

17) Project direction/supervision – Monitoring and control

General remarks

The major role of a PM beyond the project planning phase consists in **directing project execution**, ie **supervising the implementation of the project plan**.

Project direction involves ensuring that the **project** is **executed** with the highest possible degree of **compliance with its “baseline” scope, schedule and budget**, as well as with the **quality requirements** for its deliverables.

Project supervision involves **monitoring and controlling all of the tasks** performed by the project team and contractors.

According to the scale of the project and the type of project organization, the PM may be able to **delegate some of the supervision work to subproject managers** or he may have to supervise all of the project tasks himself.

However that may be, the PM’s role in **directing the project is comparable to conducting an orchestra**, ensuring that all players execute the score in harmony.

Monitoring and controlling the project require **processes for gathering information**, as well as **tracking and reviewing progress** in each of the project’s areas. These processes should enable the PM to **identify deviations from the plan** as well as **problems, issues and risks**, which should lead the PM, whenever necessary, to take **corrective action** without delay.

Note that “Murphy’s law”, as applied to project management, generally proves to be true:

➤ “Anything that can go wrong will go wrong.”

➤ For **more information on this subject**, see en.wikipedia.org/wiki/Murphy%27s_law.

The PM must therefore permanently **keep a lookout for problems** in all areas of the project.

The **areas to be monitored and controlled** are the same as those addressed in the project management plan, as summarized in the following “expanded triangle” diagram.



Note that a project plan is rarely perfect, so **deviation from the plan is normal**. Deviation may actually be necessary. It is sometimes even beneficial.

Major changes with respect to the plan, in particular concerning scope, schedule and budget, not only need to be documented (in a “**change log**”), but also usually need to be formally **authorized by the project owner and/or sponsor**.

Requirements may need to be changed as a result of the design process or due to technical difficulties encountered by the developers, or for any other valid reason.

Flexibility as regards changes to the requirements is desirable, but requirements must be “frozen” at some point in order to **avoid** the disadvantages of a “**moving target**” or of “**scope creep**” (ie **uncontrolled expansion** of a project’s scope), unless circumstances allow the PM to apply “agile” principles all the way (as explained in chapter 12).

The **work breakdown structure** (WBS) should be used by the PM as a reference document that provides an overview of the project’s activities/tasks (grouped into work packages). It may also be used as a framework for progress reporting purposes. The WBS may need to be amended as work progresses to take into account changes that may be necessary in the overall organization of the project.

Tasks (or activities) may be proceeding less smoothly than expected. Difficulties need to be analyzed and resolved. Solutions need to be devised in order to remove or by-pass obstacles. The PM may also establish that certain tasks that had not been planned need to be added to a work package.

There may be problems with the **sequencing of tasks**. For example, new dependencies between tasks may appear, which may have a direct negative impact on “successor” tasks if adequate action is not taken early enough. And any new tasks that are brought into the picture need to be fitted into the project’s sequenced list of tasks at appropriate places in relation to other tasks.

Resources assigned to a given task may turn out to be insufficient in order to complete it on schedule while maintaining the required level of quality, in which case additional resources must be allocated to the task or its duration must be extended.

On the other hand, it may become apparent at some stage that completing a task requires fewer resources than estimated. In that case, some of the resources may be released or reassigned earlier than planned.

As mentioned above, it may be necessary to add tasks to a work package, in which case adequate resources need to be assigned to those new tasks.

The **duration** of certain tasks may be longer or shorter than planned, which may have a negative or positive impact on the overall **schedule**.

The **cost** of certain tasks may be higher than estimated, due to their extended duration or the actual cost of resources or the addition of resources.

On the other hand, there may be good surprises! A lower-than-estimated actual cost of certain tasks may counterbalance a cost overrun of others, thus allowing the project to remain within **budget**.

Here is an example of a project for which a major change in scope was decided in order to make optimum use of the remainder of the budget, at a time when one third of it had already been spent.

Hachette Multimedia participated, from June 2002 to November 2004, in a large European project (“CELEBRATE”) subsidized by the European Commission, which consisted in designing and producing a hundred or so “Learning Objects (LOs)” for schools, in English and in French. The LOs were fairly sophisticated animations, developed in Flash, illustrating principles and facts in physics and natural sciences. Each LO required a script, specific graphic design work and software development. The cost of those custom-made LOs was relatively high and it soon became obvious that the objective in terms of number of LOs to be delivered could not be achieved. So, in agreement with the overall project coordinator at the European level, I (the PM at Hachette) decided to spend the remaining two thirds of the development budget on the creation of a series of “LO templates” that would allow editors to produce a large number of LOs on a wide variety of subjects, without any further need for graphic designers or developers.

In the area of **Human Resources**, the PM may encounter problems implementing the **hiring plan**, for example a person who was supposed to join the team at a certain date may have decided to accept another job. In that case, **emergency action** needs to be taken in order to find a suitable replacement.

There may also be **conflicts** between members of the team that need **to be resolved**.

Solutions to problems encountered by any given team member should be **communicated** to other team members who are liable to face the same problem. In that respect, a **knowledge base or "FAQ"** available on the project's intranet site is usually very helpful.

As regards **procurement**, contracts and purchase orders must be signed and executed according to the plan. Any problem that may arise in that area must be solved. For example, a given supplier may not be able to provide goods or services as expected, or may demand a higher compensation than estimated or initially agreed upon.

Risks identified during the planning phase of the project may materialize and new risks may appear. They should be dealt with appropriately, ie their **impact** needs to be **evaluated** and **action** should be **taken** in order to **mitigate or eliminate** them.

The PM should closely monitor and control the **quality of project execution**, as well as the **quality of its deliverables**, in particular the **resulting product** in its successive stages of development.

In the area of **communications**, the PM must ensure that **adequate information** is provided in a timely fashion **to those who "need to know"**, including subproject managers, if any, team members, contractors, management, the project owner and sponsor, Marketing & Sales, etc.

In particular, the PM must make sure that **team members** have **easy access to** all of the **information** they need to do their jobs.

The PM, who is ultimately responsible for the outcome of the project, must also make sure that all of the **information needed to monitor and control the project** is available to him when required. No essential information should be overlooked (nor hidden!), in particular concerning **serious issues** that have not been resolved or **major risks** that may have materialized.

For that purpose, the PM must make sure that subproject managers, if any, or team members themselves provide information on a regular basis and **escalate important issues** as soon as they appear.

Project supervision requires above all an **excellent organization**, with **well-defined hierarchical or functional relationships**, and a **well-oiled mechanism for information flow**, hence the **paramount importance of good communications**.

Meetings

The PM should review the progress of the project on the occasion of **regular one-to-one or group meetings** with subproject managers, if any, or directly with selected team members.

Group meetings provide each participant with the opportunity to report on the progress of the tasks he/she is in charge of, to point out problems, to raise issues, and to gain awareness of the situation of other tasks and of the project as a whole. Problems and proposed solutions may be discussed by the group. A group meeting may feature a **"brainstorming session"** to work out **solutions to complex problems**.

After every meeting of importance, the PM should publish a **report**, highlighting **decisions** and **action items**.

For each action item, the PM should specify a **level of priority**, the **deadline** by which it has to be completed and the name of the **person** it has been **assigned** to.

Action items determined at a meeting should be **reviewed** during the next meeting (or earlier if necessary), in order to check that execution has at least started, that it is moving in the right direction and that any visible results meet expectations.

Although most meetings are absolutely necessary, the PM should make sure that they do not consume an excessive amount of time. The PM should **carefully prepare each meeting**, set an **agenda** and a **schedule**, and take care to keep **discussions within scope** (unless there is a good reason to expand the scope...).

- Meetings should not be “events where minutes are taken and hours are lost”!

It is also desirable to hold meetings from time to time with the whole of the **project team**, to give all team members an overview of the project’s status, and to let each person express his/her thoughts and possibly discuss them with the group.

Project team meetings may be held for example once a month. The PM should make a short presentation of the **overall project’s progress**. Subproject managers, if any, should then each make a presentation concerning their specific part of the project. If there is more to show than just slides, for example a version of the product being developed, then a **demonstration** should be featured on the meeting agenda. The meeting schedule should provide enough time for a **questions & answers** session.

Project team meetings are useful not only for delivering information to team members, but also for gathering their **feedback and suggestions**. Those meetings also provide the PM with additional opportunities to **mobilize and motivate** the team.

For some projects, or during certain phases of a project, it may be necessary to hold meetings with subproject managers, if any, or with the whole project team on a very frequent basis, for example daily. Such meetings should be kept **short and focused**. An effective form of meeting that satisfies those conditions is the so-called “**standup meeting**”: participants get together in the manager’s office or in a meeting room or in the team’s work area, and whatever is presented and/or discussed is done with everyone standing, not sitting.

Meetings may obviously also be called by the PM on an **ad hoc** basis, as the need arises.

Regular meetings with **major contractors** (such as a software developer) are also necessary. The PM may delegate the appropriate subproject manager(s) to such meetings, but some of them may require the PM’s presence, for example meetings where requirements or functional design specifications are discussed, or meetings where a “milestone” deliverable, eg a version of the product under development, is reviewed. The above-mentioned **general guidelines for meetings** also apply to meetings with contractors, in particular: **careful preparation, predetermined agenda and schedule, keeping discussions within scope**. Each meeting should be followed by a **meeting report with detailed action items**.

Finally, the PM is usually required to report to his **management** (and/or project owner/sponsor) on the **progress of the project** on a regular basis, for example once a month. **Reporting** may be done on the occasion of more or less formal meetings where the PM and subproject managers, if any, each deliver a presentation. Whenever possible, management should be shown the latest version of the product under development.

The PM must prepare management-level project review meetings with great care in order to be in a position to provide **satisfactory answers** to questions from his **management** and his **financial controller**. Participants generally expect to receive handouts, including a summary of where the project stands with respect to work package completion, schedule and budget, which can be provided as a set of performance indicators (as described further on in this chapter).

Management By Walking Around (MBWA)

MBWA is a **management technique** that is very effective **for gathering information**, for “gauging the temperature”, as well as for motivating staff, in a relatively informal fashion. It consists for a manager in spending time, as frequently as he feels right or necessary, with people in his organization, at their place of work as opposed to meeting with them in his own office.

A PM should **practice MBWA on a regular basis**. He should pay visits not only to subproject managers but also to all of the team members (though maybe not all at once...). The PM should however be careful to **avoid disrupting work** in progress.

A **direct contact with team members** enables the PM to **ask questions**, to **keep abreast of what is going on** in the project team, to **feel the atmosphere**, to **detect difficulties**, situations of **conflict, dissatisfaction**, etc.

MBWA also provides the PM an opportunity to **give information** to team members, to **answer their questions**, to **motivate** them (**encourage** them and maybe even **congratulate** them for a “job well done!”).

The PM should however not bypass subproject managers when it comes to managing their respective teams on a day-to-day basis. He should also avoid delivering information or instructions that subproject managers are not aware of, or that might contradict information or instructions already given.

MBWA is generally appreciated by team members if it conforms to **rules of good practice** and visibly contributes to the smooth running of the project, as well as to a good atmosphere in the project team.

Here is a link to a **short article on the subject**: www.futurecents.com/mainmbwa.htm.

Performance indicators

Information gathered in the process of monitoring the progress of activities in the various project areas must be **analyzed, sorted and consolidated**. Important information should be transcribed into written form, in particular meeting reports. It may be used to determine immediate action items or stored for future reference. It may be **summarized** for progress reports and used to update **performance indicators**, which may sometimes be limited to a set of **key performance indicators (“KPIs”)**.

Performance indicators should be designed in order to provide **a summary view of the status (“health”) of a project** and a **measurement of its progress in each of its key areas**, in **quantitative** as well as **qualitative** terms.

The format of performance indicators used by **subproject** managers for their respective work packages should be as **compatible** as possible with the format of indicators for the **overall project**, so as to facilitate **consolidation** by the PM.

Here is a **non-exhaustive list of KPIs** that should be kept up-to-date throughout the project’s execution phase:

- degree of completion of work packages and tasks,
- status of deliverables with respect to target milestones,
- status of the project with respect to its baseline schedule,
- evolution of cost (spending) with respect to the budget,
- assessment of remaining risks.

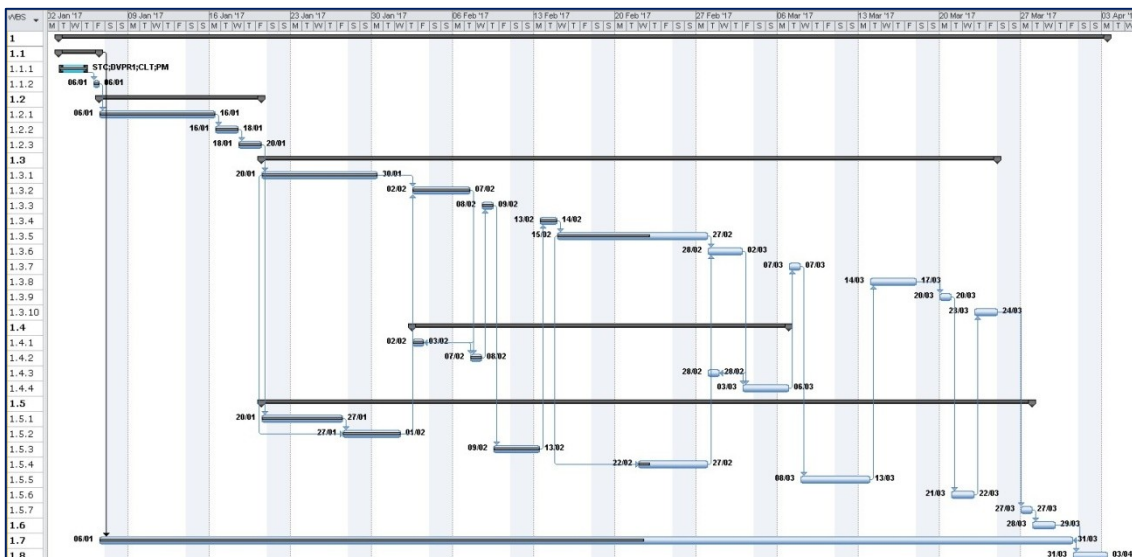
Quantitative **indicators in tabular form should also be represented graphically**, whenever relevant and possible, in order to increase their legibility and to make differences (eg "achieved vs planned") appear more evidently.

A few **examples of performance indicators** are given below. Some were created with Microsoft Project, others with Microsoft Excel (which in many cases is easier to use than more specialized software to create and update performance indicators).

Here is a tabular view (produced with MS Project) of the progress of the contractor's work on project EXONE at a given date, showing for each task the amount of work, expressed in person-days, initially estimated ("Baseline Work" column), re-evaluated ("Work" column), actually done ("Actual Work" column) and remaining to be done ("Remaining Work" column); the rightmost column ("% Work Complete") shows the percentage of completion of each task and work package, and of the project as a whole.

WBS	Task Name	Baseline Work	Work	Actual Work	Remaining Work	% Work Complete
1	PROJECT EXONE	177 days	169 days	105 days	64 days	62%
2	1.1 REQUIREMENTS	14 days	11 days	11 days	0 days	100%
3	1.1.1 Review and complete requirements & plan with client	12 days	10 days	10 days	0 days	100%
4	1.1.2 Final discussion and agreement with client on req'ts & plan	2 days	1 day	1 day	0 days	100%
5	1.2 DESIGN	26 days	24 days	24 days	0 days	100%
6	1.2.1 Write design specifications	14 days	12 days	12 days	0 days	100%
7	1.2.2 Check design with respect to requirements	5 days	5 days	5 days	0 days	100%
8	1.2.3 Meet with client to discuss & agree on design	7 days	7 days	7 days	0 days	100%
9	1.3 IMPLEMENTATION	61 days	60 days	34 days	26 days	57%
10	1.3.1 Coding - Alpha version	14 days	12 days	12 days	0 days	100%
11	1.3.2 Debugging phase 1 (following internal Alpha testing)	6 days	6 days	6 days	0 days	100%
12	1.3.3 Production of Alpha version and delivery to client	1 day	1 day	1 day	0 days	100%
13	1.3.4 Debugging phase 2 (following client Alpha testing)	4 days	3 days	3 days	0 days	100%
14	1.3.5 Coding - Beta version	16 days	18 days	12 days	6 days	67%
15	1.3.6 Debugging phase 3 (following internal Beta testing)	6 days	6 days	0 days	6 days	0%
16	1.3.7 Production of Beta version and delivery to client	1 day	1 day	0 days	1 day	0%
17	1.3.8 Debugging phase 4 (following client Beta testing)	8 days	8 days	0 days	8 days	0%
18	1.3.9 Production of Final version and delivery to client	1 day	1 day	0 days	1 day	0%
19	1.3.10 Debugging phase 5 & delivery (following client Final testing)	4 days	4 days	0 days	4 days	0%
20	1.4 INTEGRATION	5 days	5 days	2 days	3 days	40%
21	1.4.1 Delivery of content subset by client	1 day	1 day	1 day	0 days	100%
22	1.4.2 Integration of content subset	1 day	1 day	1 day	0 days	100%
23	1.4.3 Delivery of complementary content by client	1 day	1 day	0 days	1 day	0%
24	1.4.4 Integration of complementary content	2 days	2 days	0 days	2 days	0%
25	1.5 TESTING & ACCEPTANCE	32.5 days	30.5 days	17.5 days	13 days	57%
26	1.5.1 Prepare test plan and test cases	7.5 days	7.5 days	7.5 days	0 days	100%
27	1.5.2 Internal testing - Alpha version	8 days	6 days	6 days	0 days	100%
28	1.5.3 Alpha testing by client	2 days	2 days	2 days	0 days	100%
29	1.5.4 Internal testing - Beta version	8 days	8 days	2 days	6 days	25%
30	1.5.5 Beta testing by client	4 days	4 days	0 days	4 days	0%
31	1.5.6 Final testing by client	2 days	2 days	0 days	2 days	0%
32	1.5.7 Acceptance by client	1 day	1 day	0 days	1 day	0%
33	1.6 DEPLOYMENT AT CLIENT'S SITE	4 days	4 days	0 days	4 days	0%
34	1.7 PROJECT MANAGEMENT (After Req'ts WP & before Closure)	30 days	30 days	16.5 days	13.5 days	55%
35	1.8 PROJECT CLOSURE	4.5 days	4.5 days	0 days	4.5 days	0%

Here is the corresponding graphical view (the lighter-coloured bars or parts of bars represent work remaining to be done).

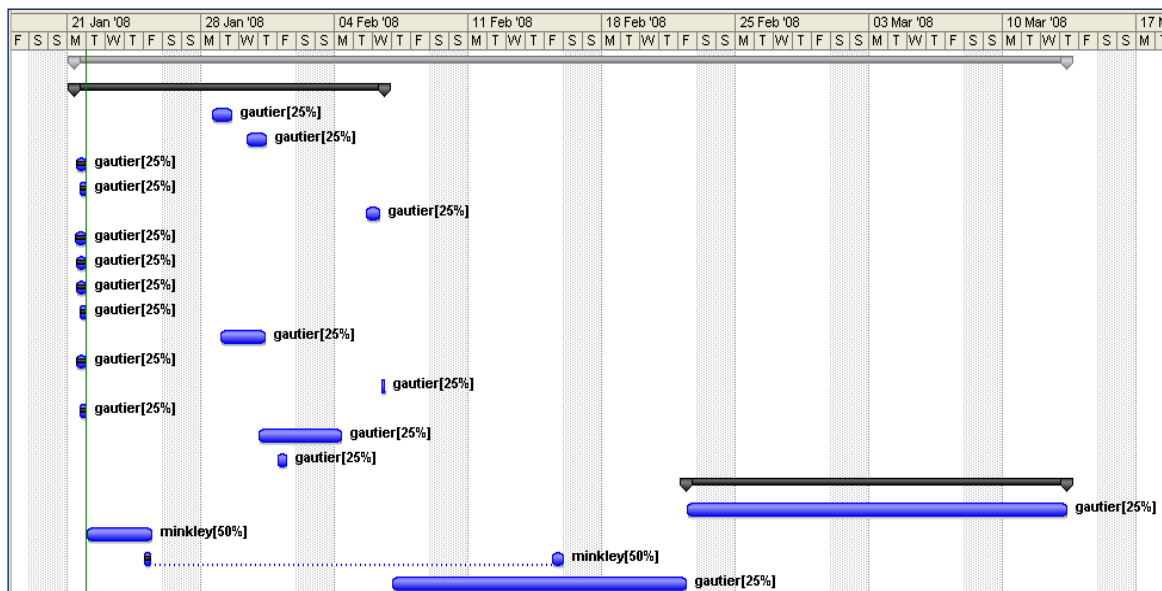


Various more or less complete views of work progress may be used. The following (real-life) example concerns the final stage of a development effort (for an online English dictionary).

Microsoft Project was used to track the amount of work remaining for bug fixing, testing and software release production, as well as to determine a schedule given the availability of the two persons involved (in particular, the software development engineer was available only 25% of his time for this project).

Task Name	MantID	Remaining Work	Work	Duration	Start	Finish	Resource Names
0 CLD3 School	0	73 hrs	81 hrs	33,5 days?	18/01/08	13/03/08	
1 Issues	0	14 hrs	21 hrs	11 days?	21/01/08	06/02/08	
2 QF,SW: in result list there is no guidewords for idioms and the c	13196	2 hrs	2 hrs	1 day?	28/01/08	29/01/08	gautier[25%]
3 [CSD] AS, in the Result list guidewords for the following idioms s	13205	0 hrs	0 hrs	0 days?	21/01/08	21/01/08	gautier[25%]
4 Pronunciation practice window: please add stress marks for cc	16612	2 hrs	2 hrs	1 day?	30/01/08	31/01/08	gautier[25%]
5 Quickfind 1.1 installation	16640	0 hrs	1 hr	0,5 days?	21/01/08	21/01/08	gautier[25%]
6 Style of Word partners boxes	16643	0 hrs	0,5 hrs	0,25 days?	21/01/08	21/01/08	gautier[25%]
7 Pronunciation practice window: when the window in the default	16645	0,5 hrs	0,5 hrs	0,25 days?	05/02/08	06/02/08	gautier[25%]
8 Options popup: when the Font Size option is selected, it should	16646	0 hrs	1,5 hrs	0,75 days?	21/01/08	21/01/08	gautier[25%]
9 the copyright symbol in the footer on printout is not dispalyed co	16648	0 hrs	1 hr	0,5 days?	21/01/08	21/01/08	gautier[25%]
10 Superwrite window: please make the following css changes (as	16649	0 hrs	1 hr	0,5 days?	21/01/08	21/01/08	gautier[25%]
11 Exercises window, Grammar / vocabulary tab - please move the	16656	0 hrs	0,5 hrs	0,25 days?	21/01/08	21/01/08	gautier[25%]
12 Picture exercises: the empty page is printed out when you use	16660	4 hrs	4 hrs	2 days?	29/01/08	31/01/08	gautier[25%]
13 Picture exercises - sometimes you can print out only the label lis	16662	0 hrs	0 hrs	0 days?	30/01/08	30/01/08	gautier[25%]
14 Pictures popup, the list of pictures - sometimes the yellow highli	16664	0 hrs	1 hr	0,5 days?	21/01/08	21/01/08	gautier[25%]
15 Elements tagged <sb> should be displayed in subscript	16665	0 hrs	0 hrs	0 days?	21/01/08	21/01/08	gautier[25%]
16 when I run the CSD after a Christmas break, I received the upd	16802	0,5 hrs	0,5 hrs	0,25 days?	06/02/08	06/02/08	gautier[25%]
17 Please add "ReadMePc.rtf" to the root directory of the CD-ROM	16909	0 hrs	0,5 hrs	0,25 days?	21/01/08	21/01/08	gautier[25%]
18 AS: pasting word into searching box by using right click menu gi	11123	4 hrs	4 hrs	2 days?	31/01/08	04/02/08	gautier[25%]
19 Pb. with spellchecker	17095	1 hr	1 hr	0,5 days?	01/02/08	01/02/08	gautier[25%]
20 Mac Version	0	24 hrs	24 hrs	12 days?	22/02/08	13/03/08	
21 Mac version of the dictionary	16908	24 hrs	24 hrs	12 days?	22/02/08	13/03/08	gautier[25%]
22 Won't fix	0	0 hrs	0 hrs	2 days?	18/01/08	23/01/08	
23 [Closed] Particular case of ineffective click in results list	16408	0 hrs	0 hrs	1 day?	18/01/08	21/01/08	
24 [CUP] Collocation panel for 'expression' - add spaces in 1st and	13533	0 hrs	0 hrs	1 day?	22/01/08	23/01/08	
25 Testing	0	12 hrs	12 hrs	1,5 days?	22/01/08	23/01/08	minkley
26 Management	0	3 hrs	4 hrs	1 day?	25/01/08	15/02/08	minkley[50%]
27 Release	0	20 hrs	20 hrs	10 days?	07/02/08	22/02/08	gautier[25%]

The following Gantt chart corresponds to the previous tabular view.



The next (real-life) example shows part of a "time sheet" that was used to record work (in hours per day) performed by the various persons involved in the previously-mentioned "CELEBRATE" project over a certain period, as well as the total number of hours spent by each person, firstly during the current period, secondly during the most recent six-month period, and thirdly since the beginning of the project.

It also provides a comparison between total "consumption" and budget (in hours), broken down into categories of personnel.

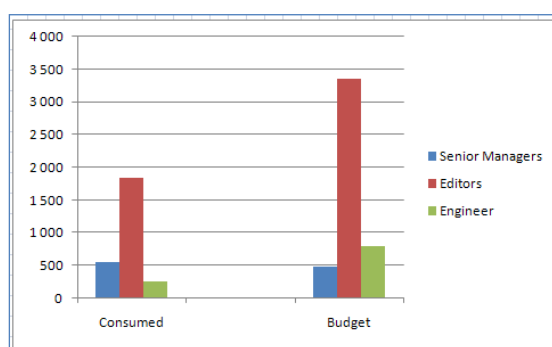
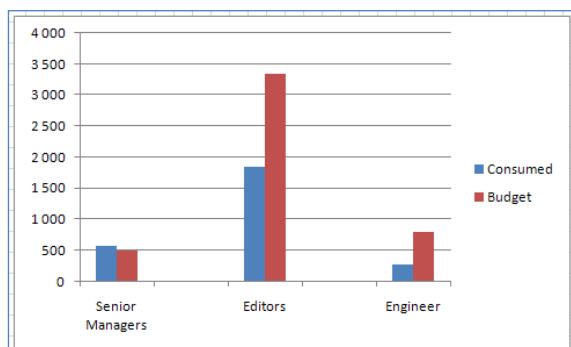
This level of detail was necessary for the calculation of costs to be reported to the European Commission, which subsidized the project.

HM: hours spent on CELEBRATE project																																															
weeks	3-7/3			10-14/3			17-21/3			24-28/3			31/3-4/4			7-11/4			14-18/4			21-25/4			28/4-2/5			5-9/5			12-16/5			19-23/5			26-30/5										
days	m	t	w	t	f	m	t	w	t	f	m	t	w	t	f	m	t	w	t	f	m	t	w	t	f	m	t	w	t	f	m	t	w	t	f												
NMY	4	6	4			3	2			2				1	9	4	2	2	2	2	1	1	2	3	2			4	4	8	8	5	8	4	8	4	4	9	2	2	2	2	2	2			
JBC	1	1	3	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
EJL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
CKS			5	5			5	5			5	5			5	5			5	5			5	5			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
LET	6	6	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
FBE					8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
ABT																																															
MLR																																															
AJY	4	4	4	4	4	4	3	2	4	4	2	4	4	4	4	2	4	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

TEAM	3/3-30/5/2003	1/12/2002-30/5/2003	1/6/2002-30/5/2003
Senior Mngr 1 NMY	132	202	326
Senior Mngr 2 JBC	63	137	229
Editor 1 EJL	196	358	590
Editor 2 CKS	79	174	439
Editor 3 LET	150	390	623
Editor 4 ABT	28	28	28
Editor 5 MLR	18	20	20
Editor 6 FBE	140	140	140
Engineer AJY	214	267	267
TOTAL hours:	1,020	1,716	2,662
--> person-months:	5.80	9.75	15.13

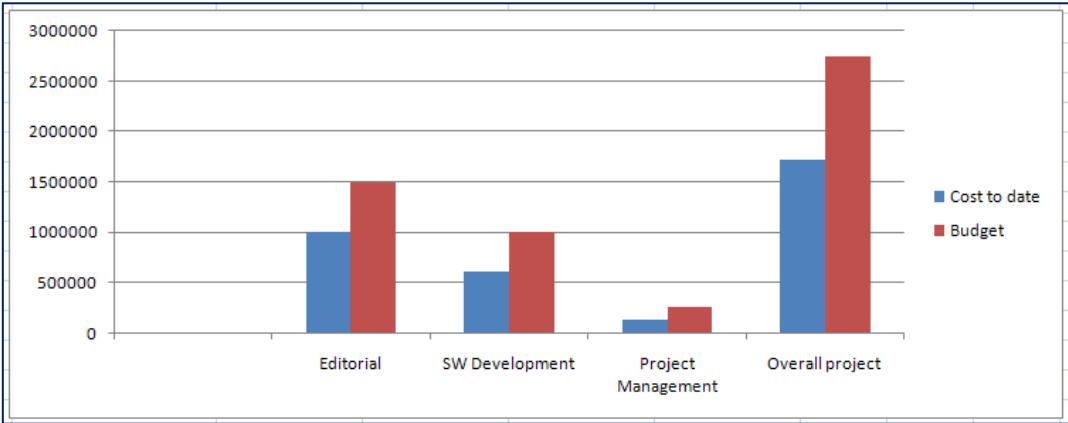
TEAM	CONSUMED	BUDGET	% Consumed	Nb. of hrs left
Senior Managers	555	480	116%	-75
Editors	1,840	3,352	55%	1,512
Engineer	267	792	34%	525
GRAND TOTAL	2,662	4,624	58%	1,962

Here are two graphical representations of the numbers in the third table appearing in the previous illustration.



The following example provides tabular and graphical comparisons between “cost to date” and budget for a hypothetical project with three work packages. It also indicates the degree of completion of each WP, and a rough evaluation of the risk of cost overrun.

Work packages	Cost to date	Budget	Cost to date % Budget	% complete	Risk of cost overrun		
					Low	Medium	High
Editorial	1,000,000	1,500,000	67%	50%			High
SW Development	600,000	1,000,000	60%	55%		High	
Project Management	125,000	250,000	50%	45%	High		
Overall project	1,725,000	2,750,000	63%	50%		High	



The final example is a performance indicator relating to the progress at a given date (“Current date” = the middle of Month 2) of another hypothetical project with respect to its baseline schedule. The first task should have been 75% complete by that particular date but it is only 60% complete, so its duration has been extended by two weeks in the revised schedule, which has a negative impact of the same order on “successor” tasks.

Activities	Schedule	Progress	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Editorial 1	Baseline schedule		75% complete					
	Current status	60% complete	60% complete					
	Revised schedule	extended by 2 weeks	60% complete	60% complete	20% complete			
Editorial 2	Baseline schedule				75% complete			
	Current status	not yet started						
	Revised schedule	delayed by 2 weeks			75% complete	20% complete		
SW design	Baseline schedule		100% complete					
	Current status	complete	100% complete					
	Revised schedule	unchanged	100% complete					
SW development	Baseline schedule		75% complete					
	Current status	33% complete	33% complete					
	Revised schedule	unchanged	33% complete					
Alpha testing and bug fixing (w/ content subset)	Baseline schedule			75% complete				
	Current status	due to start						
	Revised schedule	unchanged			75% complete			
Integration of full content	Baseline schedule					75% complete		
	Current status	not yet started						
	Revised schedule	delayed by 2 weeks				75% complete	20% complete	
Beta & RC testing and bug fixing	Baseline schedule						75% complete	
	Current status	not yet started						
	Revised schedule	delayed by 2 weeks					75% complete	20% complete
Acceptance & deployment	Baseline schedule							75% complete
	Current status	not yet started						
	Revised schedule	delayed by 2 weeks						75% complete
			Current date					

Project dashboard

The **collection of performance indicators** makes up a **project dashboard**, which is an essential project management tool that the PM should use on a virtually permanent basis for **project direction/supervision** as well as for **reporting** purposes.

Software tools such as a simple spreadsheet or a sophisticated project management application may be used to create and update a project dashboard. The task may be made easier by using ready-made templates, although such templates may not be perfectly adapted to any specific project and may therefore require some adjustment.

There are project dashboard templates (in Excel or HTML format) and even full-blown dashboard applications available on the web (some free of charge, others for a fee): google (or bing) "project dashboard" or "project management dashboard" to find them.

Here is a link to an **interesting article on the subject of project dashboards**:

>> www.anticlue.net/archives/000875.htm

The PM's "To-do list"

The job of a PM involves performing a very large number and a very broad variety of tasks, and it is a **major challenge** for the PM to **make sure that no task is omitted and that all tasks are carried out in a timely fashion**.

A helpful tool for that purpose is a "To-do list". The principle is obvious:

- 1) make a note of things **to do**,
- 2) **do** them,
- 3) mark them as "**done**"!

Of course, in order to be effective, this simple system requires a list of **action items** ("things to do") that is **exhaustive** and kept **up-to-date**.

Action items may result from information gathered in meetings, conversations (over the phone or face to face), e-mails, etc. Another major source of action items is the project dashboard, which the PM should always keep an eye on. In addition, the PM can generate action items just by thinking about the project, which he should be doing all the time!

As mentioned in the "Meetings" section of this chapter, each action item should be given a **level of priority** depending on its importance and degree of urgency, a **deadline for completion**, and, if the PM cannot handle it himself, he should **assign someone** to the action item and hold that person **responsible** for it.

Action items that are both **important and urgent** should be highlighted (and performed ASAP...).

Less important and less urgent tasks should however not be neglected or systematically postponed. The PM must make sure to allocate a certain amount of time every day for such tasks, in order to avoid a build-up that might become unmanageable.

The To-do list should be **updated** as frequently as necessary. The PM should browse through it first thing every morning and plan his day accordingly.

The PM should have his **To-do list handy at any time** and wherever he may be. It can be kept in a notebook, a laptop computer, a smartphone, a phablet or tablet... whatever works!

Adhesive notes should be avoided for obvious reasons (if you think about it...), and using a web-based ("cloud") application is not advisable since access to the Internet may not be available when you need access to your To-do list.