**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 is a start-up private organization with some large investors. They used this money to fund the initial in-house research and development and design, build and staff a headquarters and a number of regional DCs with light manufacturing capability, and pay for outsourced manufacturing, transportation, and supply. They also leased a cloud-based ERP system early on and spent some time developing a less hierarchical organizational structure called a network structure that focuses more on end-to-end process efficiency. Since all of the employees are new, human resources staffed key roles with persons who had experience using this software system and were comfortable working in a more empowered, collegiate environment.

The organization’s founders also felt that part of their mission needed to be to sell sustainable products to support their environmental and fair trade priorities. To this end, the initial research and development team used “design for the environment” methodology by involving many internal stakeholders in the design process. They also developed an ethics and sustainability policy for manufacturers and suppliers. The manufacturer and suppliers agreed to these policies in the initial contract, but, at this time, it is unclear whether these policies are being put in practice, especially as the organization has started to grow rapidly and the manufacturer added its own subcontractors to increase capacity.

Growth in sales in the first three years has been significant. The product and the marketplace are gaining users, but, according to market research, growth would be even greater if there were more designs in the online marketplace. However, too many firms are still skittish about losing traditional sales to this new method they are participating in, and others are also upset that start-up firms have sprung up using this medium to compete with them directly.

In general, the independent retail franchises are growing steadily but some did close in part due to overambitious inventory ordering relative to sales. Revenue in the first year was US$60 million, but they had total expenses of US$80 million for a net loss of US$20 million. Revenue grew by 20 percent in the next year to US$72 million, and, due to some one-time start-up expenses, total expenses fell to US$70 million, for a first-time net profit of US$2 million. The five-year strategic forecast predicts that revenue will continue to grow by 20 percent per year for each of the next five years. However, further investments will be needed to increase capacity, and most of their expenses are variable rather than fixed, so total expenses are expected to rise each year as well for an increase in net profits of only 10 percent per year (i.e., US$2.2 million expected net profit in the third year of operations).