**Response to A:**

LION Group Inc. (formerly Lion Apparel) is a private, family owned company based in Vandalia, Ohio. LION engages in the production and distribution of apparel for firefighters, police, emergency services, government agencies, and military organizations. It provides turnouts, helmets, station wear, CBRN (Chemical-Biological-Radioactive-Nuclear) gear, protective gloves, technical footwear, and accessories for firefighters and rescue professionals; a line of personal protection and training garments, and tactical rescue stretchers for law enforcement officers, academy students, and instructors. The company also designs and operates customized lifecycle management and supply chain solutions for military, DoD, and government agencies. It markets its products through a network of dealers and its Internet store in the United States and internationally.

LION was founded in 1898 and has been increasing its presence in the market ever since. Originally, the company was focused more in the market of general apparel and clothing. However, in its more than one hundred year history it has made entry into the market of providing uniforms and protective equipment for public service officials. In 1970, LION officially entered in the fire service market by acquiring the Janesville Company. The Janesville band name is still very popular among the fire service members today, in fact because of its name recognition LION still sells turnout units under the Janesville name. LION’s primarily sells and manufactures personal protective equipment (PPE), since its acquisition it has continued to grow in size and market share. In 2012, LION became the world’s largest manufacturerof structural firefighting personal protective equipment (PPE), led by its fourth generation family owners.

The organization is divided into three primary divisions: LION Safety Resources Group (LSRG), LION Vallen Industries (LVI), and LION Training Resources group (LTRG). The LVI division of LION operates the customized lifecycle management and supply chain solution for military, DoD, and government agencies. LTRG provides digital fire safety training to fireman across the world. LTRG was acquired by LION in 2013 and has helped to compliment LION’s service offerings to fire servicemen. LSRG is where the manufacturing of PPE for both law enforcement and fire service is performed. Additionally, LSRG provides a service known as LION TotalCare which offers professional laundry and repair services for turnout gear. LION TotalCare satisfies compliance with a law in many states that requires fire PPE to be serviced after so many days. To comply with the regulations, special care and treatment must be performed by authorized people and special equipment.



LSRG manufactures PPE among the following product lines: LION Janesville®, LION Helmets™, LION Protective Gloves®, LION Technical Footwear™, LION StationWear™, LION CBRN™, and LION TotalCare™. Two of the most popular products LSRG manufactures is the V-Force Turnout Gear and the Super-Deluxe Turnout Gear.

LION has two primary competitors in the fire PPE market: Morning Pride and Honeywell. LSRG is able to provide a service to its customers that their competitors are not. LION offers the option of completely customized turnout gear to its customers. Often times because different departments carry different equipment it might be necessary to add certain pockets or clips to the turnout unit, LION will customize each unit that the department orders to their satisfaction. While this has allowed LION to gain customers who desire customized turnout gear it has also resulted in an extremely complicated order entry and manufacturing process. The complications in these two areas have resulted in a close to 90 day lead time needed for custom turnout gear. This represents a significant problem for LION’s customers, they must decide if the customized turnout gear is worth the 90 day wait time or if they should settle with one of LION’s competitors. If LION and LSRG are going to remain the world’s largest manufacturer of fire PPE it must conduct a thorough review of its internal business processes to reduce the lead time on its PPE gear.

**Response to Question B**:

**LION’s As-is Purchasing Process – Information Technology**

LION’s as-is purchasing process involves several actors in several different functional areas of the organization. As often is the case in large organizations several functional divisions of the organization have been “siloed” and left to conduct their own operations, purchasing is one of those areas. The organization is top heavy in its management, there are several layers of Vice Presidents which make it difficult for the company to fully leverage the centralization that their current ERP system is intended to provide. The areas of the organization that have their own VP have been conducting their operations without the governance of the entire organization’s structure, this has resulted in business processes being decentralized.

To gain an understanding of the purchasing process and all of its inefficiencies we have to look inside each of the functional areas of the organization. The inefficiencies will become clear after the current decentralized process is documented in each of the areas. The first area of purchasing is in the Information Technology Department. The IT department is made up of fifteen employees, of those fifteen the IT leadership includes a Help Desk Manger, the Senior Director of IT, and the Chief Information Officer. All three of these leadership positions are actors in the IT purchasing process. The process begins with an informal request being made to the leadership team members. The informal request is usually submitted via e-mail. The request details are not specific and there is usually is a back and forth communication to gather some more specific details. The leadership member needs to know for tracking purposes whether the spend is related to a project, if it is related to a project the request is handled by the Senior Director of IT otherwise the item can be handled by the Help Desk manager. The beginning steps of the process are shown in the figure below.



The idea between having two separate actors for approval is so that routine expenses can be handled by a lower tier leader, in this case the Help Desk manager. Small equipment items or office supplies are items that would ideally be handled by the Help Desk manager as opposed to the Senior Director of IT. The Senior Director of IT is a member of the LION PMO, it is important that spends that are occurring for a project are accounted for correctly in the projects budget. This is precisely why the senior director of IT is in involved in all project spends.

Regardless of whether the spend is for a project or a miscellaneous request there must be a vendor established inside the system. Eventually the resulting order will have issued a purchase order, but the vendor relationship is established to identify individuals within the organization who are allowed to issue purchase orders on the company’s behalf. The process of establishing a vendor occurs after a final quote has been obtained by the person making the purchase request. The accounts payable department is responsible for establishing that relationship with the vendor and maintaining it. The vendor information and payment agreements, such as NET 30 or NET 15 etcetera are recorded in the vendors profile and stored in the system.



The next steps in the purchasing request deal with the dollar amount that is involved with the purchase. If the purchase request is below the $25,000 amount the help desk manager is allowed to create the purchase order and complete the order with the vendor. However, if the order exceeds $25,000 a capital expenditure (CAPEX) request must be made in accordance with LION’s policy. The Senior Director of IT is will create the paper work and justification for the spending that is associated with the high dollar amount. It would be unusual for CAPEX’s to be made outside of a project, however there can be exceptions. A project is not the only justification for spending money inside the organization. The Senior Director of IT is allowed to approve expenses provided they are approved via the CAPEX approval process. (Note: the CAPEX approval process is not in the scope of the IT purchasing process). The CAPEX is prepared and submitted to the Chief Information Officer (CIO), if he can approve the purchase and then submit it to the CFO for another, final approval.

After the CAPEX has cleared its approvals the purchase request is handed back to the Senior Director of IT who will then prepare the purchase order and send off to the vendor providing the goods or services. The vendor will submit the payment to the accounts payable department, after the AP department within accounting has verified that the goods/services have been received the payment will be issued.



**LION’s As-is Purchasing - Manufacturing**

As stated previously, the purchasing process is very distributed, to highlight the inefficiencies we have found and documented a very similar process that exists in the Manufacturing Department as it relates to purchasing. The only significant difference in the purchasing process that exists in Manufacturing versus IT are the actors involved. In the manufacturing department we have a plant manager to replace the Senior Director of IT and the VP of manufacturing to replace the CIO. The dollar amounts that are setup for approval are also slightly different, along with the dollar amount required for a CAPEX. The figure below is a complete representation of the Manufacturing’s purchase process.



**LION’s Purchasing Process – Reengineered**

The re-engineered purchasing process is intended to centralize the purchasing operations within the company. To implement the changes to the purchasing process there will need to be the creation of a purchasing department with its own dedicated resources. The intent will be to remove the purchase order creation or quote obtainment from the local actors such as the Help Desk Manager, Plant Manager, and Senior Director of IT. By offloading some of the purchasing operations these actors will be able to spend more time on their respective functional areas and less time on dealing with the various purchasing operations. However, it is not feasible to completely eliminate the leaders from the purchasing process. A purchasing hierarchy is still needed where dollar amounts of purchase requests are evaluated and approved by those actors who are responsible for a budget.

The new purchasing department will leverage the existing ERP system in place. They will be located at LION’s corporate headquarters location in close proximity to the account department. Many of the interactions that purchasing will have will be with the accounts payable department, therefor it is important that they are able to work closely together.

With a centralized purchasing department it will be much easier for the organization to have oversight of the various purchases that are being made. This centralization is one of the fundamental objectives of having an ERP system. The concern that the manufacturing plant is storing several cabinets full of purchase orders is now gone, we are able to ensure that the purchasing department is accounting for and storing all purchasing information in accordance with LION’s policies.

In our re-engineered process we have narrowed the approval process down to one decision point. The responsibility is on the purchasing department to ensure that spends have been budgeted for, and if not they will seek the approval of necessary approvers depending on the department the request originated from.

**Stages of re-engineered Purchasing process:**





**LION’s As-is Order Fulfillment Process**

The order fulfillment process is the central point of sales for Lion Apparel. The nature of orders and how they arrive to the system is important. LION’s process is unique because of the type of customization it offers to its customers. This is something differentiates LION from its competitors, its competitors are not offering customized PPE.

LION employs a team of regional sales managers (RSM) who cover wide areas of the United States. The regional sales managers rarely interact with the customer directly. The RSM works with a large “dealer network” to interact with the actual firefighters or departments. The dealers are supposed to gain information from the RSM on how LION’s products and gear work and how they can benefit the firefighter. The dealer is usually a retired firefighter who has deep ties within a fire department. When it comes time for and order

For an order to be placed, a customer has to contact a customer representative and send them specific designs for the apparel they want. What is so unique about these designs is that there hundreds, if not thousands of combinations. If a design hasn’t been created yet, the customer representative spends a large amount of time documenting the design specifications. Once these designs are documented, they are sent off to engineering where a separate process happens in which designs are checked against government standards. If the designs already exists, the order is sent to Inventory, where they check to see if it is a custom order. If it is, they wait on engineering. If not, inventory checks their total count and sees if there is enough on hand. If there isn’t enough inventory, the customer representative asks if the customer would like to continue with a late order. If not, the order is cancelled. If there is enough inventory on hand or if the customer would like to continue with a late order, two things happen: inventory sends what they have to shipping and a work order is made and sent to production. Production makes sure they have enough raw materials on hand to produce the order. If they don’t they create a materials list, send it to purchasing where accounting purchases the materials and then production receives the materials. Once production has enough materials, the produce the products and sends them to inventory. Inventory then sends what goods they have off to shipping for delivery and accounting receives a notice to invoice the customer.

The current as-is process lacks in a few ways. Firstly, the customer representative creating the custom design specifications takes too much time. The order entry process can take sometimes as long as one week to complete. Orders are usually submitted in bulk from different fire departments and can contain line by line customizations. Order entry specialists possess tacit knowledge of LION’s products, gear, and all of their different configurations. This presents a challenge for the organization, because the order entry team are more like order specialists. These employees can take as long as one year to be educated and brought up to speed on the different products and configurations. Another inefficiency is the wait time inventory has for custom designs, which is to be addressed in the Engineering process. Lastly, the lack of a purchasing department leaves production on its own to generate purchase orders to send to accounting.

**Order fulfillment Re-engineered**

By reengineering these inefficiencies, we have come across a great solution. It can eliminate the customer representative’s time spent on custom design documentation and order entry. Eventually, the order entry team can be reduced in size and be converted more into an order support role. A web portal will be created for the customer or dealer to fill out. This will be an interactive web application that keeps up-to-date with government standards and design constraints in order to shift the burden of custom design to the customer instead of the representative. Part of the plan will be to create LION University, a new training program that will be intended to educate the dealers in the dealer network with the tacit knowledge that is maintained in the order entry specialists. The resources that are freed up as a result of the efficiencies gained in the order entry team, can be assigned to a new role of educating the dealers on how to use the web application. This will be covered in the implementation plan in greater detail.

**Customer Ordering System (fulfilment and custom orders) Implementation**

Our main re-engineering philosophy goal, was to shave off time to fulfill custom orders. We couldn’t eliminate the custom orders all together since it was about 96% of the revenue of Lion. It was decided that we could only make the process of taking custom orders as efficient as possible. Our plan was to start up the Gear-Builder web application on the company’s site as an alternative way to accept custom orders from Lion’s customers. Using the web application will eliminate the need of Lion’s engineers to design and continuously check if this custom product meets government regulations. Now our engineers just have to see if the custom designs submitted through the application meet government regulations, and then accept or reject these designs based on how well the custom item meets the regulations.

The idea is to roll out the new custom ordering system using a Pilot implementation strategy. We choose this implementation strategy since this is a very unique ordering system, no other company has anything like it. Our customers will be able to create completely custom items where they can add stuff like pockets, size the pockets, and set the location of the pockets on a basic product model. In order for the new system to be effective, Lion’s customers need to use web application. Our plan is to have the Sales/Marketing department inform the customer that they can now use a web application to create their custom orders. The level customization that the web application has, might make it to be complicated for a user to use. To help our customer use our new application, Lion’s customer service people will be trained on how to use the web application. Lion has plans to create a Lion University, our plan is to have that university cover how to use the new Gear-Builder for customer service employees. Once customers know how to use the application, they might need to use Lion’s engineers less to design a custom item. Since less of Lion’s engineers are used to design a custom product for a customer, our plan is to have the engineers move into the R&D department. These engineers can now focus on adding new customization options to the web application, for example, researching and developing new fire proof materials that can be used in some custom products. This new system will be ran in a trial period, a long side the old system. After a year, we will look at the SMART metrics of the web application and see if it’s a viable solution. We can then change the web application or remove it based on its performance.

Lion already has the hardware needed to run the web application and the backbone to collect custom orders from a customer. We just have to create the Gear-Builder application, and make sure it runs with our current system. The Gear-Builder application will make use of an added bolt-on called Oracle Configurator, which allows the tracking of custom orders from the customer. Also, the Gear-Builder application will need an Enterprise Application Integration system where the data from the application will be translated into SQL that Lion’s custom order tracking system can use. We will develop the Gear-Builder application using the Evolutionary Development methodology, since we want to incorporate customer feedback to improve the system during its Pilot trial run. This means that we should have the final version of our application ready, after the pilot semester.

**Purchase Ordering System Implementation**

Our philosophy for improving the purchase ordering was to eliminate the individual purchasing in departments, and move to a standardized purchase order fulfilment process. The implementation we choose was the Big-Bang approach. This was done to minimize the effect of having two systems trying to fulfill one order at a time and avoid costly double orders. Our plan is to do a mix of hiring the managers from each department, which used to handle purchase orders, as employees of the purchasing department and hire new employees who specialize in purchase ordering. Training for the purchasing department can be done through Lion University for employees that need the extra training. There is no need to acquire additional IT hardware; our plan is to go through each departments list of suppliers and adding them into a central database for the new purchasing department. It is estimated that the purchasing department can be up a running within three months.