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Assignment 1

2) Pizza factory locator subsystem – An adaptive PMLC will be most effective for this project because there is a known goal but the solution is not known. Not even the features or functionality are known. This extent of unknown solution shows that an adaptive approach is better, as opposed to an iterative one.

Order entry subsystem – An iterative PMLC will be the most effective for this project because there is a clear define goal and a known solution. A COT will be used to get the required functionality. It is straightforward, non-complex and will all be released at one time

Order submit subsystem – An iterative PMLC will be most effective here because the functionality of the software is well known, but the system design will be complex and is not clear. It will take iterations to determine how to build the software.

Logistics subsystem – An extreme PMLC will be most effective because the goals are not exactly clear for this subsystem and neither are the solutions. It will be the most complex of the subsystems and requires a view of the whole system. The highly iterative, fast paced PMLC will be beneficial for this subsystem.

Routing subsystem – An iterative PMLC will be most effective because although the application will be straightforward to build, the solution is not exactly known. GPS is expected to be used, but the exactly how is not known. It will be a shorter, more straight forward agile approach.

Inventory management subsystem – A linear PMLC will be most effective because this will be a COT application, but they will now be using the automatic reorder feature to get a discount form the vendor.

3) **Insufficient customer involvement** is when the end user of the product is not

enough a part of the development process. This can lead to goals that are not in line with consumer needs. If not already using an agile PMLC, switching to one can increase user engagement by getting user feedback through the iterations. Though if user feedback is simply not available, it cannot be fixed by using another PMLC.

Undefined goals can increase risk of failure in a project. If the goals that are defined are incorrect, unrealistic or poorly defined, the project may end with a failed final product. If a linear PMLC is being used, using a PMLC that reevaluates throughout the project, such as iterative, adaptive or even extreme, will allow the redefining of goals. Though if through these steps, the goals are continually defined incorrectly, the project is still at risk for failure.

Unmanaged creeps can put a project at risk of failure, specifically when put a high strain on budget, resources and time. Agile PMLCs can help reduce this by allowing PMs to reassess goals and solutions throughout the project, making sure that creeps are kept in check.

High Risk projects are intrinsically more likely to fail than projects with less risk. A PM can choose the best PMLC based on the other factors of the project, but this will not lessen the risk of a project.

Market pressure can cause failure in a project if it rushes or creates unrealistic dedlines for a project. Market pressure can strain any type of PMLC and icrease the risk of failure on any project.

4) The best type of contract for the PDQ project would be a retainer. This is for a few reasons. First, we know that the company is not doing well because of a new competitor. Their president said that the future of the company depends on the project. This means that the company is tight on money and losing revenue. So it may be risky to charge the company after the work is done, since they may not have money to pay. Also, many of the projects are not projects that have a clear solution. This means that an iterative approach is going to be taken and the length of projects will not be set in stone. So having a retainer is beneficial because you can continually reevaluate the status, cost

and time of a project. Using a fixed price contract would be good because you could charge the company up front, but it would not work because of the dynamic nature of the projects that are being completed. You could not calculate the total time and resources that the projects would need before doing them. A time and materials contract would work well for calculating the true cost of the projects, but would not be good because you could not charge the company until the end of the whole project, which could take a long time, and the company may not have the money to pay at that time. A cost plus contract would be beneficial because if the projects go well, the company will have more money to pay with, and if they do not, the fee will be less, so they will most likely be able to afford it. Though, this contract type would not work because there are not clear enough goals to measure performance that could be tied to the pricing of the services. PDQ wants to explore the options of "ready for oven" pizza in 30 minutes or pre-baked in 45 minutes. If their goal was specifically to create one or both of those scenarios, a cost plus contract may work, but they want to explore these options so measuring the success will be difficult. They may find that those options are not possible for their budget, and that may be considered a successful project, even the results are not good for the PDQ.

5) Time constraints

Risk Category	Scope Triangle	Event	Probability (1-5)	Impact (1-5)	Priority (1-5)
PM	time	Time constraints limit product performance	3	2	4
TECH	scope	COT software not available/usable	1	1	2
PM	cost	PDQ runs out of funding before project finished	4	4	2
PM	cost	Resources not available for large project	3	3	4
TECH	scope	Scope of solution too large	3	3	2

			14	13	14

Our risk score is $\frac{14+13}{50} = \frac{27}{50} = 54\%$

There are steps that can be taken to manage these risks. To mitigate the risk of time constraint effecting product performance, we can put emphasis on time during each iteration of our projects. Eliminating unnecessary product scope will cut down on unnecessary time spent and add onto time working on a solution. If there is not COT software available or usable for our needs, we can instead develop our own version of the software if feasible. This will transfer to time risk. To mitigate the risk of PDQ running out of funding, we can only ensure during planning an after each iteration that unnecessary spending is cut as that money is only spend on necessity. To ensure that sufficient resources are available for this project, we must be sure to efficient distribute resources amongst projects before they start. If this is not done correctly, the risk must be accepted, because we will not be able to add on large amounts of resources later. If the scope of the project is too large, we must also accept that. This project is meant to determine whether or not a "pizza factory solution is feasible." If not, the company may not be able to survive the competition.