

PROJECT HUGO

Group #9

by:

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Question 2:

After thorough investigation in analyzing the benefits and issues with each of the various project management methodology models, it was agreed upon that a hybrid model was best for the nature and expectations of the fulfillment of Project HUGO. This hybrid model consists of a mixture between Agile Scrum and Waterfall methodologies, taking the strengths from both types, allowing each methodology to pick up on the other's weaknesses.

In considering the incorporation of a third format, the Critical Path Methodology was decided not to be used due to its lengthy and time-consuming planning. Making adjustments to the CP Plan is difficult as the entire network diagram is forced to be reconstructed as well as the possible need for a new critical path being designated. The precision and time put into using critical path methodology is ineffective for Project HUGO considering its size and the number of moving parts involved with the lengthy project. It is difficult to plan for each specific activity in each phase for a project of this size, and as mentioned, having to reconstruct the plan accordingly would be wasteful.

The incorporation of the Waterfall technique allows the project to be carried out in meticulous, in-depth detail, with no ambiguity. This type of project with a large scale requires a well-outlined scope and a clear structure from start to finish. This entails the defining of team roles, clear measurements for progress, straightforward planning and designing, with punctual start and end points for each phase. Additionally, in a project like HUGO, these criteria are essential for the technical development and

implementation of 11 hospitals. However, with the ability to ensure a well-outlined and clear structured scope comes the inability to review and revise any project developments during a phase. With this, deadlines may not be met, requiring delay for all future deadlines.

In Project HUGO, the 24-month project duration gives a strict timeline for the project, which would best be handled using methodologies from an Agile Scrum process. The Agile model conducts testing throughout each phase of the project, Project HUGO would be tested and ensured to avoid major issues come the final few months of the strict deadline. Thus, through the design, development, implementation, and testing phases being run in an Agile Scrum format; the code production would be developed faster, and changes would be permitted along the way in order to best meet test phase criteria, strict deadlines, and budgets. In accomplishing each technical phase part-by-part, breaking down steps and having them thoroughly completed allows for the ensuring of customer and stakeholder satisfaction.

Having said that, it is possible that a project is delayed months and even years if managers and leads are forced to reconvene and discuss small changes or details with each member of the client and stakeholder party. In the case of Project HUGO, managers and leads do not have the time to discuss these minute details with each hospital's representative, never mind head physicians, pharmacists, and nurses. This will cause extreme delays. Thus, in order to keep the benefits of the Agile Scrum approach, any tech leads, or managers are required to report to PM Susan Johnson to

discuss updates and possibilities for adjusting details throughout each phase. She can communicate directly with client parties in a timelier fashion than any of the software development team, and therefore, avoid delays. This ensures the effectiveness of the Agile Scrum during the coding phases while avoiding the ability to delay strict timelines when it comes to this form of methodology.

In keeping a Waterfall structure during the planning, recruiting, building, analyzing, and maintenance phases of Project HUGO, the phases that do not require many variances or issues will be thoroughly examined and detailed in order to ensure they are completed on time. In coding phases of a project, there are many variances and changes that need to be made along the way as well as unprecedented issues that arise. Thus, an Agile Scrum approach works best during the development, implementation, and testing (coding phases) of a project. But when planning dates and costs, or recruiting and building teams, these phases require less client communication and involve less risk mitigation, which is why organizing and completing them in a detailed, descriptive, and clear manner such as through the Waterfall format, is best for these circumstances. Similarly, in the final few phases of the project involving analysis and maintenance, the same approach should be used. These final phases involve clear-cut goals that should be well-outlined with minimal errors or challenges to appear during the process.

Question 3:

Given the large scale and high level of detailed complexity, Project HUGO allows for many nuances that will occur during its timeline. Various biomedical approaches were gathered that can be leveraged within Project HUGO to ensure a successful deployment, as many of these approaches will benefit the project. Certain approaches, such as the interface design considerations used in the creation of medical devices, can be useful within HUGO to integrate into CPOE interfaces as it will impact different people through different interactions, as even the smallest details in these interactions could result in different outcomes. In contrast, for example, crucial information could be miscarried through these interactions in the current medication workflow. After the medication workflow interfaces for CPOE are created, the use of leverage must dictate how these interfaces will function. Most patients want to feel like there is still sentimental value within their treatments. Thus, it is crucial that problems such as objectifying patients through “barcodes” must be formally addressed to avoid distrust in the system and doubts in the integration interfaces.

Outsourcing is an additional desirable practice from technology-transfer projects that can be used within Project HUGO. In order to minimize the capital investments associated with in-house manufacturing, companies will outsource their work. Project Hugo could leverage this standard practice as it will allow for staying within budget, including any margin of error, ultimately benefiting the outcome. Moreover, this practice will allow for quicker delivery times of the software (being that there are countless partnership companies working together to deliver the final product).

Within the healthcare system, each group of healthcare professionals have different priorities and motivations. With these differences in motivation, Susan Johnson must take control and leverage the motivation within the system, being aware of how she approaches each group of healthcare professionals. Pharmacists may love the idea and the efficiency of the project scope, but physicians will not appreciate the changes as much as they do not want to become “data entry clerks”. With leveraging workers' motivation, she can formulate a way to break these differing goal barriers between different healthcare professionals in an attempt to push everyone behind a single motivating, driving factor that will ensure the successful unified rollout of Project Hugo.

Communication is evidently crucial within large projects such as Project HUGO, being that there are a diverse number of roles and professional backgrounds working together simultaneously. As for the integration of the interfaces, miscommunication is a common issue that could easily present itself. In order to avoid miscommunication within a large project consisting of diverse backgrounds working in unison, the use of an “inside man” should be implemented. Being a technique frequently used in transfer technology projects, Susan Johnson can leverage this practice by recruiting a team member from each background; physicians, nurses, pharmacists, and allied health professionals into Project Hugo's member group in order to assist with stronger communication across organizational boundaries. After being able to leverage these

standard biomedical practices comes an increase in the chances of a successful launch for Project HUGO.

Question 4:

As for any project, conflict is bound to arise in the workplace. In projects of such a great size involving over 10,000 employees and including 11 medical institutions, the scope of Project Hugo is gigantic. To achieve a fulfilling and successful rollout of this project requires a tremendous amount of communication skills, and these skills are essential during inevitable points of conflict rising. Some examples of conflict during this project include issues meeting deadlines, underestimating the budget, and keeping the entire project flowing in a unified manner under the same goals and mindset. For a project of such great size, this can easily occur and result in a lack of clarity in the vision for the CPOE efforts as well as insufficient leadership through a lack of transparency from leads to team members. Moreover, Susan Johnson is fully aware of the inability to get all staff members (particularly physicians and nurses) onboard with the projects' goals, and this is a recipe for conflict. Having clinician workflow change drastically in an environment where resistance to change is already apparent creates grounds for many conflicts. Physicians may neglect or give little effort into learning the new system's technology, and this can result in training or support removed too early, which in the end, would delay the project. From a medical workers' perspective, the end result of Project HUGO could result in a lack of overall purpose or value, and a lack of effective communication methods between all stakeholders involved could be the cause of this.

Given the great potential for conflict mentioned above, there should be detailed planning in effectively approaching these problems. Whether it be interpersonal or departmental conflict, Susan Johnson should plan to deal with conflict through a

behavioral and interactionist approach. From an interactionist standpoint, we believe that from conflict comes constructive thinking and problem solving, which ultimately leads to a better end project. It is known historically that there have been many issues between clinicians/physicians and the implementation of CPOE, and it is believed that this conflict arises through poor communication as well as the two sides not addressing the others' concerns. With Project HUGO, it is encouraged for staff and management to openly address concerns or parts of the project they feel are incorrect or pointless. This will ultimately allow management to either provide better understanding of the project or modify the project to enhance it. There is, of course, the argument that conflict should be dealt with swiftly (traditionally), however we believe that this can lead to conflict suppression, which results in unhappy employees unwilling to initiate conversations about the right issues. From a behaviorist view, for any conflict, Susan Johnson should be approaching it with a problem-solving mindset, aiming to alleviate the stresses of the situation, effectively progressing through the project.

To achieve the goals outlined in Project HUGO, it is vital for Susan Johnson to mediate and control issues before they spiral out of control. This is where her excellent project management skills will need to flourish. Dealing with conflicts such as difference of opinion, project flow, and clarity of goals requires an element of professionalism that can only be achieved through face-to-face interaction. In solving these problems through in-person confrontation, confusion and ambiguity are avoided. However, it is essential that she speaks with congruency and uniformity while addressing conflict with team leads and other stakeholders. Discussing one idea in words but showing a

completely separate idea through body language is a huge mistake Susan cannot afford to make. If she shows different ideas through her actions, words, and body language, she will mislead listeners, resulting in a lack of trust and belief on their behalf. To successfully confront conflict in a professional manner, she must show congruency to fully instill trust and reasoning for her listeners. Tone is another essential quality to make her listeners feel heard, respected, and appreciated which will result in active listening and further questions from others, ultimately ensuring clarity and keeping the common goal in mind.

As Susan Johnson aims to resolve conflict in the organization, she will need to offer compromises to the parties involved. Compromise is usually the best-case scenario, as all the individuals have their concerns heard respectfully, and are somewhat satisfied. However, she must always consider the impact on the project. She will be advised to refrain from forcing viewpoints as a resolution technique. Forcing can lead to negative long-term effects and emotionally scarring tendencies to individuals on the team. Forcing should only be used as an absolute last resort, and thus other techniques should be considered and attempted prior to this. In regard to the physicians' and nurses' distaste for the technological advancements HUGO offers, a smoothing or accommodating technique suits best for this conflict scenario. When relief from stakeholders' and medical workers' discontent is required (even simply to avoid its resulting delays and standstills to the project's timeline), Susan must adhere to these workers' issues, as they are not nearly as important to her as they are to them. Being a project manager, she will not have to deal with this change in technology for the rest of

her career the same way a physician would, and thus, she must respect that it is critical to smooth the conflict for their sake. Whether it be offering additional resources to learn technology or offering extended support, she must prioritize their opinions. Moreover, she might also run into situations where she is faced with aggression and hostility during conflict. She may wish to avoid or deflect the situation at hand by postponing it until the circumstances are in her favor. Avoidance is a strategy used to get more time and better prepare yourself for the conflict at hand. She should be warned that when leaders avoid conflict, it can have a negative effect on their status or position and raise doubts about their leadership.

To maximize the likelihood of Susan Johnson's success in achieving the rollout desired from Project HUGO, all aspects of communication must be adhered to. One of the first aspects to touch upon in regard to communication within a project, is meetings. For Project HUGO, meetings will be held on a biweekly basis for the duration of the projects' lifespan involving leads, stakeholders, and project manager Susan Johnson. However, during the initial launch, the project will have meetings more frequently to cover the background and build the culture. Meetings will take place in the initial planning and building stages of the project with the goal to build the team's chemistry. An initial meeting designed to build the team and introduce each other will kick-off the project for each department. Following this will come a meeting discussing the project goals, team charter, and commitment building exercises to ensure the entire team is onboard. These meetings will take place in the planning and building IT team phases of HUGO. These initial meetings will take place more often than biweekly because of the

urge to mesh the team together well, create common goals and aspirations, and to create the best environment that will nurture success. Once the scope and goals have been well-established (as the project switches into pre-development stages), meetings will not need to be as frequent to prevent redundancy and ensure productivity. Meetings switching to biweekly at these stages onward will allow experiences to be shared, inputs and ideas to flow effortlessly, all while avoiding a lack of purpose in each meeting. In keeping meetings purposeful, time will not be wasted and meetings will be kept informative. The clear-cut reason for biweekly meetings throughout the project's lifespan is to maintain the upkeep and pace of the project. If changes are required from a financial or time perspective, these meetings will organize and implement them.

Question 5:

Reason	Severity	Likelihood	Detectability	RPN#	Main Driver of risk
1. Motivation for implementation is driven by anything but patient care	3	3	6	54	<p>- The severity is low because if this risk came true then it wouldn't pose a huge problem since the main goal of CPOE is to digitize the records and in the end no matter the motivation the records will still be digitized in the end</p> <p>- Likelihood is low because Johnson created a Clinical Informatics team that was responsible for advocating the use of technology to enhance the quality of patient care. Since Susan herself created the team and had known how the electronic system saves lives, there is a low chance that the motivation is something other than patient care.</p> <p>- Detection is moderate, this is because it is easy to tell when people are motivated by the right reasons, rather than for money, power etc.</p> <p>- Project HUGO makes day to day processes for clinicians and physicians easier, however does not actually affect patient care</p> <p>-Main driver of this risk is probably implementing CPOE for monetary reasons. Also since LHSC is falling behind in this area as compared to other smaller hospitals, they would want to implement this.</p>
2. Lack of clarity in CPOE vision	6	2	4	48	<p>- Severity is moderately high because if people are not on the same page regarding the purpose of CPOE, it will cause confusion. This leads to issues in the completion of the project and understanding the overall goal</p> <p>- Likelihood is low because we plan to have a clear stream of communication, where members of the organization can ask</p>

					<p>questions and stay updated on the goals of the project and what changes will be made in the future and how it will affect them.</p> <ul style="list-style-type: none"> - Detectability is moderately low because as the project moves along, we can gauge questions asked by the organization to see what people are thinking about the project. It is impossible to know how everyone perceives the completion of project HUGO, but we can get a good sense. - Main driver for this risk is miscommunication and doubts held by organization about the implementation of project HUGO
3. Lack of visible leadership support	10	4	2	80	<ul style="list-style-type: none"> - Severity is really high because if senior management does not believe in the success of the project (i.e. not supporting it) then the staff themselves don't have any reason to do so as well. Change is hard and if the top management is not receptive to it then the staff would feel no need to change - Likelihood of this happening is relatively low, considering we have a PM who is highly motivated and experienced in this field, looking to produce a successful project, however there will always be times in a large project where there isn't constant visible leadership. Since the senior leadership themselves asked Johnson to determine the cost of implementing electronic records, it is safe to assume that that they already support this change - It will be pretty easy to detect if the management was not willing to go ahead since there will be a lot of resistance to the change - One driver of this risk could be internal conflict between the senior management as it shows a rift in support
4. Costs are underestimated	9	4	8	288	<ul style="list-style-type: none"> - Severity is high because if we are over budget, it leads to reallocation of funds from other phases of the project which ultimately leads to not being able to fully

					<p>complete the project, or a subpar product</p> <ul style="list-style-type: none"> - Likelihood is slightly below the middle because when it comes to managing the costs of ownership, organizations will not forget because they are dealing with a large sum of money (\$25 million). However, the productivity of the workers is unpredictable and there may be decreases in productivity throughout the project. - We gave this a high detectability score since it won't be until the final stretch of the project where workers will be less productive. We can ignore the ongoing costs of ownership because as mentioned before, a budget this large will be allocated carefully. - One risk driver for this would be that while working on the project, if there is a consistent decrease in productivity, it will lead to hiring more workers to get the project back on track (more expenses like additional salaries). - Another driver is that there could be unforeseen problems that come along that haven't had enough funds allocated for it due to its low likelihood of happening which then causes the project to be over budget.
5. Workflow and processes are not accurately and completely mapped and understood.	7	5	5	175	<ul style="list-style-type: none"> - Severity is high because the lack of understanding for the new workflow process could cause the staff to revert back to the old ways. If this happens then it would mean a failure since it never gets adopted. - Likelihood is moderate because the staff don't really understand how complex their current process is. They know to just hand off the piece of paper to the next paper and the patient will then get taken care of but don't realize the no of mistakes and steps taken along the way. Because of this if there is a problem with the new system it might just cause the staff to want to go back to paper since they will feel that the new system doesn't work.

					<ul style="list-style-type: none"> - the detectability is also moderate since if the staff is having problems they will not walk up to management to raise their concerns either due to fear of repercussions or the want to just let the new system fail so they could go back to the paper system. - Main driver for this risk would be lack of training for staff and not providing clear understanding of the project
6. Value to users not apparent	8	10	2	160	<p>- severity is pretty high for this because if the physicians think of this as clerical work then after a while they might hand over this clerical work to nurses which will increase their workload. This will in turn cause a decrease in the quality of patient care as the nurses main focus will be doing the extra work meant for physicians. And if the users themselves don't understand the benefit offered by CPOE then the adoption will be really slow.</p> <p>"Most staff believed that the physicians would find a way to deflect order entry responsibility with pharmacists or nurse and thus resented the expected increase in their work load"</p> <p>- likelihood is really high because the previous attempts to implement CPOE had failed due to the lack of want to change. Johnson and the senior management will have to make it apparent on how it could help the patients a lot more than the current system which could mean changing the beliefs of a majority of the staff which would not be easy and would come with its own set of problems.</p> <p>- Easily detectable because we can see when the clinicians are handing off the CPOE to nurses believing it is clerical work</p> <p>- Main risk factor is that clinicians and</p>

					physicians have preconceived notions about CPOE and do not understand its value proposition. This in turn leads them to believe that it is clerical work.
7. Project management methodology is not followed to enhance speed to implement. The mistaken belief that hospitals can do it on their own!	7	2	3	42	<p>- The severity is high because if the project does not follow PM methodology to enhance implementation speed then it might cause the project to be delayed which will in turn increase the costs associated. Senior management could look at this unfavorably and could just pull the plug if enough deadlines are not being met.</p> <p>- The likelihood is low because we will be hiring a project manager who will have previous experience with CPOE projects and hence will have a great understanding on what types of methodology need to be applied for faster implementation. Another reason for it being low is due to HUGO using Cerner to assist in the implementation. Their extensive experience with CPOE implementation will help make this project a success.</p> <p>- The detectability is low because we can easily know if the project manager is not a good fit for this project since they are not able to meet their deadlines on time.</p> <p>- One main driver of this risk could be the PM themselves who feel like they don't need to apply the Project Management methodology to improve the efficiency and this could be measured against the hard project deadlines and whether they are being met or not.</p>
8. Technology	4	3	8	108	<p>- The severity is not too low because there is a chance that the end UI is not user friendly. This could be easily changed by taking the inputs of the clinicians and modifying accordingly</p> <p>- The likelihood is low because HUGO will</p>

					<p>take into account the type of UI needed by the clinicians and try to deliver a final project which is close to that. There will be enough devices for all the clinicians and will have a sign on strategy so they have access to everything they need on the devices themselves without the need to contact others to deliver patient care.</p> <p>- This will not be easily detectable since the clinicians will not be able to provide feedback on the UI until more than half the project has been completed. If it is not liked by the users, the clinicians then it could not have been predicted easily until it was implemented and feedback was received prior to the go-live date.</p> <p>- The main driver could be the users because if they do not like how the CPOE turned out then they could just refuse to use it causing the entire project to be a failure</p>
9. Training and support removed too soon	10	2	1	20	<p>- Severity is pretty high for this because if the staff are not trained properly and the support system is gone, then there would be a greater chance of mistakes (i.e. patient records getting placed in different files)</p> <p>-The likelihood is low because when the product gets released, there would be a training period where staff members would learn how to use the new CPOE, and staff would always have "live" help.</p> <p>-The detectability is low because when training and support are removed quickly, it is easy to tell when people aren't fully comfortable with the CPOE tool.</p> <p>-One risk driver would be that users of CPOE believe they are ready when they actually are not. Another risk driver would be that management prematurely revokes</p>

					training on the assumption that staff is ready to use CPOE.
10. No optimization process	7	3	1	21	<p>-Severity is moderately high because if the system is not optimized and it runs into an issue, the system will be down without a fast fix. This leads to disorder as patient records cannot be accessed when needed.</p> <p>-Likelihood is relatively low because whenever a software product, like HUGO comes out, there is always a team that will be on stand-by that will fix any errors that severely impacts the function of the product (i.e. database going down, or a bug that prevents adding new patients etc.)</p> <p>-Detectability is super low because when a major error does occur, it is expected to be fixed as soon as possible (i.e. everyone working to fix it). If it is not being fixed, it is easy to tell.</p> <p>- One risk driver would be that the software team may not have taken enough time to map out all the potential problems and create a mitigation plan for it. When the issue arises after the go-live date they will not have a plan in place to solve it quickly. The miscommunication will also play a major role here since the physicians will not know how to exactly communicate their needs in tech language.</p>