**Birla Institute of Technology & Science, Pilani**

**Work Integrated Learning Programmers Division**

**First Semester 2022-2023**

**Date:12/10//22**

**Assignment**

**Weightage 15%**

Submitted By**: Satish Kumar Sharma**

BITS ID: **2022mt93327**

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**Case Study-1:**

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**Case Study-1**: Breaking Down Silos Between PM & Dev. by T-Mobile Marks=7%

YouTube: https://www.youtube.com/watch?v=7SGHStr4tZQ

1. What are Silos and how were they formed?

What techniques and tools did T-Mobile employ to effect this change in their organization?

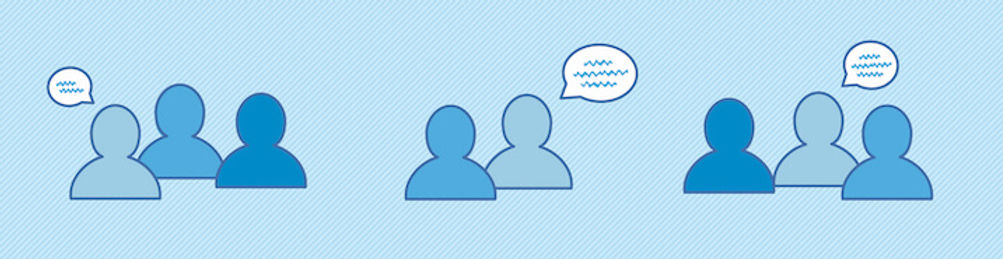
1. How do you incorporate this into your own organization?

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1. What are Silos and how were they formed? What techniques and tools did T-Mobile employ to effect this change in their organization?

**Answer:**

**Organizational silos:**

Organizational silos are divisions of many types of assets that are essential to an organization, these divisions might be based on the workforce, procedures, records, knowledge, methodologies, etc.  


**Organizational silos developed generally for the reasons listed below:**

1. Organizational silos emerge when executives, and eventually workers, are permitted to become more devoted to a particular team or group than to the employer or business as a whole.

* Silos cause workers to become more exclusive and warier of other departments, which makes it harder for groups to collaborate. Sharing of information practically halts. This is seen in meeting interactions. Members of the team are cautious with their words, hesitant to actively participate in discussions, and generally uncommunicative.

1. Lacking an understanding of individual team Vs overall organizational goals.

* Silos are created when the individual departments lose sight of the overarching goal of market success and instead focus on departmental goals.

1. Poor communication about the organization's objectives

* Lack of direction from the top regarding corporate goals, fostering an environment of mistrust and a lack of formal communication gives tacit permission for leaders and employees to form silos.

1. Competing for resources. When the leaders compete for resources to their individual teams without considering the overall company’s requirements focus on immediate results vs. larger company goals
2. Biased increments, promotions, incentives etc.
3. Silos due to culture, linguistic, regionalism etc.
4. Lack of healthy communication between the teams.

As per the use case, Organizational silos are created by the following reasons:

1. **Agile manifesto** – it created by only software developers but did not include other functions and roles while creating the manifesto. So as an organization, to achieve common business objective, agile principles should be adopted, practiced by all and not just by software developers. Though agile manifesto and agile principles are not specific to a particular role, would have been more impactful if manifesto preparation had participation from business, project management, product management etc.
2. **Scrum Guide** – It purely role-based guide and practice and does not include newer roles created which leads to a gray area of confusion. There is always a confusion on WHAT to be delivered and HOW to be delivered between business/project management and developers. It does not capture the value flow across the system.
3. The impact of organizational structure on our projects and products that we deliver can be better understood from **Conway’s law** which states that product architecture mirrors the communication and architecture structure of its organization. Another finding from a recent study is that organizational defects are directly related to the group in which they are found. **Perception and bias**

**Some of the particular Organizational silos captured in the use case**

1. Product management Vs Development
2. Technology Team A vs Technology team B
3. Employees Vs customers
4. Team being agile vs team doing agile
5. Roles based silos: product Manager, project manager, scrum master, Product owner...etc.
6. Business team vs Technology team

**Tools and techniques used by T-Mobile as presented by the speaker in the use case is based on the speed and value driven agile product development practices which could be grouped as**

1. **Decreasing time to market:**
2. Inception and discovery workshop: Business team presented their research and understanding of requirements to an entire audience containing business and technical stakeholders and identify the next steps together. They were able to collaborate through this workshop and refine the requirements together.
3. Value stream mapping.
4. Story mapping.
5. Big Room planning.
6. MVP through Swarming, pair programming, mob-programming.
7. High level functionality such as epics and features identified, refined, and aligned from the Inception/Discovery Workshop, were broken by all the team members with other stakeholders discussing in the same room leading to common understanding and alignment.
8. **Continuous improvement and learning:**
9. Organizational big room retrospective
10. Product launch retrospective
11. Product & dev leadership retrospective
12. Product and dev leadership working agreement
13. **Feedback Velocity:**
14. Weekly customer reviews deep dive
15. Feedback cycle time
16. Quick-wins sprint capacity
17. Real customer interaction
18. Business shadow or user involvement
19. Developer Rotation
20. Realtime demo
21. Telemetry and qualitative feedback from business

**Note:** Though the speaker refers to success stories based on the above practices in different companies, I assume that the above practices were followed in T-Mobile to bridge the gaps and get rid of silos

1. **How do you incorporate this into your own organization?**

**Answer:**

In my current role/organization, I encountered the following silos and how I took proactive steps to counter them **when I first started leading teams from Yemen, Dubai and Africa. (The steps Silo and I have taken are purely well-founded). As a technical manager, my role is purely to achieve business goals)**

|  |  |  |
| --- | --- | --- |
| Sl. No | Silos | Practice followed to counter silos |
| 1 | Cultural and linguistic difference / barriers between Yemen and African employees | **Weekly tech-talk** for open discussion on the topic so that both Yemen and African employees openly discuss |
| 2 | Lack of architectural documentation on the productized applications and hence employees were presuming individually among Yemen and African teams. | **Architectural re-construction**. Minimum documentation preparation to align the entire team (**both Yemen** **and African** **team**) |
| 3 | Different dashboards for Yemen and African employees for tracking tasks/defects | Common Jira dashboards to track the activities/progress |
| 4 | Documentation in African | Conversion of technical documents to English and planned review for alignment |
| 5 | Lack of vacation planning and backup, lack of sharing when one takes leave and who is their backup? | Common shared google sheet and approval process so that deliverables are not impacted |
| 6 | Sprint retrospective/lessons learned were not documented by all and hence historical lessons learned were not documented ( this was a huge silo between the teams and within the team too) | Made lessons learned mandatory and root cause analysis mandatory for all the blocker defects so that team learns and provides better applications to the customer |
| 7 | Disparity in knowledge between the individuals and teams leading to silos | Have applied common training calendar for all the team members to request for a sponsored , corporate trainings to get rid of knowledge disparity |
| 8 | Cultural silos between African and Yemen employees | Arranged Business continuity plans and had few African employees visit India and mingle with Yemen colleagues to get rid of cultural silos |
| 9 | Team trust and bounding | Provided Training and online fun activity |

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**Case Study-2:**

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**Case Study-2:** Marks=8%

Agile Software Process – Case Study

**Use Case Overview:**

United Arab Emirates is planning for the International event, where they are expecting 13 country football teams participate; these matches will run for 21 days. UAE event management organization have hired your company to develop the software products required for the event management.

Your team is going to work for the product called “facify-me” [Facilitations System] that will be **primarily used by football team members & Coaches to know their respective schedule and location of their matches and practice games arranged in local grounds.**

**Product Backlog:**

“facify-me” should serve for:

1. Total User base: (260 Team Members + 26 Coaches + 50 Facility Support Team

+ 10 Facility Admins + 5 Executives + 10 Buffer)

2. Total Grounds: 7

3. Practice Matches: 7

4. Total Matches: 23

**Prioritized Features to be developed:**

1. User registration should support only registered member (assumption, you have the registered user’s list from the UAE event management and use the provided user base number)

2. “facify-me” should provide dashboard summary on app home page

3. Facility Admin should be able to book the grounds with approval of any Two Executives

4. Ground list should only show Available / Free ground list at the time of booking by multiple Admins

5. Ground should be made automatically available when the schedule is canceled. Each ground should show four slots.

6. Upon every schedule confirmation respective team members and coaches should be notified on their mobile application. Coach should be able to make request for any changes in ground selection or Schedule changes

7. The request for change in Ground and Schedule should pass through the approval from Facility Admin Team and any of Two Executive.

With reference to above Product Backlog and prioritized feature development, your team has been asked to plan for Sprint backlogs.

Where:

Sprint Life**: 2 Weeks**

Team Size**:** 8 (Product Owner, Scrum Master, 6 Development Team Members)

**Questions:**

1) "Estimate the effort for the above features expressed in Story Points" and state any assumptions you made.

2) Identify Sprint’s required to attain the above Product Backlog Development

3) Determine sprint backlog for each Sprint

4) Evaluate the Velocity of the Sprint Execution

**3. Outputs/Results:**

The Answers should contain the steps to arrive at the projected solution. In addition, submit the report created which contains list of Story and their respective tasks list with evaluation of Velocity as per the Story Points delivered in each Sprint.

**Answer:**

**Assumptions:**

* Features commercial enterprise fee isn't shared via way of means of the patron and as a result characteristic prioritization does now no longer rely on the commercial enterprise fee and as a result prioritization isn't encouraged via way of means of the patron.
* Product Owner has labored on comparable assignment within side the beyond and has required revel in to coordinate with clients and scrum group
* Product vision, Product Roadmap, Release plan and product backlog is prepared and the whole scrum group is aligned and geared up for estimation and prioritization.
* Prioritized capabilities to be advanced are constant and there may be no scope for brand spanking new capabilities to be added (as in keeping with use case description)
* Scrum grasp has labored on comparable assignment within side the beyond and has required revel in to facilitate the scrum group and make it self-prepared to supply the desired stories/capabilities
* The group of 6 builders are skilled builders comprising of each frontend/ backend improvement and has QA testers who're Qualified in each useful and non-useful testing
* The whole scrum group has labored in comparable assignment within side the beyond and as a result their estimation is matured and their pace is strong and feature not unusual place information at the dash goals
* Team estimates the usage of Fibonacci estimation
* Target date for product of entirety isn't designated and as a result it might be pretty assumed that it isn't a constraint (and as a result launch making plans with the transport dates isn't mandatory)
* Story factors anticipated includes (spikes and tech-debt if any) and excludes holidays, personal-time off.
* Product Backlog Item (PBI) does encompass best capabilities and does now no longer encompass changes, Defects, Technical improvements, know-how acquisition etc.
* It`s the power assist group who feeds the floor info to the system/application

**Project Trade-off matrix** (based on the assumptions and prioritized feature list)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Fixed | Flexible | Acceptable |
| Scope | x |  |  |
| Schedule |  | x |  |
| Cost |  |  | x |

**Features, Stories and Tasks to be developed in “facify-me”:**

**Feature Summary**

|  |  |
| --- | --- |
| **Sl. No/**  **Feature No.** | **Feature** |
| **1** | User registration should support only registered member (assumption, you have the registered user’s list from the UAE event management and use the provided user base number) |
| **2** | “facify-me” should provide dashboard summary on app home page |
| **3** | Facility Admin should be able to book the grounds with approval of any Two Executives |
| **4** | Ground list should only show Available / Free ground list at the time of booking by multiple Admins |
| **5** | Ground should be made automatically available when the schedule is canceled. Each ground should show four slots. |
| **6** | Upon every schedule confirmation, respective team members and coaches should be notified on their mobile application. **Coach should be able to make request for any changes in ground selection or Schedule changes** |
| **7** | The request for change in Ground and Schedule should pass through the approval from Facility Admin Team and any of Two Executive. |

**The features could be grouped logically as follows**

**Feature 1 – “**Facify-me” app should be able to register Team Members, Coaches, Facility Support Team, Facility Admins, Executives and system should be able to approve and decline based on the available records.

**User story 1**: As a solution architect, I want to design framework so that it meets the product objectives as captured in the product backlog-**5SP**

**User Story 2**: As a team member, I want to register so that application recognizes me as a team member for future notification – **2SP**

**User Story 3**: As a coach, I want to register so that application recognizes me as a coach for future notification and schedule request -**2SP**

**User Story 4**: As a facility admin, I want to register so that application recognizes me as an admin for future notification and approvals -**2SP**

**User Story 5**: As an executive, I want to register so that application recognizes me as an executive for future notification and approvals-**2SP**

**User Story 6**: As a facility team member, I want to register so that application recognizes me as a facility team member for future notification and requests -**2SP**

**User Story 7**: As a buffer member, I want to register so that application recognizes me as a buffer member so that I can future notification and tasks-**2SP**

**User Story 8**: As a facility team member, I want to add ground details so that it could be used by teams to book grounds based on the availability slots. - **2SP**

**Note**: As there are common functionalities among the user stories, there should be a way to capture the tasks systematically to avoid padding and hence, I would prefer to estimate based on the tasks and equally distribute the efforts among the affected user stories

Task1: To create an End-to-End framework design -**5SP**

Task2: Create basic home page including registration section – **2SP**

Task3: Develop UI to make user registration and validate against the available data – **2SP**

Task4: Develop UI to get Ground details from facility team – **2SP**

Task5: Create a backend API for approval based on the previously filled/sourced data, validations – **1SP**

Task6: store the user registration data – **1SP**

Task7: To store the ground details data – **1SP**

Task8: To store the ground data – **1SP**

Task9: User story validation – **2SP**

Total story points:21 SP

**Feature-2: “Facify-me” should provide dashboard summary on app home page**

**User story 9**: As a member, I want to view Team details, match schedules, ground schedules, and ground availability status in the dashboard summary page on the app home page

**Total Story points: 8SP**

Task10: Develop widgets required for home page **-2SP**

Task11: Develop team info page **-1SP**

Task12: Develop ground info page (available / Free/ Booked by) **-1SP**

Task13: Develop ground free slots page based on date/time-**-2SP**

**Task14: User story validation -2SP**

**Feature 3 – Enable Ground Bookings, Approvals and Cancellations using “Facify-Me” app.**

**User Story 10** - Facility admin should be able to book any ground and slot from the available Grounds list and should be approved by executives before booking is confirmed

**Total Story points: 13SP**

Task 15 – Add Ground Booking link on Home Page – **1SP**

Task 16 – Only Facility Admin should be able to view Ground Booking Link and should be able to book and should be viewed as AVILABLE OR FREE for facility admin teams – **1SP**

Task 17 – Display available Grounds, Slots and Matches for Booking – **1SP**

Task 18 – Create a Booking Approval Workflow – **3SP**

Task 19: - Booking request to be notified to executives -**1SP**

Task 20: - Executives should be able to approve or reject within a stipulated time-**2SP**

Task 21: Booking should be confirmed once TWO executives approve-**1SP**

Task 22 – Communicate the booking confirmation to coaches, members and facility admin team and update the status in the app home page. -**1SP**

Task 23: User story validation -**2SP**

**Feature 4 – Enable Coaches to request Ground or schedule change**

**User Story 11** – Enable Coaches to make requests for changes in Ground or schedule.

**Total Story points: 13SP**

Task 24: Ground/Schedule Change Request workflow development -**5SP**

Task 25: Facility admin team and executives should be able to approve/reject ground or schedule change requests from coaches and change should be approved only if two executives approve -2**SP**

Task 26: App home page should reflect any changes in the cancellation -**2SP**

Task 25: Every team member, coach, admin team, facility team, executives should be notified on ground change or cancellation requests.-**1SP**

Task 26: User story validation -**3SP**

**Sprint Backlog for sprint 1**

|  |  |  |
| --- | --- | --- |
| **User stories** | **Tasks** | **Story points** |
| **1-9** | **1-14** | **29** |
|  | **Bug fixes+ Demo task** | **3** |
|  |  | **32SP** |

**Assumption: There will be 3SP dedicated for bug fixes in Sprint1**

**Velocity in sprint 1=32SP**

**Note:** At the end of sprint1, we should be able to deliver workable software with user stories 1-9

**Sprint Backlog for sprint 2**

|  |  |  |
| --- | --- | --- |
| **User story** | **Tasks** | **Story points** |
| **10-11** | **15-26** | **26** |
|  | **Bug fixes+ Demo task** | **6** |
|  |  | **32SP** |

**Assumption:** There will be 6SP dedicated for bug fixes in Sprint2 as it is a final sprint for the product release

Velocity in sprint 2 =32SP

**Note:** At the end of sprint2, we should be able to deliver workable software with user stories 10 and 11 with increment from Sprint1

* **We need totally 2 sprints to complete 11 user stories with velocity as 32SP in each sprint**