their machines

2. ABOUT MICROSOSFT PROJECTS

MSP or MSOP is Project Management Software Program. It is developed and sold by Microsoft. MSP is designed to assist a Project Manager in:

- Developing a plan
- Assigning resources to tasks
- Tracking progress
- Managing budget and
- Analyzing workloads

In the year 1987, a small external company had developed the first version of MSP. In 1988, Microsoft acquired this company. This brought the development in – house. In 1990, the finalized application hit the market as part of the company's applications offerings, for Microsoft windows 3.0.

Table 1: Shows the version release until MSP 2010

Sr. No.	Year	Version
1	1992	V3
2	1993	V4
3	1995	4.1a
4	1998	9.0
5	2000	10.0
6	2002	11.0
7	2003	12.0
8	2007	13.0
9	2010	14.0

With the help of this application, the users are able to manage their projects very easily. This project management software offers the better experience with its visual enhancements and updates to project managers. It helps complete the projects on time and without any hassles and effects on the overall productivity of the team and organization. The project managers are able to plan, manage and deliver their projects without wasting much time.

Projects managers rely on Microsoft Office Project Professional 2010 to plan and manage their projects. The project map of MSP 2010 is as follows:

- Initiate a project
- Plan and build a schedule
- Track and monitor your project
- Close your project

3. PROPOSED WORK

"Project 999" was received from overseas customer for a stitcher die set. The time frame was 24 weeks. It was scheduled to be dispatched on 1st of July. But now on 17th July it is declared that it is ready for shipment. The Project was delayed by 17 days. The aim here is to reduce Project Duration.

Fig 1 Sticher Die

4. ACTIVIVTIES WITH DURATION & PREDECESSORS

Table 2: Shows Activity & Duration with Predecessor

ID	Activity	Duration	Predecessor
1	Order Recieved	1	
2	Request for quotation to vendor	2	1
3	Recipt of quotation from vendor	2	2
4	Techno/commercial assessment of quotation	4	3
5	Clarification on techno/commercial issue	3	4
6	Clarification Recieved	1	5
7	Technically accepted order recieved	2	6
8	Commercial negotiation with vendors	4	7
9	Order placed	1	8
10	Die manufacturing	74	9
11	Manufacturing top and bottom plate		
12	Machining	10	8
13	Manufacturing guards for pillars		
14	Fabrication	10	12SS
15	Machining	8	8,14
16	Assembly	3	9,11,13,15
17	Testing	1	16
18	Painting	1	17
19	Packing	1	17,18
20	Ready for dispatch	1	19
21	Exiros appointment	2	20
22	Export documentation	3	21
23	Order dispatched	1	22

5. RESOURCES WITH THEIR STANDARD RATES

Table 3: Resources & Their Standard Rates

ID	Resource Name	Type	Material Label	Initials	Group	Peak	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar
1	Project Manager	Work		P		1	1	$10,000.00/day	$0.00/hr	$0.00	Prorated	8*6
2	Die Vendor	Work		D		1	1	$12,000.00/day	$0.00/hr	$0.00	Prorated	8*6
3	Purchase Engineer	Work		P		1	1	$2,000.00/day	$0.00/hr	$0.00	Prorated	8*6
4	Design Engineer	Work		D		1	1	$3,000.00/day	$0.00/hr	$0.00	Prorated	8*6
5	Draftsman	Work		D		1	1	$1,500.00/day	$0.00/hr	$0.00	Prorated	8*6
6	Assebly Shop	Work		A		2	1	$1,500.00/day	$0.00/hr	$0.00	Prorated	8*6
7	Fitter	Work		F		3	1	$1,500.00/day	$0.00/hr	$0.00	Prorated	8*6
8	Helper	Work		H		2	1	$1,000.00/day	$0.00/hr	$0.00	Prorated	8*6
9	Quality Inspector	Work		Q		2	1	$2,000.00/day	$0.00/hr	$0.00	Prorated	8*6
10	Painter	Work		P		1	1	$1,500.00/day	$0.00/hr	$0.00	Prorated	8*6
11	Labour	Work		L		4	2	$500.00/day	$0.00/hr	$0.00	Prorated	8*6
12	Gas Cutter	Material	shift	G		0 shift/day		$1,000.00		$0.00	Prorated	
13	Drilling Machine	Material	shift	D		0 shift/day		$3,000.00		$0.00	Prorated	
14	Milling Machine	Material	shift	M		0 shift/day		$5,000.00		$0.00	Prorated	
15	Boring Machine	Material	shift	B		0 shift/day		$3,000.00		$0.00	Prorated	
16	Lathe Machine	Material	shift	L		0 shift/day		$1,000.00		$0.00	Prorated	
17	Steel Plates	Material	kg	S		0 kg/day		$40.00		$0.00	Prorated	
18	Metal Strips	Material	4	M		0 4/day		$40.00		$0.00	Prorated	
19	Crane	Material	shift	C		0 shift/day		$500.00		$0.00	Prorated	
20	sales manager	Work		s		1	1	$1,000.00/day	$0.00/hr	$0.00	Prorated	8*6

6. GANTT CHART VIEW

After entering all the above necessary data in software set the calendar of project. The calendar in this project is of 8 working hours and 6 working days. To see the Gantt Chart view go to Gantt Chart options.

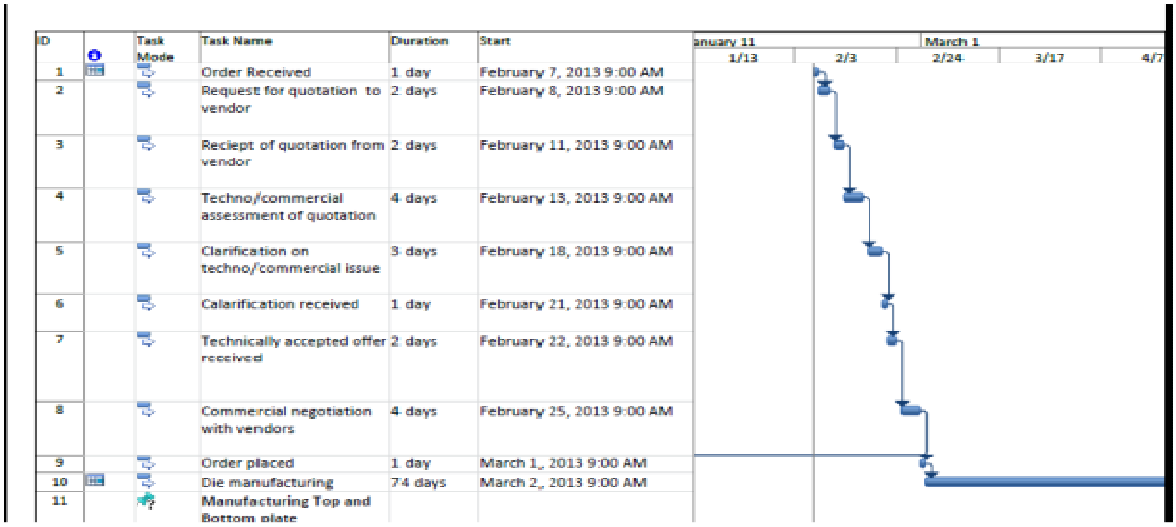
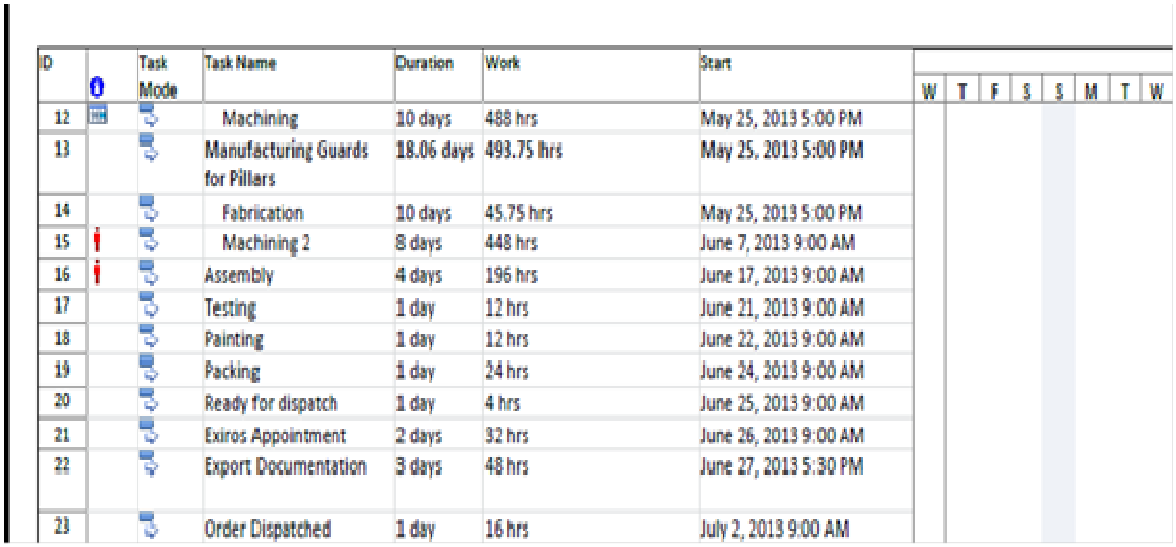


Fig.2: Gantt chart

7. OVERALLOCATION OF RESOURCES

The indication of red colored symbol shows work overallocation.



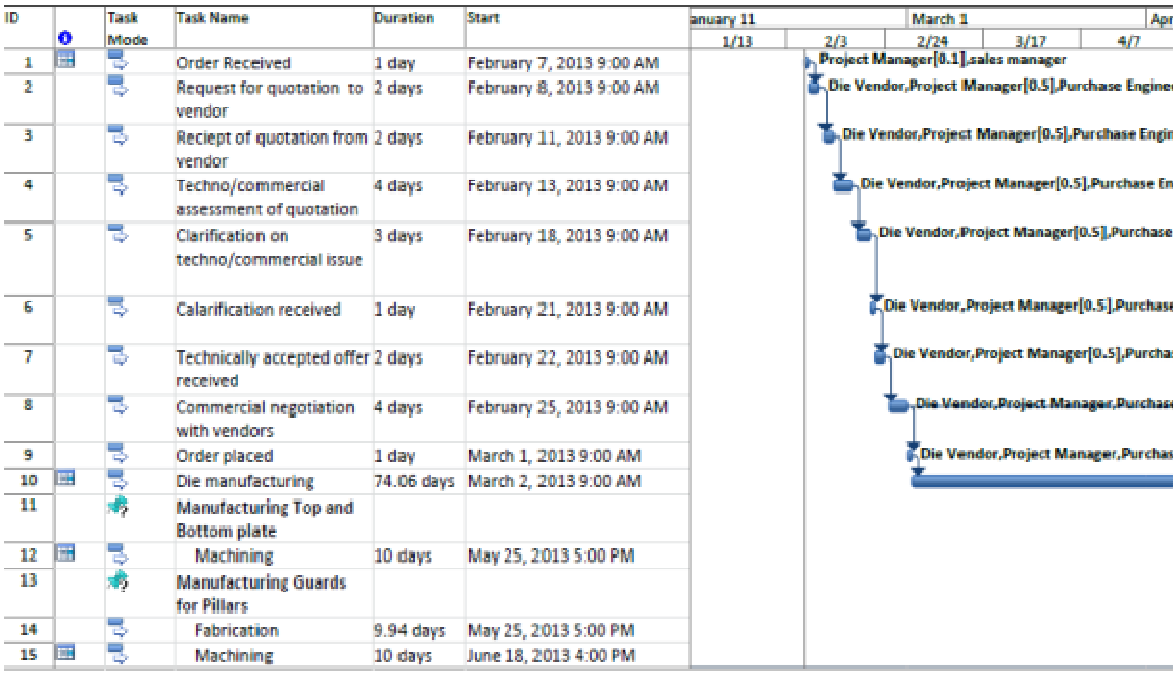
ID	Task Mode	Task Name	Duration	Work	Start
12		Machining	10 days	488 hrs	May 25, 2013 5:00 PM
13		Manufacturing Guards for Pillars	18.06 days	493.75 hrs	May 25, 2013 5:00 PM
14		Fabrication	10 days	45.75 hrs	May 25, 2013 5:00 PM
15		Machining 2	8 days	448 hrs	June 7, 2013 9:00 AM
16		Assembly	4 days	196 hrs	June 17, 2013 9:00 AM
17		Testing	1 day	12 hrs	June 21, 2013 9:00 AM
18		Painting	1 day	12 hrs	June 22, 2013 9:00 AM
19		Packing	1 day	24 hrs	June 24, 2013 9:00 AM
20		Ready for dispatch	1 day	4 hrs	June 25, 2013 9:00 AM
21		Exiros Appointment	2 days	32 hrs	June 26, 2013 9:00 AM
22		Export Documentation	3 days	48 hrs	June 27, 2013 5:30 PM
23		Order Dispatched	1 day	16 hrs	July 2, 2013 9:00 AM

W T F S S M T W

Fig 3: Resource Overallocation

8. OVERALLOCATION REMOVED

Overallocation was observed in case of the Fitter. Thus it was removed by assigning overtime to the fitter. The fitter was allocated three extra hours of overtime. That is he has to work for 3 hours (5:45 PM to 8:45 PM) more for 6 days. Thus total 24 hours of overtime weekly.



ID	Task Mode	Task Name	Duration	Start
1		Order Received	1 day	February 7, 2013 9:00 AM
2		Request for quotation to vendor	2 days	February 8, 2013 9:00 AM
3		Reciept of quotation from vendor	2 days	February 11, 2013 9:00 AM
4		Techno/commercial assessment of quotation	4 days	February 13, 2013 9:00 AM
5		Clarification on techno/commercial issue	3 days	February 18, 2013 9:00 AM
6		Calarification received	1 day	February 21, 2013 9:00 AM
7		Technically accepted offer received	2 days	February 22, 2013 9:00 AM
8		Commercial negotiation with vendors	4 days	February 25, 2013 9:00 AM
9		Order placed	1 day	March 1, 2013 9:00 AM
10		Die manufacturing	74.06 days	March 2, 2013 9:00 AM
11		Manufacturing Top and Bottom plate		
12		Machining	10 days	May 25, 2013 5:00 PM
13		Manufacturing Guards for Pillars		
14		Fabrication	9.94 days	May 25, 2013 5:00 PM
15		Machining	10 days	June 18, 2013 4:00 PM

anuary 11 | March 1 | Apr
1/13 | 2/3 | 2/24 | 3/17 | 4/7

Project Manager[0.1],sales manager
Die Vendor,Project Manager[0.5],Purchase Engine
Die Vendor,Project Manager[0.5],Purchase Engi
Die Vendor,Project Manager[0.5],Purchase En
Die Vendor,Project Manager[0.5],Purchase
Die Vendor,Project Manager[0.5],Purchas
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Die Vendor,Project Manager,Purchas
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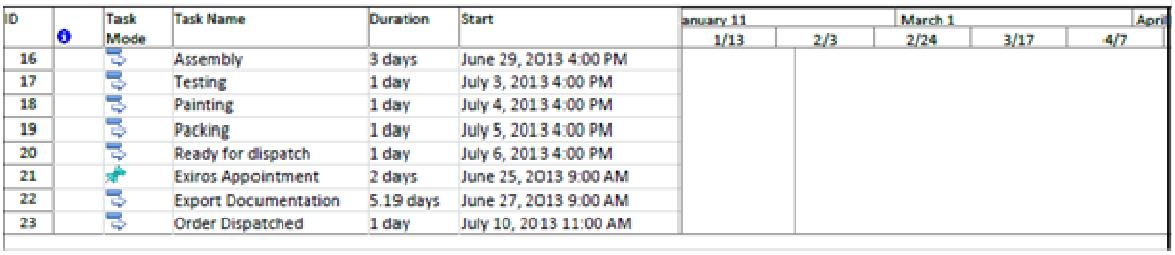
Fig. 4: Overallocation Resolved in Machining



ID	Task Mode	Task Name	Duration	Start
16		Assembly	3 days	June 29, 2013 4:00 PM
17		Testing	1 day	July 3, 2013 4:00 PM
18		Painting	1 day	July 4, 2013 4:00 PM
19		Packing	1 day	July 5, 2013 4:00 PM
20		Ready for dispatch	1 day	July 6, 2013 4:00 PM
21		Exiros Appointment	2 days	June 25, 2013 9:00 AM
22		Export Documentation	5.19 days	June 27, 2013 9:00 AM
23		Order Dispatched	1 day	July 10, 2013 11:00 AM

Fig.5: Overallocation Resolved in Assembly

After applying 24 hours of overtime weekly to fitter we can see that red coloured indication of overallocation disappeared. And as a result of that the project duration reduced by 7 days.

CONCLUSIONS

It is clear from the software usage that the project duration is reduced by 7 days. As we know project duration is directly proportional to cost incurred. Thus the software can also be used for costing related to project and minimizing the cost to get optimal results.

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