ANALYSIS AND DESIGN OF INVENTORY SYSTEM IN BOTTLED WATER DISTRIBUTOR (PT. TIRTA VARIA INTI PRATAMA)

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Abstract

Objectives This thesis is created in order to analyze inventory, tracking and tracing problems found in the company where the thesis is proposed and design solutions for the company to overcome their problems. Elimination of out-of-stock, enhanced tracking and tracing, as well as enforce FIFO concept are the objectives of the thesis. With the proposed design of the new system it is intended to bring turnabout to the company current system, automating the current process and assist the company to build a robust infrastructure by cultivating either RFID or barcode to help the company determine the competitive advantage in their line of business.

Method The methodology that will be used to analyze the problems of the company would be by using semi-structured interview, which is an amalgamation of structured and unstructured interview to some managers and assistant managers of PT. TVIP. Furthermore, the methodology that will be used as a guidance to design both current and proposed solutions would be by using data flow diagrams and use cases.

Result Amongst the two solutions proposed to the company, are RFID and barcode to support the company inventory system. From the analysis done in the thesis, it can be proven that RFID is more lucrative compared to choosing barcode, as can be seen from RFID benefits, such as dynamic updating, does not require line of sight and applicable in harsh environments. Furthermore, RFID is also a better long term investment compared to barcode, as can be translated from the analysis that after fifth year and above, RFID provide sumptuous amount of profit compared to barcode.

Conclusion After considering their options, the company opted barcode as a viable solution for their problems, mainly due to the trust in technology and more affordable price compared to the aspiring RFID technology, which they are not certain of the technology and afraid of the risk, whereas their concerns can be justified to assure them that RFID is a better investment.

Keywords: RFID, barcode, inventory system