**Instructions**

This activity presents a case study of a 3D printer and printer cartridge company called 3DMall (fictitious). 3DMall has a patent on proprietary 3D printing technology and has decided to sell these novel user-friendly 3D printers and cartridges to consumers. The unique benefit to using 3DMall printers is that consumers do not have to design their own products by using complex scanning and design programs which require a certain level of technological expertise. Instead, they can choose to immediately print ready-made designs they find on 3DMall’s online store.

The designs in 3DMall’s store are provided by third-party organizations who submit these to 3DMall for sale. 3DMall hosts these designs, and consumers can browse and purchase them via the app or 3DMall’s store website. When a consumer purchases a design through the 3DMall store, they are purchasing a one-time use design from a third-party and using it to print the item immediately using their own printer. 3DMall receives a percentage of every purchase made in the store. Once a consumer has purchased a design and uses it, the design automatically deletes itself from their printer.

* Read the case study below and answer the multiple choice questions.
* At the end of the activity, the instructor will review the steps of the activity and share the correct answers for each question.
* This case study will be revisited in later activities.

**Case Study Information**

3DMall sells 3D printers and printer cartridges to consumers. The consumers are then able to print items using designs purchased from 3DMall’s online store. The store is full of designs sold to consumers by third parties. For each sale, 3DMall receives a percentage from the third party. Once a design is purchased, consumers can print out the product immediately on a one-time basis.

The printer cartridges have three materials of varying hardness: one is rubbery, one is flexible plastic, and a third is a hard durable resin. Items can be produced using multiple combinations of materials. Most designs are difficult to scan and reproduce because they use these various materials in different parts of the design. Cartridge sales are a high margin item while the printers have a low margin.

Demand for 3DMall’s printers and cartridges will initially be driven by consumers with little technology expertise as the devices are fully automated, self-explanatory, and can be controlled through a simple interface via app or website. When enough items are available for sale in the marketplace, this should generate a critical mass of demand for the printers because the products they can make will be inexpensive and available immediately.

Due to lower costs, the printers and the cartridges are currently being produced at a third-party plant in Thailand, and the products are initially being marketed in the U.S. and the EU. The organization’s suppliers are primarily in Thailand as well. The printers vary in size and features, but the same patented printer engine is used in each model. All printers use the same set of cartridges. The organization owns its headquarters and all of its regional distribution centers (DCs).

In launching this new line of printers and cartridges, 3DMall will sell them online, at third-party retailers, and through independent franchise stores. The organization expects demand to ramp up over time as their marketing message gains acceptance and as more third-party organizations start offering additional designs in the store. Currently a shoe seller and an art seller are among the vendors. For the initial few years 3DMall expects demand to be highly variable both in total and by region.

The organization decides to start with a large order of each printer model and a large order of cartridges. This should minimize production cost through high capacity utilization and minimize transportation costs to the regional DCs by contracting with carriers to deliver full container loads. The amount sent to each DC and retailer is based on a strategic forecast since it is a new product line. Going forward each will replenish inventory based on actual sales and their own predictions of demand during the lead time required for replenishment. Lead time is two weeks between each stage in the supply chain.

Once you have answered all of the questions, click the **Summary** button at the bottom of the screen to view your final score and complete this activity.