2023

ABC Furniture Company

CLASS

GSCM450 OL2
Dr. Derek Westfall
Fall Term 2022

ASSIGNMENT

Final Term Project
"Project 2"
Dec 4, 2022

TEAM

Khoa Truong
Krista Graham
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Nancy Cabrera
Leila Cearley

CAPITAL INVESTMENT PROJECT

WAREHOUSE CONSTRUCTION PROPOSAL

Table of Contents

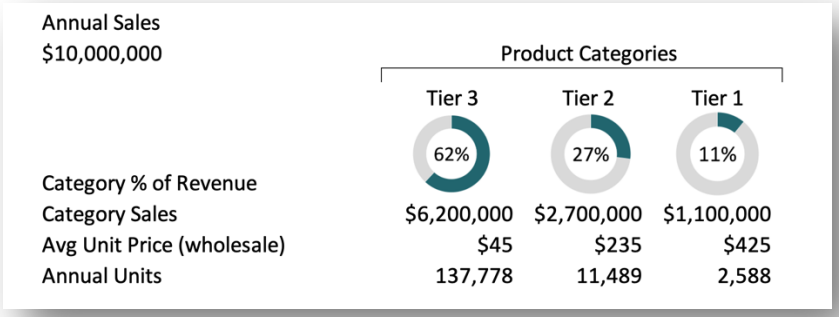
SCOPE MANAGEMENT PLAN

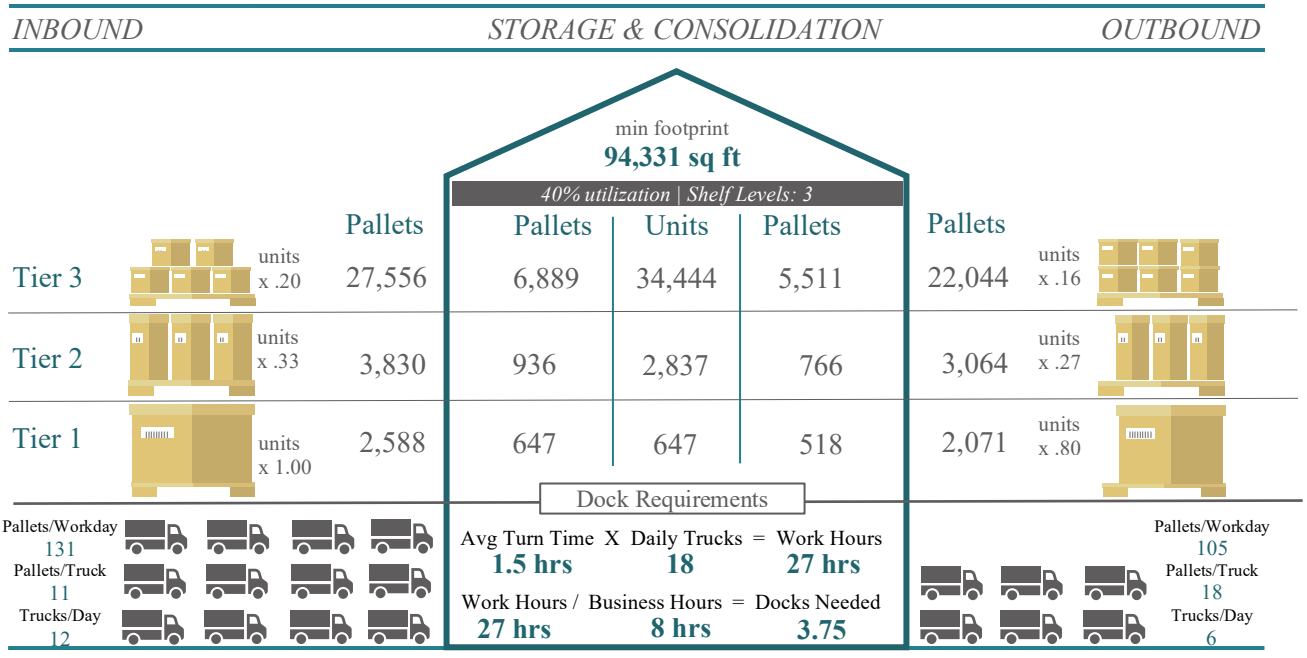
SCOPE OVERVIEW

ABC Furniture plans on receiving, storing, and distributing inventories of physical goods, raw materials and finished product through the 100,000 square foot warehouse. Incoming and outgoing orders are transported via delivery drivers; thus, we ensure that everything runs smoothly through our delivery management system as we keep track of outgoing and incoming orders. With our 100,000 square feet warehouse in mind, we can provide a well-structured facility that manages deliveries, and volume of orders, as our warehouse is located at the heart of the PNW. Access to highways and loading docks is an easy access for all truck sizes, light duty to heavy duty.

Operations Requirements

Our current warehouse sales revenue is $5MM per year with annual throughput of approx. 31,000 pallets of product across our network of regional leased warehouse space. Operational requirements for this project are to consolidate operations to a central hub capable of scaling to annual revenue of $10MM per year as detailed in the infographic below.





There will be plenty of space within our current facility to meet inventory demand at the moment, with our goal still in mind of having plans on expansion in the future. There will be multiple storage units for certain furniture products within our facility. We have organized our warehouse to be efficient, by having all the products separated within each of their own storage units, from couches, beds, tables, chairs, in order for us to optimize the process when receiving and shipping our inventory. Each of our units have shelves that are 15 feet high, which meets OSHA state law. In order to move product in and out of the warehouse, we have 4 operating forklifts but only 3 being used at the time (safety stock) with 3 forklift operators always on site. The forklift we are using are state of the art, which are capable of maneuvering product loads with up to 35,000 lbs., which is very ideal in our case as we're trying to be as efficient as we can, stacking up pallets is the best way of moving around products for us.

Information System Requirements

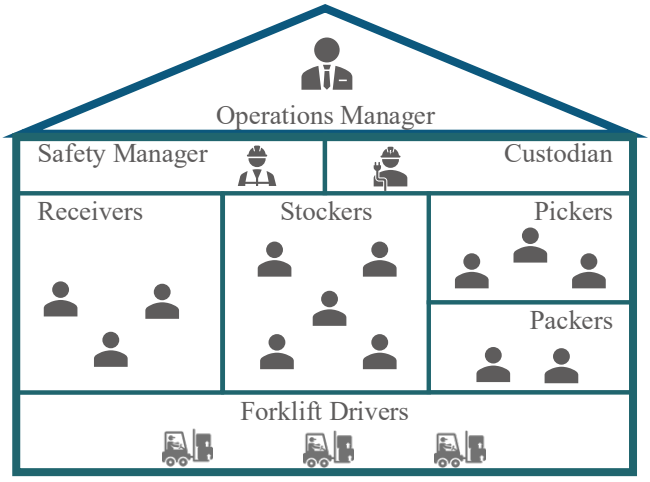
Regarding the operation side, our e-commerce businesses have many operational expenses, the primary two being inventory holding and operations costs. In our quest for profitability, we can't just slash our operations costs without assessing the possible consequences. Rather, one of the ways we try to increase our profit margin is by integrating a warehouse management system (WMS) called Fishbowl Software that improves our warehouse performance. Our main goal is to have a productive warehouse that costs us less to run, which will provide us more time to spend on growing your ecommerce business. Fishbowl is the number one leading warehouse inventory management software we found to be a powerful tool when it comes to our business, as it transforms our inventory management and scales our business, effortlessly.

Staffing Requirements

Once our warehouse sees the day of a fully functional operation, we plan on utilizing 100% of the space, filled with beloved employees who cares about the end user experience and the facility. We have plans on finding well-rounded employees who are specialized in each task, in order for us to have a smooth operation process. We will need receivers to receive and process incoming inventory, once the product has been scanned, a team of inventory stockers will come to put products in storage that are fitting with the description. From there, forklift operators are coming to collect products for any orders that are being placed. Pickers will come to collect the products from the forklifts, scan, pack and prepare. Once the product is ready, drivers will be arranged to arrive to pick up the product. In order to have the warehouse run efficiently, warehouse managers, safety manager, supervisor, team leaders, and clean up crew needs to be present at the facility at all times during operational hours, would be the following:

- 3 receivers
- 2 packers
- 5 stockers
- 3 forklift operators
- 3 pickers
- 1 safety manager
- 1 operations manager
- 1 custodian

= 19 employees daily



CHANGE MANAGEMENT PLAN

Change Control Process

Changes to the baseline scope/cost/schedule will be documented through formal Change Control Request forms and must be approved by the project manager as well as any affected stakeholders. In addition, any change requests that deviate from definitive cost estimates by ± 1.5% or push the final delivery schedule to the right in any increment must also be signed/approved by the CEO. Every effort will be made to ensure such changes are avoided to the fullest extent possible. If a change is approved, this project document will be updated on the project management team's digital sharepoint webpage to ensure the most current approved plan is being referenced by all stakeholders and will be documented in the change control log. All revisions of project documents will be archived along with change request forms and their decision outcomes.

Scope Audits

Once per month the project manager will prepare and document an audit of schedule, cost and scope to the most current project baseline and, if necessary, prepare formal change requests for any corrective actions needed to bring the project back into scope alignment. Risk register will also be updated as needed and changes communicated to all affected stakeholders according to the communication plan outlined later in this document.

SCHEDULE MANAGEMENT PLAN

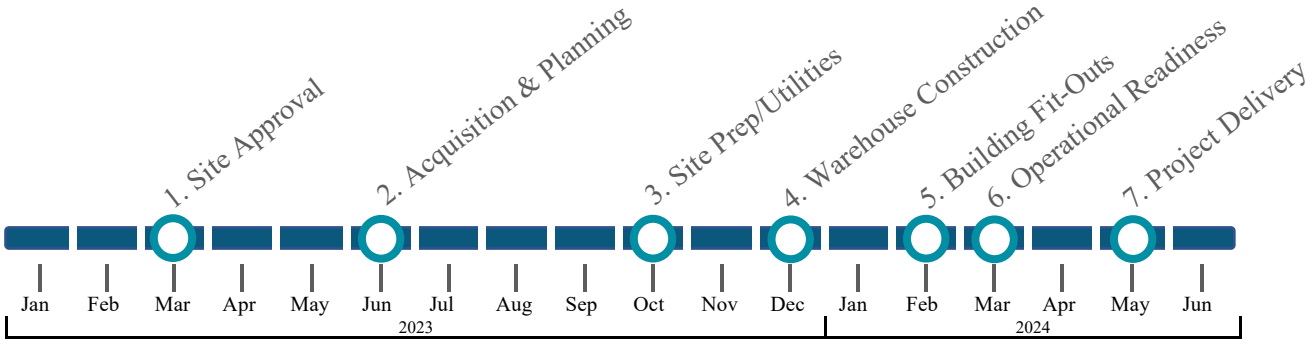
SCHEDULE OVERVIEW

The project is slated to formally kick off during the first week of January 2023 with property tours of several pre-selected potential sites in the Vancouver metro area and end with the transfer of a fully stocked and operational warehouse along with all final project approvals and deliverables to ABC Furniture control by no later than May 31st, 2024. The project team's final wrap-up activities will take place during the first two weeks of June (or post-release) and culminate in a Project Success Celebration on Friday June 28, 2024. All-in-all the total duration of the project is scheduled to last just shy of 18 months.

WORK BREAKDOWN STRUCTURE (WBS)

Milestones

The project team has identified 92 major activities, divided into 20 sub-categories for which there are seven major milestones. Milestones 3, 4 and 5 represent construction phases I, II, and III respectively.



Gantt Chart

The full schedule can be found in the external file labeled "Project2_Budget_Schedule.xlsx."

ESTIMATED BUDGET

BUDGET OVERVIEW

The project budget was developed using top-down estimation techniques. As such, variances were calculated at -10/+25% to account for low- and high-end actuals. The budget will be refined using bottom-up estimation techniques and submitted for approval for each project phase prior to roll-out.

PROJECT BUDGET

ABC Furniture Company - Warehouse Budget

Project Lead: Khoa Truong

EXPENSES:					
LAND	**UNITS**	**$/UNIT**	**Est. Cost:**	**Low End Cost (-10%)**	**High End Cost (+25%)**
Plot of Land* (unit in acres)	3	$750,000	$2,250,000	$2,025,000	$2,812,500.00
Building-Only City Permit Fee Commercial Building+	1	$8,426	$8,426	$7,583	$10,532.16
Property Tax (7.7%)	7.70%		$173,250	$155,925	$216,562.50
Total Land Expenses			$2,431,676	$2,188,508	$3,039,594.66
MATERIALS~	**UNITS**	**$/UNIT**	**Est. Cost:**	**Low End Cost (-10%)**	**High End Cost (+25%)**
Concrete - foundation (cubic yards)	1,800.00	$ 145.00	$ 261,000.00	$ 234,900.00	$ 326,250.00
Lumber - walls (per board foot)	100,000.00	$ 0.42	$ 42,000.00	$ 37,800.00	$ 52,500.00
- shelving (per board food)	80,000.00	$ 0.42	$ 33,600.00	$ 30,240.00	$ 42,000.00
Steel - main structure	100,000.00	$ 21.00	$ 2,100,000.00	$ 1,890,000.00	$ 2,625,000.00
- roofing (1" lip around edge)	101,747.00	$ 21.00	$ 2,136,687.00	$ 1,923,018.30	$ 2,670,858.75
Insulation (per sq. foot)	100,000.00	$ 1.73	$ 173,000.00	$ 155,700.00	$ 216,250.00
Plumbing + Electrical wiring (per sq. foot)	100,000.00	$ 2.00	$ 200,000.00	$ 180,000.00	$ 250,000.00
Misc. Materials - nails, screws (per pound)	2,000.00	$ 28.00	$ 56,000.00	$ 50,400.00	$ 70,000.00
Total Materials Expenses			$ 5,002,287.00	$ 4,502,058.30	$ 6,252,858.75
EQUIPMENT	**UNITS**	**$/UNIT**	**Est. Cost:**	**Low End Cost (-10%)**	**High End Cost (+25%)**
Excavator Rental (per day)	40	$ 900.00	$ 36,000.00	$ 32,400.00	$ 45,000.00
Bulldozer Rental (per day)	90	$663	$ 59,670.00	$ 53,703.00	$ 74,587.50
Forklifts	2	$ 29,000.00	$ 58,000.00	$ 52,200.00	$ 72,500.00
Skidsteer	180	$ 190.00	$ 34,200.00	$ 30,780.00	$ 42,750.00
Total Equipment Expenses			$ 187,870.00	$ 169,083.00	$ 234,837.50
LABOR	**UNITS**	**$/UNIT**	**Est. Cost:**	**Low End Cost (-10%)**	**High End Cost (+25%)**
Labor cost (per sq. foot)	100,000	$ 34.00	$3,400,000	$3,060,000	$4,250,000
Total Labor Costs			$3,400,000	$3,060,000	$4,250,000
OTHER EXPENSES	**UNITS**	**$/UNIT**	**Est. Cost:**	**Low End Cost (-10%)**	**High End Cost (+25%)**
Insurance (annually)	1.25	$ 1,000.00	$1,250	$1,125	$1,563
Waste management (per month)	14.00	$ 1,401.04	$19,615	$17,653	$24,518
Environmental Remidiation	1.00	$ 4,600.00	$4,600	$4,140	$5,750
Security/Surveillance	1.00	$ 14,000.00	$14,000	$12,600	$17,500
Inspections (per sq. foot)	100,000.00	$ 14.00	$1,400,000	$1,260,000	$1,750,000
			$1,439,465	$1,295,518	$1,799,331
		Grand Total:	$12,461,297	$11,215,168	$15,576,622

The full project budget can be found in the external file labeled “Project2_Budget_Schedule.xlsx”

QUALITY PLAN

QUALITY OVERVIEW

Quality is one of the essential factors in our project. Because having high-quality materials and aesthetics is our priority in ABC furniture, we have a quality plan that will ensure delivering the best quality. To provide quality, we plan to use benchmarking performance tools by contrasting various models under different conditions to determine which one has better quality and durability.

QUALITY MANAGEMENT TOOLS

Cost Benefit Analysis

Cost-benefit analysis is a tool we also plan to use in order to provide a high-quality project. This will help us deliver a project that is cost-friendly and a good quality product. Which means we will look at different materials then do a comparison on quality and cost. We want to meet the customer's needs without exceeding the budget. So, by using cost-benefit analysis we can balance both the quality and customers need to meet at a certain point where it is cost-efficient, high quality and meets customer's standards.

Information Gathering

Interviews and brainstorming would be extremely beneficial to our project's quality and the resources we are using. This will enable us to gather information from various sources, ensure that the requirements exceed the expectations and build a strong base. Additionally, it's always beneficial to interview more than one stakeholder in order to examine different expectations and discuss various matters that can work towards better quality.

Data Analytics/Visualization

Representing the data is an important step in monitoring the quality and performance of our project to find any errors and setbacks. We plan to use flowcharts as it's very useful in these cases. As well as using mind maps, logical model data, and matrix diagrams to create practical, simple-to-read charts that allow us to determine performance and monitor data patterns.

Non-Conformance Management

We must take a number of actions if something unexpected or unplanned, such as a mistake or defect, results in a nonconformance to quality. First, the management team will be looking at the project's quality and conducting an annual evaluation to determine if there are any symptoms or signs that might cause a quality issue and resolve it right away before it causes a bigger issue. This is done to avoid or minimize the cost of nonconformance. Additionally, internal audits are helpful in gathering information about performance and quality, allowing us to compare and pinpoint any issues that must be resolved immediately in order to prevent future quality problems. This information will assist us in starting a Non Conformance report that will outline the problems, their causes, how to avoid them in the future, and the steps that will be taken. Considering all of these measures will enable us to keep up a high standard of quality while lowering or preventing the cost of nonconformance.

R E S O U R C E P L A N

RESOURCE REQUIREMENTS

Internal Resources

The only resources this project will need to utilize from within the organization are Apryl Gennings from the finance department, Chris Morris from Human Resources, and Mark Kilpack from the IT department. The project will only need them for about 8 hours per week to make sure all of the finances are in order for the project and Chris with Human Resources has made sure all of us on the project management team are following the rules and regulations with the involvement of sub-contracts for the construction of the warehouse.

As the project goes on, the need for Apryl & Chris will decrease after the first 6 months of the project. Apryl may need to be involved in certain project meetings after 6 months. The amount of time we need from both departments shouldn't put a strain on the staffing of the department. Apryl and Chris should be able to continue on with their daily tasks along with us utilizing them for this project.

Mark will not be needed until the last phase of the project (Installation & testing of the supply chain management software). Mark will be needed for a month to ensure the software has been installed and is running correctly before we have the warehouse fully running. February of 2024 is when Mark will be working on the IT part of the warehouse. Staffing in the IT department will need to be addressed if there isn't any other person in the IT department who can cover Mark's tasks while he is working with us on the project. The rest of the staff we will need for this project will be subcontractors we will need to hire. For example, machine operator, elections, plumber, etc.

Resource	*months 1-6*	*months 6-12*	*months 12-18*
Apryl Gennings, Finance	est 8hrs/week	est 2-4hrs/week	as needed
Chris Morris, HR	est 8hrs/week	est 2-4hrs/week	as needed
Mark Kilpack, IT	as needed	as needed	est 8hrs/week

External Resources

The construction company we have hired is Warehouse Construction Inc. The CEO of the company is Dave Allippa. The reason we ended up going with this company is because Dave assured us that he has the skilled and knowledgeable workers that are needed for this type of project. This has been proven to be true with the research the project management team did on this and all the other companies we looked at for this project. His company has a high satisfaction rate with customers, has an "A" rating with the better business bureau, and is fully licensed and bonded. They are confident the project will be done by the end of May of 2024.

RACI Requirements Assignment Matrix

Below is the RACI chart that will be used during the project.

	Project Team Member						
Activity	Khoa	Krista	Nancy	Leila	Thikra	Mark	Dave
Foundation	C	A	A	C	C	I	R
Framing	C	A	A	C	C	I	R
Wiring	R	A	C	I	I	I	C
Plumbing	I	C	R	R	A	I	C
IT	I	I	A	A	C	R	I
Testing	A	R	I	I	R	A	A

INTERNATIONAL FACTORS

The only International factor the project needs to be aware of is the Chinese New Year. That holiday starts in January, and doesn't end until Mid-February. This can cause a possible delay because we are to receive the racking and workstations from a supplier that is located in China. As long as we have the racking and workstation being shipped in December we can store them in the part of the warehouse that is completed as storage until we start installing the racking system and the workstations. This responsibility will be Harriet Upp who is the Director of Supply Chain & Logistics for ABC Furniture.

COMMUNICATION PLAN

COMMUNICATION OVERVIEW

Formal Communications

The project management team will be communicating with Derek Westfall (CEO) and Anna Littical (CFO) via email weekly about the progress on the construction of the warehouse.

Monthly project meetings will include Derek, Anna, project management team, Dave Allippa (Warehouse Construction Inc.), Harriet Upp (Director, Supply Chain & Logistics), Colin Sik (Director, Human Resources), Dee Zynah (Simple Structures Design), and Lee A. Sun (Furniture Freight Forwarders). These meetings will also include various stakeholders as dependent on the current project phase, and the major players in this meeting will also likely change the further the project progresses.

The project management team will have weekly meetings with Dave from Warehouse Constructions Inc. to make sure the project is on schedule for the completion date.

Informal Communications

Most of the communication about this project will be through email to make sure we have documented records of progress and possible problems that may accrue during the duration of this project. This form of communication will be daily to weekly depending on where we are at in the project.

Internal Team Communications

The project team will meet with the project manager daily to share status updates, performance metrics and bring up any issues or help needed items. To make sure nothing is forgotten we will be sure to be talking to all the sub-contractors via phone or face to face as needed throughout the project to make sure we are aware of everything that is happening. As outlined in the team's Service Level Agreement (SLA) each member of the project team is responsible for keeping the project manager as informed as necessary to confidently answer any ad-hoc questions from Derek or Anna about project status.

In addition, the project management team will utilize Microsoft Sharepoint to manage and disseminate all project documents, including this project plan, project charter, change management logs, risk registers, lessons learned register, and any other formal documentation produced by the project team. Any changes to this communication plan should be documented on a formal Change Control Request Form and approved by the project manager to ensure all audiences/content stay within reasonable scope and nature.

R I S K P L A N

RISK OVERVIEW

Our team has identified potential risks and outlined how we intend to prevent and mitigate such risks from affecting our ability to execute this project successfully and on-time. There are four major risk categories as outlined below.

RISK IDENTIFICATION

Technical/Quality/Performance Risks

Labor issues are our primary performance risk. Employee shortages can cause fewer options for skilled laborers and overworked employees. This can cause on-the-job injuries and high turnover. In addition, our team has not executed a project of this size or scope which can cause technical risks. To ensure that we hire and retain qualified labor we will pay 20% more than the going rate in the area for this line of work, minimize overtime and provide additional breaks beyond the minimums required by law. Due to supply chain shortages, finding quality building materials without delays or flaws may be challenging. We intend to purchase materials with advanced notice from vetted and trusted sources and have increased our budget for materials to plan for these costs accordingly. Our Operations Analyst, Nancy Cabrera, will assume leadership and support in this category of risk management.

Project Management Risks

Running over our budget is a risk that can happen quickly and unexpectedly. We have included a contingency reserve in our budget and provided low/middle/high-end estimates to prevent running over our expected budget. Project delays can be caused by poor time management, so we've included a buffer throughout each section of work to ensure any delays can be managed without affecting the next phase of the project. Communication is key to ensure all internal and external stakeholders are aware of of project status and that milestones completions are adequately signaled for follow-on activities. Our team created a communication management plan that details how and when communications will happen and how all project documents will be shared. Our Systems Analyst, Leila Cearley, will assume leadership and support in this category of risk management.

Organizational Risks

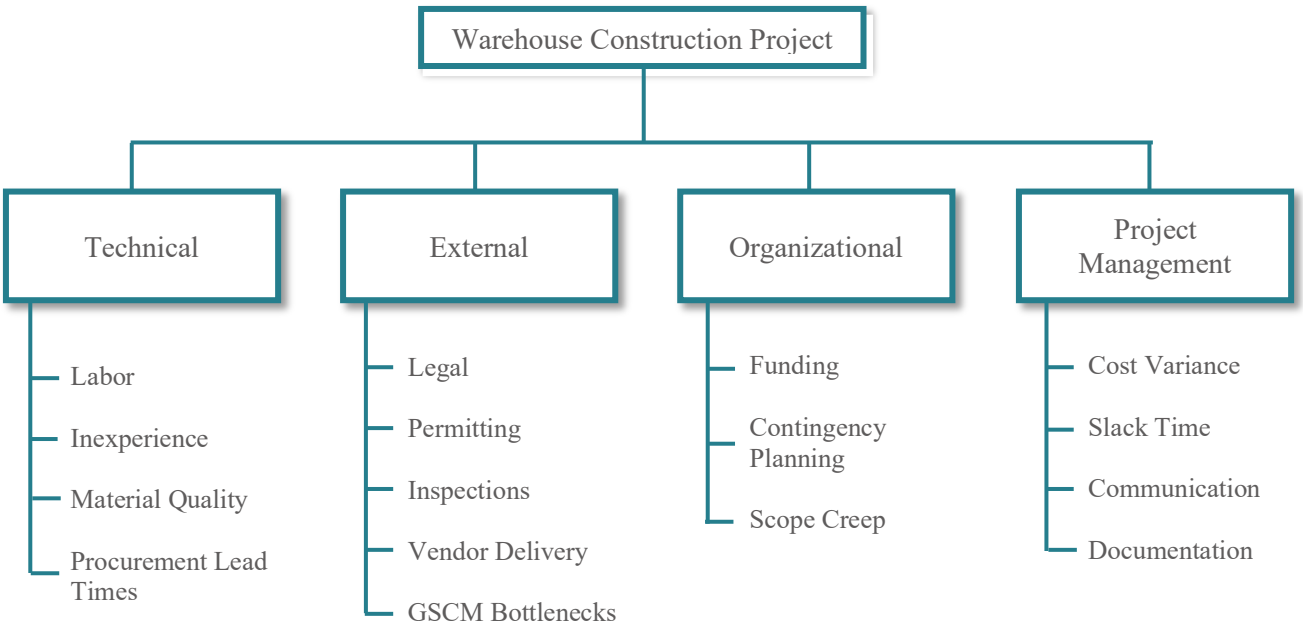
Poor management of a project overall can cause a ripple effect should things start going not according to plan. To keep disasters to a minimum, we've identified potential risks and written a risk management plan to ensure that we aren't surprised by any mishaps and have a contingency plan in place. Additionally, we've created and Change Control Request form and developed a change review and authorization process to keep scope, cost, and schedule creep to a minimum. Potential funding issues or disruption is a potential risk we are watching carefully. Our Finance Analyst, Thikra Al Badi, will assume leadership and support in this category of risk management.

External Risks

Legal, permitting and inspections issues/delays will be minimized because we've identified all building and permitting laws & requirements ahead of the project so we can comply with all regulations without

the project stalling. To prevent hiccups and delays with our vendors issues, all equipment rentals and purchases will be contracted through reputable local businesses to prevent shipping and availability delays or cancellations. Supply chain shortages continue to be an issue, and our Business Analyst, Krista Graham, will assume leadership and support in this category of risk management.

RISK BREAKDOWN STRUCTURE



SWOT Analysis

Strengths	Weaknesses
Competitive advantage: only warehouse in area that can store the volume we can Ability to execute on-time furniture delivery Storage limits will increase, allowing more movement of product easily	High up-front cost of building warehouse Competitors can enter market with competitive pricing Contract requirements/missed deadlines
Opportunities	**Threats**
Continued expansion for additional contracts with other organizations Ability to accept additional orders and increased volume from existing customers	Regulatory changes and changes to construction laws Supply chain issues Inflation; changes in budgeted costs Truck driver shortages can cause delays

P R O C U R E M E N T

When we think about a contract, we want to choose something that is flexible that would help us reduce our risk, in which a short-term-friendly agreement would be the best option for us. In regards to this project, we have chosen an agreement through FPIF, which stands for fixed price incentive fee. This is a contract for contractors, as its focus is to setting firm target cost, target profit and target adjustment formula, which helps mitigate any risk on our end, allowing contractors to assume an appropriate share of risk. Therefor, and FPIF contract will give us the opportunity to establish a price ceiling that would help us reduce the risk of paying any additional cost that is more than planned. Being able to establish reasonable pricing will help us reduce any government exposures from the overall cost. An FPIF will also help encourage contractors with an increase in their profit percentage by help reducing and price below target. This encouragement allows sellers to finish early and surpass any agreement upon metrics, such as quality based metrics. Being able to have these types of incentives will motivate the contractors, meaning task will be finished in a timely manner. By having this great addition with FPIF, revenue and opportunities will be more open for both ABC Furniture and our sellers.