

فصل ۹

ارتباطات، پیگیری و گزارش پروژه

1

Project Communication, Tracking, and Reporting

اهداف فصل

در این فصل، شما با ارائه یک طرح و برنامه ارتباطی مؤثر، به منظور پیگیری، نظارت و گزارش بهتر روند پیشروی پروژه آشنا خواهید شد. پس از مطالعه این فصل، شما باید با موارد زیر آشنا شده و قادر باشید:

- ◆ آن دسته از فرایندهای مجموعه دانش مدیریت پروژه (PMBOK) با عنوان مدیریت روابط پروژه را که شامل برنامه ریزی روابط پروژه، توزیع اطلاعات، گزارشات کارایی و موارد اجرایی می باشد را مشخص کرده و تشریح کنید.
- ◆ انواع مختلف ابزارهای گزارشی را که از برنامه ارتباطی پشتیبانی می کنند، توصیف نمایید.
- ◆ نحوه توزیع اطلاعات بین ذینفعان پروژه، و همبسته نقش فناوری اطلاعات در پشتیبانی از ارتباطات پروژه را تشریح کنید.

2

PMBOK® GUIDE - PROJECT COMMUNICATIONS MANAGEMENT

- مدیریت ارتباطات پروژه شامل فرایندهای لازم برای اطمینان یافتن از انجام به موقع و صحیح موارد زیر است:

• ایجاد (Generation)

• گردآوری

• توزیع

• ذخیره سازی

• ازبین بردن

3

PMBOK® – PROJECT COMMUNICATIONS MANAGEMENT

○ برنامه ریزی ارتباطات تمرکز می کند بر:

- اطلاعات چگونه ذخیره خواهد شد؟
- دانش چگونه ذخیره خواهد شد؟
- چه اطلاعاتی به چه کسی می رود، چه موقع و چگونه؟
- چه کسی می تواند به چه اطلاعاتی دسترسی داشته باشد؟
- چه کسی اطلاعات و دانش را به روزآوری خواهد کرد؟
- چه رسانه ارتباطی مناسب ترین است؟

4

PMBOK® – PROJECT COMMUNICATIONS MANAGEMENT – CONTINUED

- Information Distribution
 - getting the right information to the right people in the right format
- Performance Reporting
 - collection and dissemination of project information to the various project stakeholders.
- Administrative Closure
 - verifying and documenting the project's progress.

6

MONITORING AND CONTROLLING THE PROJECT

- صرف نظر از این که پروژه چقدر خوب برنامه ریزی شده، وضعیت های غیرمنتظره پیش خواهند آمد. این وضعیت های غیرمنتظره ما را مجبور به تغییر زمانبندی و بودجه پروژه می کنند
- به خاطر بروز یک واقعه غیرمنتظره، مدیر پروژه اعتبارش را از دست نخواهد داد. اما او نتواند این واقعه را اداره کند اعتبارش را از دست میدهد

6

THE PROJECT COMMUNICATIONS PLAN

- Can be formal or informal
- Supports all of the project stakeholders
 - Who has specific information needs?
 - What are those needs?
 - How will these needs be met?
 - When can they expect the information?
 - What will be the format?

Stakeholder	Information Requirements	Type of Report/Metric	Timing/Availability	Medium or Format

7

THE PROJECT COMMUNICATIONS PLAN

- Stakeholders
 - Individuals or groups that have a positive or negative interest in the outcome of the project
- Information Requirements
 - What stakeholders need to know about the project
 - E.g., scope, schedule, budget, quality, risk, etc.
- Type of Metric or Report
 - Could be a specific report from a project management software package, a newsletter, or information that a particular milestone was achieved
- Timings/Availability
 - When stakeholders can expect to receive a report or other information about the project
- Medium or Format
 - How the information will be provided
 - E.g., electronic mail, presentations, meetings, or online

8

PROJECT METRICS

- Project Metric
 - A qualitative measurement of some attribute of the project.
- Project metrics should focus on the following key areas:
 - Scope
 - Schedule
 - Budget
 - Resources
 - Quality
 - Risk

9

A GOOD PROJECT METRIC MUST BE...

- Understandable
 - Intuitive
- Quantifiable
 - Objective (no bias)
- Cost Effective
 - Easy and inexpensive to create
- Proven
 - What gets measured gets done
- High Impact
 - Otherwise why bother?

10

DASHBOARD METRIC

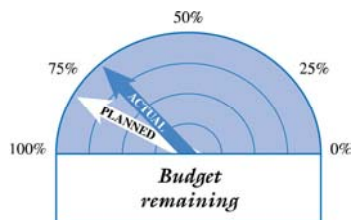


Figure 9.2

11

PROJECT MEASUREMENT SYSTEMS SHOULD...

- Allow the team to gauge its own progress
- Be designed by the project team
- Adopt and use only a handful of measures
- Track results and progress

12

EARNED VALUE

- Suppose you just signed a contract with a consulting firm called Dewey, Cheatem, and Howe for developing an IS.
- Project Budget, Schedule, Tasks
 - \$40,000
 - 4 months
 - 20 Tasks (evenly divided over 4 months)
 - \$2,000 per task
 - 5 tasks per month

13

The Planned Project Schedule And Budget

Task	Month 1	Month 2	Month 3	Month 4
1	\$2,000			
2	\$2,000			
3	\$2,000			
4	\$2,000			
5	\$2,000			
6		\$2,000		
7		\$2,000		
8		\$2,000		
9		\$2,000		
10		\$2,000		
11			\$2,000	
12			\$2,000	
13			\$2,000	
14			\$2,000	
15			\$2,000	
16				\$2,000
17				\$2,000
18				\$2,000
19				\$2,000
20				\$2,000
Total	\$10,000	\$10,000	\$10,000	\$10,000

Table 9.1

EARNED VALUE CONCEPTS

- Planned Value (PV)
 - The planned or budgeted cost of work scheduled for an activity or component of the WBS
 - In our case, our planned value for each task is \$2,000
 - The planned value for each month is \$10,000
- Budgeted At Completion (BAC)
 - The total budget for our project
 - In our case, \$40,000 is our BAC since this is what we expect to pay for the completed project
 - The BAC is the total cumulative planned value

15

PLANNED BUDGET

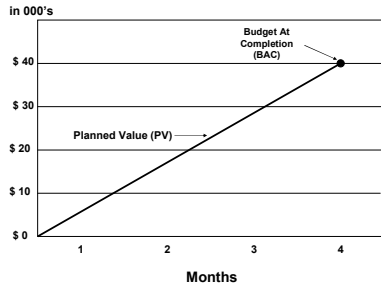


Figure 9.3

16

AT THE END OF MONTH 1, WE
RECEIVED THE FOLLOWING INVOICE...

Invoice

Dewey, Cheatem, and Howe

Amount Due: \$8,000.00

Payment Due: Immediately

Page 1 of 2

17

THIS LOOKS LIKE GOOD NEWS!

- We expected to pay \$10,000 but we're only being billed for \$8,000
 - Are we really ahead of our budgeted or planned value by \$2,000?
- It depends on what work was accomplished for the \$8,000 that is due

18

THEREFORE, WE NEED TO LOOK AT THE REST OF THE INVOICE TO BE SURE

It appears that only three of the five tasks scheduled to be completed in Month 1 were completed as planned. In fact, two of the tasks cost more to complete than originally estimated.

Maybe things are as good as we thought!

Invoice

Dewey, Cheatem, and Howe

Work Completed for Month 1

Task 1: \$2,000

Task 2: \$3,000

Task 3: \$3,000

Page 2 of 2

19

PLANNED VALUE VERSUS ACTUAL COST

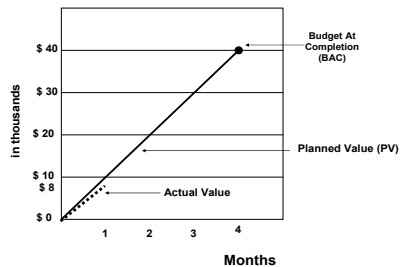


Figure 9.4

20

SOME MORE EARNED VALUE CONCEPTS

Actual Cost (AC)

- The actual cost incurred for completing an activity or component of the WBS
 - For example, the actual cost for completing task 2 is \$3,000
 - Or, we have to write a check for \$8,000 for the three tasks that were completed in Month 1

Earned Value (EV)

- A performance measurement that tells us how much of the budget we really should have spent for the work that was completed
- We need to pay our consultants \$8,000 in actual costs even though we should be paying them only \$6,000
- This \$6,000 is called the earned value

21

PLANNED, ACTUAL, & EARNED VALUES FOR MONTH 1

Task	Planned	Actual	Earned
1	\$2,000	\$2,000	\$2,000
2	\$2,000	\$3,000	\$2,000
3	\$2,000	\$3,000	\$2,000
4	\$2,000		
5	\$2,000		
Cumulative	\$10,000	\$8,000	\$6,000

Table 9.2

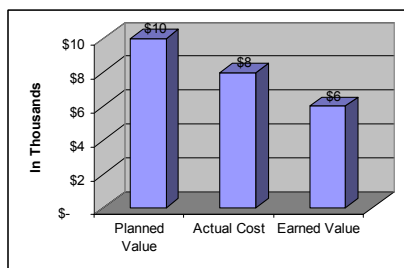
↑
What we
planned to pay

↑
What we
have to pay

↑
What we
should pay

22

COMPARISON OF PLANNED VALUE, ACTUAL COST, AND EARNED VALUE



We are spending \$8,000 to achieve \$6,000 worth of work!

Figure 9.5

23

COST METRICS

- Cost Variance (CV)-the difference between a task's or WBS component's estimated cost and its actual cost:

- CV = EV - AC
 - Negative Value = over budget
 - Positive Value = under budget
 - Value = 1 means project is right on budget

- Cost Performance Index (CPI)-percentage of work completed per dollar spent

- CPI = EV ÷ AC
 - ratio > 1 = ahead of budget
 - ratio < 1 = behind budget (cost overrun)
 - Ratio = 1 means project is right on budget

24

COST METRICS

$$\begin{aligned}\text{Cost Variance (CV)} &= \text{EV} - \text{AC} \\ &= \$6 - \$8 \\ &= (\$2)\end{aligned}$$

Negative Value tells us the project is over budget

25

COST METRICS

$$\begin{aligned}\text{Cost Performance Index (CPI)} &= \text{EV} / \text{AC} \\ &= \$6 / \$8 \\ &= .75\end{aligned}$$

ratio < 1 = the project is over budget

For every \$1 spent, only \$0.75 of the work we budgeted was really completed

26

SCHEDULE METRICS

- Schedule Variance (SV) – the difference between the current progress of the project and its original or planned schedule

- $SV = EV - PV$
 - Negative Value = behind schedule
 - Positive Value = ahead of schedule
 - Value = 1 means project is right on schedule

- Schedule Performance Index (SPI) – a ratio of the work performed to the work scheduled.

- $SPI = EV \div PV$
- ratio > 1 = ahead of schedule
- ratio < 1 = behind schedule
- Ratio = 1 means our project is right on schedule

27

SCHEDULE METRICS

Schedule Variance (SV) = EV – PV
= \$6,000 - \$10,000
= (\$4)

Negative Value tells the project is behind schedule

SCHEDULE METRICS

Schedule Performance Index (SPI) = EV/PV
= \$6,000 / \$10,000
= .60

ratio < 1 tells us the project is behind schedule

For every \$1.00 of work that was expected to be completed, only \$0.60 was accomplished

SUMMARY OF PROJECT PERFORMANCE METRICS

Task	Planned Value PV	Actual Cost AC	Earned Value EV	Cost Variance CV	Schedule Variance SV	Cost Performance Index CPI	Schedule Performance Index SPI
1	\$2,000	\$2,000	\$2,000	-0-	-0-	1.00	1.00
2	\$2,000	\$3,000	\$2,000	(\$1,000)	-0-	0.67	1.00
3	\$2,000	\$3,000	\$2,000	(\$1,000)	-0-	0.67	1.00
4	\$2,000				(\$2,000)	-	0.00
5	\$2,000				(\$2,000)	-	0.00
Cumulative	\$10,000	\$8,000	\$6,000	(\$2,000)	(\$4,000)	0.75	0.60

Table 9.3

EXPECTED TIME TO COMPLETE (ETC)

- Provides an estimate for completing the scheduled work that remains
 - What if these variances from our planned schedule and budget are typical and we expect them to continue?
 - What if they are atypical and we don't expect them to continue?

31

EXPECTED TIME TO COMPLETE (ETC)

- ETC (typical variances)
 - = $(BAC - \text{Cumulative EV to date}) / \text{Cumulative CPI}$
 - = $(\$40,000 - \$6,000) / .75$
 - = \$45,333.33

If we believe the variances (i.e., problems) encountered so far WILL continue for the remainder of our project, then the funds needed to complete the rest of our project is estimated to be \$45,333.33.

32

EXPECTED TIME TO COMPLETE (ETC)

- ETC (atypical variances)
 - = $(BAC - \text{Cumulative EV to date})$
 - = $(\$40,000 - \$6,000)$
 - = \$34,000.00

If we believe the variances (i.e., problems) encountered so far will NOT continue for the remainder of our project, then the funds needed to complete the rest of our project is estimated to be \$34,000.00.

33

ESTIMATE AT COMPLETION (EAC)

- Estimates the most likely total or final value based on our project's performance and any risks that should be considered
 - We can either revise the whole budget and schedule and start over, or...
 - We can use the project's current performance metrics to develop a more realistic picture
 - Depends on whether we believe these variances are typical and expected to continue or atypical – i.e., we don't expect variances or problems as we continue with the project.

34

ESTIMATE AT COMPLETION (EAC)

- EAC (typical variances)
$$= \text{Cumulative AC} + ((\text{BAC} - \text{Cumulative EV}) / \text{Cumulative CPI})$$
$$= \$8,000 + (\$40,000 - \$6,000) / .75$$
$$= \$53,333.33$$

If we believe the variances (i.e., problems) encountered so far WILL continue for the remainder of our project, then the total budget to complete this project is estimated to be \$53,333.33

35

ESTIMATE AT COMPLETION (EAC)

- EAC (atypical variances)
$$= \text{Cumulative AC} + (\text{BAC} - \text{Cumulative EV})$$
$$= \$8,000 + (\$40,000 - \$6,000)$$
$$= \$42,000$$

If we believe the variances (i.e., problems) encountered so far WILL NOT continue for the remainder of our project, then the total budget to complete this project is estimated to be \$42,000

36

BUT WHAT IF THINGS CONTINUE TO GET EVEN WORSE?

- A more conservative method for determining what our project will cost incorporates the original budget (aka, the BAC), the CPI, and the SPI

Funds Required (if things continue to get even worse)
= Original Budget / (CPI * SPI)
= \$40,000 / (0.75 * 0.65)
= \$88,889

37

ANOTHER WAY TO CALCULATED EARNED VALUE...

- In terms of completion of the planned value
- Just multiply the planned value (PV) of an activity, task, or WBS component by its percentage of completion

38

EARNED VALUE = PV * PERCENT COMPLETE

Task	Planned Value	Percent Complete	Earned Value
A	\$1,000	100%	\$1,000
B	\$1,500	100%	\$1,500
C	\$2,000	75%	\$1,500
D	\$800	50%	\$400
E	\$1,200	50%	\$600
Cumulative	\$6,500		\$5,000

Table 9.4

REPORTING PERFORMANCE AND PROGRESS

REPORTING CATEGORIES

- Reviews
 - Formal & informal meetings with stakeholders
 - May focus on specific deliverables or milestones
 - Used to get acceptance, surface problems or issues, or make key decisions

40

REPORTING PERFORMANCE AND PROGRESS

REPORTING CATEGORIES

- Status Reporting
 - Describes present state of the project
 - Compares actual progress to baseline plan
 - Scope, schedule, and budget
 - Like a snap shot of the project at a specific time

41

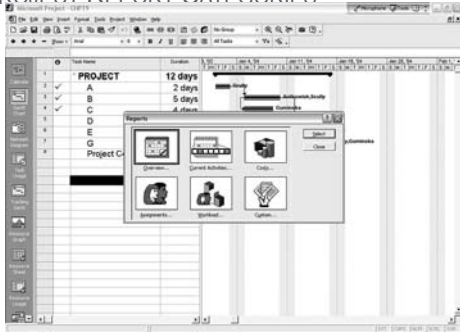
REPORTING PERFORMANCE AND PROGRESS

REPORTING CATEGORIES

- Progress Reporting
 - What activities or tasks has the team accomplished?
 - Actual versus planned
- Forecast Reporting
 - Predicting the project's future status or progress
 - Example: trend analysis

42

PROJECT REPORT CATEGORIES



43

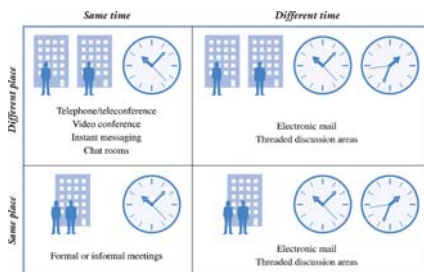
Figure 9.7

INFORMATION DISTRIBUTION

- Face-to-Face Meetings (F2F)
- Telephone, email, other wireless technology
- Collaboration technology

44

COMMUNICATION AND COLLABORATION MATRIX



45

Figure 9.8
