

How 3D Capture Technologies Benefit Retail Marketing

Jonathan E. Cope

School of Design and Creative Technologies

University of Texas at Austin

Austin, Texas, USA

Jonathan.Cope@utexas.edu

Abstract - Three-Dimensional (3D) technologies and depth-tracking technologies continue to rapidly grow in our current era, especially as game industries advance and innovate. After the deliverance of motion controllers, Augmented Reality (AR) played a key role in the entertainment industry – while also creating more realistic virtual environments. Numerous platforms, software and hardware, learned from the entertainment experiences fabricated and led to the generation of libraries and source codes for image tracking. Consequently, specific peripheral equipment for 3D vision and depth were introduced, such as Kinect with the Microsoft Xbox, and “fake” 3D vision vastly widespread through ubiquitous dissemination of webcam filters and lenses – such as those featured in Snapchat. Following the common trend, other technological giants such as Sony, Intel, and Razer have developed their own counterparts in the field. Furthermore, companies and manufacturers have not only specified the usage of such equipment for games and entertainment, but also that it is rather gradually becoming increasingly popular in the retail industry. Sources – such as one written by Poon, Yeung, and Pang – demonstrate that these emerging technologies have the potential to become useful in introducing new experiences to the realm of marketing a physical product. Three-Dimensional scanners have great advantages over other technologies to create visualizations quickly and efficiently; however, many factors must come into place. Decision-makers often encounter the limitations of uses, such as budget, scanning distance ratio, object size limitations, and more. On the other hand, creating virtual objects have been proven throughout the recent years to be an engaging experience for customers to browse and visualize products and components, whether physically at the store, or from the comfort of the consumer’s own home. Manufacturers and large-scale corporations have already moved in the direction of using augmented reality to apply glasses designs and makeup products. Thus, game technologies merge into the retail industry. Since these companies use 3D depth cameras for these purposes, the potential is great for other retail companies to follow and benefit.

Index Terms - 3-D Scanning, 3-D Depth, Depth-Sensing Cameras, Photogrammetry, Retail Marketing and Visualization

1. Introduction

1.1 Description

In a modern society, where smart technology aids simple and complex daily tasks, there are still many factors that contribute to a decline in subscriber and customer base for stores and businesses. As such, the economy unfortunately faces unanticipated circumstances, for instance a stock market crash, which inevitably leads to a scarceness of product confidence as well as customer purchases. Alternatively, an influx of supply ultimately leads to a decline in demand of a product or service. A company undoubtedly will suffer from a net decrease of revenue if they cannot construct a strategy to sell or trade their surplus product. Where the retail industry is lacking, however, is in finding ways to advance pre-existing technologies for product advertising, digital visualization, marketing, and other related purposes. Accordingly, one feasible example of opportunity would be through the use of three-dimensional capturing devices, like the Azure Kinect, Intel RealSense Technologies, or even arrays of digital single-lens reflex (DSLR) cameras.

1.2 Background (Historical Use and Markets)

With knowledge of our current, long-standing free market economy, or Massachusetts’ first paper currency used to pay the soldiers of King William’s War in 1690 [1], one could presume and support the fact that paper currency has been used predominantly for centuries, if not longer. This currency has remained resolute to pay for food, clothing, gift items, and other goods and services. In less than half of a century, civilization has witnessed countless innovations,