Foundations of Agile and Agile Frameworks

**EXERCISE WORKBOOK**

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**Case Study: SocialKare.gov**

SocialKare.gov was launched to allow citizens of Nunamerica to enroll in Social Services provided by the government as a result of a devastating pandemic. Unfortunately, the launch of SocialKare.gov was seen as a disaster from all project management metrics, as well as by its key stakeholders’ low satisfaction ratings.



***We will be using this scenario for all of the exercises in this course***

**Independent Investigation**

An independent post-mortem investigation was launched into this project.

The investigation found a pattern of

* poor practices
* lack of clearly identified technical standards
* poor methods to identify software and coding errors.

This led to poor functionality on the website.

During the post-mortem, for virtually every error or gap, the project team claimed it had insufficient time to complete the website by the imposed deadline.

The project was a fixed fee contract with a clearly defined scope of work that was identified up front. As it eventually turned out, this was a complex website with a lot of unrealistic expectations. The multiple government agencies and stakeholders involved handed over a detailed set of inconsistent and difficult to decipher requirements up front. The expectations set for the project team was that they must deliver this content per the defined requirements and contract terms.

An anonymous survey of the team also indicated low morale, stress and employee fatigue.

**8 Key Findings from Independent Investigation**

1. The website launched across all States on the same day. With zero prior experience for citizens who had never used such a website for their important Social Services needs, there was tremendous confusion during the first few days. The system got overwhelmed with users and a multitude of performance issues were reported immediately.
2. Despite following strict government processes, the project developed the website without effective planning or oversight. The government agencies incurred significant cost increases, schedule mistakes and delayed system functionality because of changing requirements at the tail end of the project for functionality that had to go through a stringent change control review. This resulted in significant delays. More agencies were supposed to have input on the development of the website, but the project team did not have a structured approach to obtaining their input.
3. Major coding errors and insufficient capacity for scaling. An investigation identified excessive serious coding flaws in the structure of the website. The project team did not take enough steps to correct the issue until much later in the project life cycle. Some were resolved after going to production. The website was launched with insufficient visitor capacity, leading to further end user frustration. This was captured in the lessons learned session conducted after going to production. There were no Retrospectives and interim lessons learned sessions while the project was underway.
4. Majority of the eligibility requirements were never approved by SocialKare project sponsors and supporting systems integration testing was patchy. The project team claimed they were trying to develop the system in an expedited fashion to meet the deadline so steps ‘had to be missed’. Two months before the scheduled launch, integration tests on the website had not been completed. End-to-end testing, left as the last phase, was never completed before the website launched.
5. Despite thorough documentation and paper trails, oversight was inadequate. Theoretically, a number of governing committees were supposed to oversee the project through quarterly meetings with status updates. The project team spent a significant amount of time keeping up with the required project documents. However, no one raised issues of SocialKare.gov's functionality at the quarterly meetings since neither business representatives nor end user representatives had any hands-on demonstration of functionality that was being built.
6. The project team did not actively engage those business users who best understood the needs of the end users. The project team did not have a formal structure in place to ensure that everyone involved had a shared understanding of all the requirements.
7. While the project team was incentivized to deliver the requirements as specified, due to the time crunch, there was little in the way of ensuring these requirements made business sense throughout the project life cycle. The project team was overwhelmed with an excessive amount of requirements, all flagged as mandatory. What was given as detailed requirements upfront is what the project team worked diligently to deliver. The details were fuzzy in many instances, but the team did not have reliable business representatives readily available to clarify in a timely manner. So, the project team proceeded based on assumptions. It was later realized that several of these requirements were of little value to end users. Further, several key requirements were never uncovered until going to production.
8. Work was assigned by the Project Manager and her boss to the team members as the beginning of the project. Monthly status meetings were conducted by the Project Manager to check on progress based on the defined milestones upfront. Each team member worked on their own list of tasks in silos. The Project Manager monitored everyone’s technical progress individually and stepped in to troubleshoot technical problems. The developers started to depend on the Project Manager’s technical assistance.

**SocialKare.gov Employees**

*This information will be helpful for the Three Core Roles Exercise*

* **John Details**:   
  John is a detail oriented individual who likes to plan everything out in tremendous detail. He has several years of experience as a Technical Project Manager. Prior to stepping into the role of Project Manager, John was a Developer. He is known to have good communication skills.
* **Sarah Tenure**:   
  Sarah has been with the Agency responsible for launching SocialKare.gov for over 2 decades. Sarah has a lot of business knowledge and carries a certain amount of credibility due to this tenure. Sarah is strong headed and likes to make decisions based on how she sees things because she believes she has better insight than others who may have been with the organization for as long as she has.
* **Tim Devs**:   
  Tim has excellent technical skills. He prefers working as an individual contributor where he can spend time diving into the technical challenges on his own. He is well respected for his technical expertise. Tim maintains a strong focus on technical delivery and prefers the business users to stay out of his way while he is working through the development work. Tim leads a team of 5 developers with specialized vertical skills who are also on this project team
* **Jane Dollars**:   
  Jane has sponsored this project. She is a senior executive and likes to stay involved with the day to day activities of projects that she sponsors.

**Why Agile Exercises**



**Agile Mindset Anti-Patterns**

**Instructions:** Read the SocialKare.gov case study and identify at least three anti-patterns that prevented the Agile mindset from being present. Explain why each anti-pattern is problematic.

| **Anti-Pattern** | **Evidence and Results** |
| --- | --- |
| **Environment**  Team was not self-directed and self-organized | **Evidence**   * Each team member worked on their own list of tasks * The Project Manager monitored everyone’s progress individually * PM stepped in to troubleshoot technical problems   **Results**   * Team had no opportunity to build autonomy and confidence * This impacted team’s morale |
| **Quality** Quality was not built-in | **Evidences**   * Major coding flaws * Supporting systems integration testing was patchy   **Results**   * Delays in going to production * End user frustration |
| Demo | Evidences   * Product team did not get an opportunity to obtain feedback from user groups * No properly vertically sliced demos were conducted   **Results**   * Incomplete feature set in production * Complaints from end users after going to production * Team had to rush in and react |
| **Documentation**  Excessive and unnecessary documentation | **Evidences**   * A lot of process driven paperwork * Oversight was inadequate   **Results**   * Time taken away from working on actual product deliverables * Paper trail was not effective |
| **Vetting of requirements**  Inadequate vetting of requirements | **Evidences**   * Key requirement uncovered after going to production * Several requirements that were built not useful   **Results**   * Resources wasted on low priority requirements * Higher priority needs were not met |

**Agile Manifesto**

**Instructions:** Review the SocialKare.gov case study and review the Agile Manifesto Paired Core Values and Agile Principles.  Of the four Paired Core Values, which stand out as being absent at SocialKare.gov? Which Agile Principles are missing? Identify at least two of each and explain why.

| **Missing Paired Core Value** | **Evidence and Results** |
| --- | --- |
| **Individuals and interactions over processes and tools** | **Evidence**   * Lack of team cohesion * Siloed approach * Autocratic management style   **Results**   * Quality of the results was disappointing * Demotivated and fatigued team |
| **Working software over comprehensive documentation** | **Evidence**   * Lots of ineffective planning documents and paper trails * No demos for a working prototype * No opportunity for early feedback   **Results**   * Tangible results at the end inadequate * Feedback on the final deliverables was dismaying |
|  |  |

| **Missing Agile Principle** | **Evidence and Results** |
| --- | --- |
| **Simplicity – the art of maximing the amount of work not done – is essential** | **Evidence**   * Heavy requirements upfront * Unprioritized requirements   **Result**   * Non-value added (NVA) requirements that were not so useful |
| **Our highest priority is to satisfy the customer through early and continuous delivery of valuable software** | **Evidence**   * No delivery of functionality incrementally * No periodic product demos   **Result**   * Feedback loop delayed |
| **Welcome changing requirements, even late in development.**  **Agile processes harness change for the competitive advantage.** | **Evidence**  Changing requirements at the tail end  Stringent change control review  **Result**  Delays in responding to key functional change requests |
| **Business people and developers must work together daily throughout the project** | **Evidence**  Development team did not actively engage business users  **Result**  Delayed feedback loop  Lack of confidence |

**Agile vs. Waterfall**

**Instructions:** Review the SocialKare.gov case study. Where do you see weaknesses in the Waterfall approach to the SocialKare.gov project being applicable? Identify at least two weaknesses and explain why you see them as weaknesses when compared to the Agile approach for SocialKare.gov.

| **Weakness** | **Evidence and Results** |
| --- | --- |
| **Thorough documentation and paper trails** | **Evidence**   * Significant amount of time spent on creating and maintaining documents   **Result**   * Some focus was lost on working solutions * Time taken away from valuable product development |
| **The testing process started once development was over** | **Evidence**   * All testing was planned for and conducted after full development   **Result**   * Bugs founds later in development cycle * Expensive fixes |
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**Setting An Agile Mindset**

**Instructions:** Review the SocialKare.gov case study. Outline three recommendations to set an Agile Mindset at SocialKare.gov. Consider the Agile Manifesto in your recommendation and avoid the negative pitfalls of Waterfall. Explain why your recommendation will help.

| **Recommendation** | **How It Will Help The Team** |
| --- | --- |
| **Ensure Management Commitment** | * Ensures strategic input and support * Continuing clear direction as product development evolves * Resource support * Senior management can play a critical role in removing significant roadblocks |
| **Provide autonomy to the team by empowering them** | * Ensures timely decisions to move the product development forward * Team becomes more self-managed |
| **Incorporate Adaptive Planning with relevant buy-in** | * Inspiring product vision * Roadmap that progressively evolves over time * Release Plan and Iteration Plan sets expectations * Daily updates to ensure proactive stance |
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**Agile Team Exercises**



**Three Core Roles**

**Instructions:** Review the SocialKare.gov case and focus on the employees. Identify the three Agile Core roles and their responsibilities and assign a SocialKare.gov employee to each role. Explain your assignments.

| **Role** | **Responsibilities** | **Employee** | **Justification** |
| --- | --- | --- | --- |
| Facilitator | Doubles up as Agile Coach  Facilitating the Agile Team’s work  Protecting from problems | John Details | Good communication skills  Experience as Project Manager helpful |
| Product Owner | Voice of the Customer (VOC)  Prioritize Backlog  Share Business Decisions & Provide Information | Sarah Tenure | Business Acumen  Credibility  Relationship with Business Users |
| Agile Team Member | Responsible for Creation and Delivery of solutions | Tim Devs | Important Technical Skills |
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**High Performing Agile Teams**

**Instructions:** Review the SocialKare.gov case and focus on the employees. Choose three team members and identify areas where they are not following Agile best practices. Share suggestions for improvement as coaching opportunities and explain why the coaching is needed.

| **Role/Team Member** | **Coaching Opportunity** | **Justification** |
| --- | --- | --- |
| John Details | Focus on facilitation and not technical solutioning; let the team be self-organized and self-directed | Former technical background might inhibit ability to allow the team to be more autonomous  Should not stifle the Agile Team’s innovative and creative side |
| Sarah Tenure | Listen to the Agile Team for input  Make final priority decisions  Do not interfere in the Agile Team’s technical decisions | Needs to be more collaborative  Let Facilitator run the Ceremonies |
| Tim Devs | Allow cross-functional skills development  Collaborate with business | Avoid micromanagement of developers  Give room to innovate |

**Non-Core Roles**

**Instructions:** Review the SocialKare.gov case. Identify at least three non-core roles for the Agile Team. Explain why that role is important to the team’s success.

| **Non-Core Role** | **Justification** |
| --- | --- |
| Sponsor (Jane Dollars) | Senior sponsorship is critical  Sponsor provides formal authorization and funding |
| Enterprise Architect | Valuable technical resource  Can seek guidance on alignment with company’s enterprise wide architecture model |
| Domain Subject Matter Expert | Valuable resource for Product Owner  Can provide domain knowledge and advice |
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**Agile Decision Making**

**Instructions:** Review the SocialKare.gov case study. identify three types of decisions that should be centralized and three that should be decentralized at SocialKare.gov. Explain your recommendations.

| **Centralized Decisions** | **Justification** |
| --- | --- |
| Span a longer time frame | Unlikely to alter in the short term |
| Have a larger organization wide impact | Large and organization wide economic benefits |
| Rare decisions | Not urgent and a deeper more detailed analysis is needed |
| **Decentralized Decisions** | **Justification** |
| Regular or frequent decisions | A centralized decision here would be of limited value |
| Time critical decisions | Should not be delayed because such delays will have a significant cost of delay for the company |
| Local or team level information is needed | These de-centralized decisions need specific local or team level context |

**Agile Framework Exercises**



**The Benefits of Using Agile Frameworks**

**Instructions:** Review the SocialKare.gov case study. List at least 3 specific benefits of using an Agile Framework and explain how those benefits will help SocialKare.gov achieve its goals.

| **Benefit from Using an Agile Framework** | **How The Benefit will Help SocialKare.gov** |
| --- | --- |
| Based on real-life experiences | Company would gain from a proven framework |
| There’s a higher level of predictability | Company will benefit from defined ceremonies and agile team roles |
| Organizations benefit from higher quality delivery | Company will deliver solutions in a timely manner |
| Frameworks can be customized | Best done once company has tried out a framework in its original form |

**Set Up the Scrum Framework**

**Instructions:** Review the SocialKare.gov case study. Set up Scrum for the SocialKare.gov team by recommending the core roles to fil and the ceremonies to be conducted. Include the schedule, duration and agenda for each recommended ceremony.

| **Role** | **Responsibilities** |
| --- | --- |
| Product Owner | Voice of the customer (VOC)  Prioritize Backlog  Share Business Decisions in a timely manner  Provide Information in a timely manner |
| Scrum Master | Provides Scrum Framework coaching and guidance  Facilitating the agile team’s work  Protecting from problems |
| Agile Team | Creation and delivery of solutions |

| **Scrum Ceremony** | **Purpose** | **Agenda** | **Schedule and Frequency** |
| --- | --- | --- | --- |
| Retrospective | Scrum Team inspects itself and creates a plan for improvements | Discuss what went well during the Sprint as well as opportunities for improvement | Occurrence: once per sprint  Time-boxed to 3 hours per sprint |
| Project Vision | Articulate the business need that is intended to be achieved | Discuss Goals, Sponsor, Vision, Success Criteria, Assumptions & Risks | Occurrence: once per project  Time-boxed to 1 hour |
| Release Planning | Develop a Plan that defines when sets of functionality or products will be delivered to the customer | Discuss critical dates and milestones, coordinate with dependent systems and balance business value versus quality | Occurrence: once per Release after initial creation  Time-boxed to 20 minutes |
| Sprint Planning | Plan work to be performed in the Sprint | Create Sprint Backlog  Task planning  Task level estimation | Occurrence: a few times per Sprint  Time-boxed to 8 hours per Sprint |
| Daily Stand-Up | Synchronize activities and create a plan for the next 24 hours | Each team member answers 3 questions:  What did I do since the last time we met?  What do I plan to accomplish today?  What impediments am I encountering? | Held daily  Time-boxed to 15 minutes |
| Sprint Review and Demo | Demonstrate product and discuss marketplace changes and backlog | Team presents completed Sprint deliverables to Product Owner, based on Acceptance Criteria and Definition of Done | Occurrence: once per Sprint  Time-boxed to 4 hours per Sprint |

| **Scrum Ceremony** | **Purpose** | **Agenda** | **Schedule and Frequency** |
| --- | --- | --- | --- |
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**Kanban vs. XP**

**Instructions:** Review the Kanban and XP Frameworks. Identify key differences between the two frameworks in terms of roles, ceremonies and practices.  
  
**Core Roles in Kanban**

| **Role** | **Responsibilities** |
| --- | --- |
| Product Owner | Voice of the customer (VOC)  Prioritize Backlog  Share business Decisions & provide information |
| Facilitator | Providing Kanban Framework coaching and guidance  Facilitating the agile team’s work  Protecting from problems  Servant leader to the PO and Agile Team |
| Agile Team | Responsible for Creation and Delivery of solutions |

**Core Roles in XP**

| **Role** | **Responsibilities** |
| --- | --- |
| Customer (similar to the PO in other frameworks) | Works with business representatives to maximize value  Responsible for prioritizing backlog |
| Testers | Assist customer in creating acceptance criteria  Execute test cases  Communicate outcomes |
| Coach | Servant leader  Coaches team on XP practices  Facilitator |
| Programmer | Pair programming, test-driven development and continuous integration  Designer, Senior programmer, Architect  Assist with testing when time permits |

**Kanban Ceremonies**

| **Ceremony** | **Purpose** | **Agenda** | **Schedule and Frequency** |
| --- | --- | --- | --- |
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**XP Ceremonies**

| **Ceremony** | **Purpose** | **Agenda** | **Schedule and Frequency** |
| --- | --- | --- | --- |
| Retrospective | XP Team inspects itself and creates a plan for improvements | Discuss what went well during the iteration as well as opportunities for improvement | Occurrence: once per sprint  Time-boxed to 3 hours per iteration |
| Iteration Planning | Plan work to be performed in teh iteration | Create iteration backlog  Task planning  Task level estimation | Occurrence a few times per iteration  Time-boxed to 8 hours per iteration |
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| **Key Differences Between Kanban and XP** |
| --- |
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**Recommend a Framework**

**Instructions:** Review the SocialKare.gov case study and the Scrum, Kanban and XP frameworks. Recommend a framework or combinations of frameworks for SocialKare.gov. Justify your recommendation by listing the specific characteristics of the framework that will bring value to SocialKare.gov.

| **Recommended Framework** |
| --- |
| SCRUM |

| **Characteristic** | **Justification** |
| --- | --- |
| Need for time-boxed iterations/sprints | This is a complex project and time-boxed sprints will allow for regular demos and proactive feedback from the business to ensure the project is heading in the right direction |
| Need for Retrospectives | Sprint retrospectives will endure the agile team is working towards guided continual improvement to help such a complex project successfully deliver the anticipated business value |
| Company has a need for self-directed and self-organized teams | The Scrum Framework insists on the Agile team being given autonomy to work on the prioritized and assigned Features and Functionality |

I do not recommend Kanban or XP.

* Kanban is too lightweight for SocialKare.gov since it does not provide sufficient rigor to manage such a complex project.
* XP is not recommended for SocialKare.gov. XP is too software-centric and heavy for SocialKare.gov.