**ASSIGNMENT-6**

**1. How do you evaluate the performance of a project in agile?**

Ans:

The performance of a project in agile can be evaluated using the agile project metrics.

The key measures are:

1.Velocity

2.Hit rate

3.Work remaining on task

4.Project cost

* **Velocity:**It is a metric that predicts how much work an Agile software Development team can successfully complete within a time-boxed period.Velocity is a useful planning tool for estimating how fast work can be completed and how long it will take to complete a project. The metric is calculated by reviewing work the team successfully completed during previous sprints.

Example: if the team completed 10 stories during a two-week sprint and each story was worth 4 story points, then the team's

**Velocity =10\*4=40 story points per sprint.**

* **Hit rate:It** is the percentage of work allocated to a Timebox that was actually completed.

Example:if a team aimed for 100 Story Points of User Stories, but ended up only completing 78 Story Points, their

**Hit rate =(Obtained story points/expected story points)=(78/100)\*100=78%.**

* **Work remaining on task:**The team estimates the work remaining on each active Task on a daily manner.The estimate of work remaining Task will go down over time.But if the task is more complicated then this factor may rise than we expected. This is where the data for the Timebox Burn Down Chart come from.
* **Project cost:**In most organisations the cost of a project must be tracked to ensure it does not go over budget. Since you’re tracking on it you may as well report it.

Three Management Measures are:

1.Cost Performance Index (CPI)

2.Schedule Performance Index (SPI)

3.Earned Business Value (EBV)

* **Cost Performance Index (CPI):**Determines whether we are ahead or behind the cost factor.

ie;**Cost Performance Index (CPI) = (Baseline Cost per Story Point)/(Actual Cost per Story Point)**

If project goes according to plan **CPI and SPI would = 1** every Sprint. If **CPI>1**, then we are spending less than what is expected for each Story Point.If **CPI<1**, then we are spending more than what is expected for each Story Point.

* **Schedule Performance Index (SPI):**Determines whether we are ahead or behind the project schedule.

ie;**Schedule Performance Index (SPI) = (Actual Velocity/Baseline Velocity)**

If **SPI>1**, then we are finishing earlier than expected.If **SPI<1**, then we are finishing later.

* **Earned Business Value (EBV):**It gives a clear picture of the project’s progress and is a new metric in agile.It measures outcomes not outputs.Here outcome means the “end goal or vision” while output means “what we do and who we reach”.Stories does not have business value, but contributes to the feature that has business value.

**2. Compare traditional monitoring & control with agile monitoring & control with respect to metrics generation?**

|  |  |  |
| --- | --- | --- |
| **SI.no** | **Traditional monitoring & control** | **Agile monitoring & control** |
| 1 | Focus on people, communications, the product, and flexibility. | Very concerned about observing and measuring actual performance against the plan. |
| 2 | The Agile development tool uses a variety of methods unique to Agile that combine to produce an efficient software development process. | Variance from the plan is considered bad unless there is change management approval |
| 3 | Using an agile development model, do the same type of work as a traditional waterfall model:create requirements and designs, develop product, and integrate product with other products as necessary. test the product, fix any problems, and deploy it for use. | Monitoring is observation and Control is corrective action taken as a result |
| 4 | Break the project into smaller segments of the overall project called *sprints.* | Project managers tracks factors such as cost, quality and effort |
| 5 | Use an *empirical control method* — a process of making decisions based on the realities observed in the actual project. | Move to the next phase only when the previous one is complete. |
| 6 | Velocity is less . It takes more time to produce a working software. | Velocity is more. It takes less time to produce a working software as it is used in sprints. |
| 7 | Delivery takes time. | Frequent delivery |
| 8 | It doesnot focus on earned business value | It focuses on Earned Business value. Business value is based on customer satisfaction |
| 9 | Hit rate depends on the overall completion of the delivery | Hit rate depends on the completion of each sprint. |
| 10 | Colocation is not necessary in this method. | Colocation is necessary for the effective delivery. |
| 11 | No Daily stand up meetings. | Daily standup meetings. |

**3. With a total project budget of $ 175,000, and having completed one out of four Iterations, we have this product backlog and these actuals:**

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Estimate  (storypoints) | Completed  (storypoints) | Actual Cost (1000s  dollars) |
| Welcome Screen | 10 | 10 | 15 |
| Advert - Splash Screen | 20 | 20 | 30 |
| Login Screen | 10 | 10 | 20 |
| Personalized Google Ads | 20 |  |  |
| Catalog Browser | 20 |  |  |
| Catalog Editor | 10 |  |  |
| Shopping Basket Browser | 5 |  |  |
| Shopping Card Editor | 25 |  |  |
| Check-out Process | 20 |  |  |
| Invoice Calculation | 10 |  |  |
| Credit Card Verification | 10 |  |  |
| PayPal Payment Handling | 20 |  |  |
| Order Confirmation Email | 20 |  |  |
| Totals | 200 | 40 | 65 |

**in our example, after Iteration 1 we should be at 25% complete)**

* **Calculate Planned Value**
* **Actual % Complete**
* **Earned Value**

Ans:

Total story points =200

completed story points completed= 40

Acutal % completed =(40/200)\*100=20%

Planned value=cost of work expected to be completed(25/100)\*175000=43750

Earned value=cost of work completed (20/100)\*175000=35000