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HOMEWORK: CAPABILITY MATURITY MODEL TEMPLATE

What CMM level do you see this organizations has attained by the end of the scenario and why?

By the end of the messenger scenario, I believe that the company had achieved a CMM level of 2 as the end result of the scenario was a defined process that could be repeated in successive product design applications (Aguiar et al., 2019). The approaches taken in the messenger scenario sought to clearly define the roles of both the management and technical staff as well as defined processes and schedules by which the application could be tracked and repeated. Further, great progress had been made throughout the scenario to develop an organizational culture of acceptance and ownership of these processes so that they could be effectively implemented in successive projects. These features highlight the major characteristics of CMM level 2 being the establishment of repeatable processes and the defining of basic project management processes (Paulk et al., 1993). Another area in which a maturity level of two can be identified is through the simple and flexible schedule structure created in this scenario. The development of a well-estimated and structured schedule is essential in achieving project maturity (Aguiar et al., 2019) and while the messenger scenario developed a structure for tracking progress, it was loosely defined and often needed correcting further highlighting a maturity level of 2 in this area.

While the ending of the process was at a CMM level of 2, several steps were also taken to begin making progress toward CMM level 3. The third level of CMM is categorized by not only the creation of processes but also the documentation and standardization of management techniques and processes across a wider organization (Salman et al., 2022). Although not fully achieved in this scenario, the messenger team made progress toward this goal by implementing cross-functional teams that sought to introduce a greater level of standardization to all of their

processes. This team also sought to integrate the messenger team as part of the larger organization highlighting progress toward a greater maturity level through integration (IT Governance, 2023). This change then allows the team to think about their work within the context of the wider scope of the project and organization moving towards the defined nature of CMM level 3 (Gökalp & Martinez, 2021). In addition to these factors, further progress was made toward a maturity level of 3 through the documentation of procedures and role definitions for reference both in repeated projects and wider company visibility. Publishing documentation such as this allows for project transparency and mitigates the potential hurdles encountered through work in isolation (IT Governance, 2023).

Considering these factors, it can then be seen that the messenger project team has currently achieved a CMM level of 2, but is making progress toward a level of 3. In order to fully achieve CMM level 3, the messenger team must adopt the project management strategies and processes standardized across their wider organization and fully integrate their work into the wider organizational scope. The studying of this case scenario then highlights the importance of defined roles and processes to the maturity of a development team and through studying the CMM levels, a greater project maturity and efficiency can be accomplished.

Maturity Level	Characteristics
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Initial	<ul style="list-style-type: none">• The management team had a primary focus on sales and marketing with insufficient skills for project management and processes (Rothman, 1997).• A lack of transparency existed between teams and individuals disabling collaborative efforts to resolve issues.• The work of the development team was not integrated into the wider scope and objectives of the parent organization (Rothman, 1997).• A secondary effect of the lack of integration can then be seen as the inability to access company development tools, resources, and standards.• Insufficient processes led to most of the development team's time focusing on debugging and the lack of transparency and consistency perpetuated more bugs in the system (Rothman, 1997).• Project documentation was being created and stored on an individual level making it difficult to access and maintain across the development team.• The lack of communication between those writing and testing the code led to inefficient tests that did not correctly identify bugs or areas of concern (Rothman, 1997).• A lack of properly defined management and development roles resulted in ambiguity regarding responsibilities and therefore the inefficient or missed completion of tasks.
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	<ul style="list-style-type: none">• The mentality among the development team was that of a coder and a lack of understanding of customer or stakeholder needs was present in the development process.
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Repeatable	<ul style="list-style-type: none"> • Project Planning- The purpose of Project Planning is to establish and maintain plans that define project activities. <ul style="list-style-type: none"> ○ Project planning is evidenced in the messenger scenario by the development of processes, schedules, and management roles that could be used to repeat project development. • Project Monitoring and Control- The purpose of Project Monitoring and Control is to provide an understanding of the project's progress so that appropriate corrective actions can be taken when the project's performance deviates significantly from the plan. <ul style="list-style-type: none"> ○ This KPA is evidenced through the weekly schedule review and revision performed by the project manager in the newly defined roles. • Measurement and Analysis- The purpose of Measurement and Analysis is to develop and sustain a measurement capability that is used to support management information needs. <ul style="list-style-type: none"> ○ Within the messenger team, a basic level of measurement taking was performed including the measurement of bugs and their completion status as well as progress that could be compared against the schedule (Rothman, 1997). • Process and Product Quality Assurance- The purpose of Process and Product Quality Assurance is to provide staff and
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	<p>management with objective insight into processes and associated work products.</p> <ul style="list-style-type: none"> ○ Process and Product Quality Assurance was accomplished through a combination of management roles. First, the project manager would meet with staff regularly to enable staff on an individual basis to thrive within the team (Rothman, 1997). Further, during these meetings, the project manager would listen for any problems occurring within the development and then bring these problems to the wider team to identify solutions and ensure a high-quality product. ○ In addition to this, the SQA would ensure the quality of the product itself through testing and designing robust testing methodologies in line with the project objectives.
Defined	<ul style="list-style-type: none"> ● Product Integration- The purpose of Product Integration is to assemble the product from the product components, ensure that the product, as integrated, functions properly, and deliver the product. <ul style="list-style-type: none"> ○ Product integration can be observed in the messenger scenario by examining the model for concurrent testing and development (Rothman, 1997). This then allows for an iterative approach to development and testing to be performed as each phase can be concurrently accomplished

	<p>according to the development plan (Tsui, Karam, & Bernal, 2016).</p> <ul style="list-style-type: none">• Validation- The purpose of Validation is to demonstrate that a product or product component fulfills its intended use when placed in its intended environment.<ul style="list-style-type: none">○ Validation was performed in the messenger scenario through the defined model established for product testing. Product testing occurred at several points throughout the development process allowing for the continual validation of project components (Tsui, Karam, & Bernal, 2016).○ In addition to this, the specific role of the “code czar” was assigned to an individual responsible for the integration of code into the product (Rothman, 1997) further identifying validation processes.• Organizational Process Focus- The purpose of Organizational Process Focus is to plan and implement organizational process improvement based on a thorough understanding of the current strengths and weaknesses of the organization's processes and process assets.<ul style="list-style-type: none">○ While not fully realized within the messenger team, progress was made toward this objective through the development of the cross-functional team responsible for creating project
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	<p>transparency and allowing for feedback from differing work domains.</p> <ul style="list-style-type: none">○ This team then allows for a greater connection to be formed between the development team and the larger parent organization, opening up the possibility for greater process improvement through shared feedback (Tsui, Karam, & Bernal, 2016).○ In addition to this, process improvement and focus can be seen in the defining of processes within the messenger team. However, as this improvement represents a change from having no defined process to a minimally defined process it does not fully represent this KPA. <ul style="list-style-type: none">● Organizational Process Definition- The purpose of Organizational Process Definition is to establish and maintain a usable set of organizational process assets.<ul style="list-style-type: none">○ This KPA is evidenced in the messenger scenario as clear processes were defined and modeled for future use and reference (Rothman, 1997). In addition to this, definitions were created to allow for a shared understanding of process roles and objectives which increase the organizational value of the created processes among the development team (Tsui, Karam, & Bernal, 2016). With this, the processes defined
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	<p>within this scenario could be further defined and optimized upon successive project iterations to further qualify this KPA.</p> <ul style="list-style-type: none">• Organizational Training- The purpose of Organizational Training is to develop the skills and knowledge of people so they can perform their roles effectively and efficiently.<ul style="list-style-type: none">○ While room for improvement still exists within this KPA, a certain degree of training is present both explicitly and through the management structure in the messenger product's development. One area where this can be seen is through the project manager's regular meetings with development team members to see how they are doing and if there is help needed in any area (Rothman, 1997). These development problems being brought to the entire team for solving then creates a shared learning environment where developers can learn from each other.○ Further, regular training occurred within the development process through explanations of code segments where walkthroughs were shared with the team before the code was sent to be tested in the system (Rothman, 1997).• Integrated Project Management- The purpose of Integrated Project Management is to establish and manage the project and the involvement of the relevant stakeholders according to an integrated
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	<p>and defined process that is tailored to the organization's set of standard processes.</p> <ul style="list-style-type: none">○ One of the main objectives in defining the project development process for the messenger team was to establish a larger understanding of the scope among the development team (Rothman, 1997). Part of this objective was accomplished through the creation of a multifunctional team that provided input from different work domains. This feedback then allowed developers to hold a greater understanding of the project within the wider context of the parent organization.○ This trait was also further developed as great effort was put into forming a culture of customer-centric development by enabling the development and testing teams to think through the ways that customers would engage with the product (Rothman, 1997). <ul style="list-style-type: none">● Integrated Teaming- The purpose of Integrated Product Teaming is to form and sustain an integrated team for the development of work products. Notes: The following characteristics distinguish an integrated team: Team members include empowered representatives from both technical and business functional organizations that have decision-making authority and the responsibility to act for their respective organizations.
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	<ul style="list-style-type: none">○ Integrated teaming is highly evident within the messenger scenario as the cross-functional team provided a meaningful platform for different business groups to provide input into the development process (Rothman, 1997). The implementation of this team then empowered the development team to work within the greater scope of the parent organization and further the goals of the business within all aspects of the development project.
Managed	<ul style="list-style-type: none">● None Present.
Optimizing	<ul style="list-style-type: none">● None Present.

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