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Tesis

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ABSTRACT

The purpose of this study focuses on the development of a technology module based on IOT and QR technology, which can comprise thousands or hundreds of pages printed daily. First, we identified the strategy and objectives of our module for a deployment environment, from a consumer perspective in relation to the print service based on emerging technologies. Next, we established the resources used in the development of our module through a structured matrix for the proper management of resources. Then, we collected quantitative data on how long it would take to perform a usual printing (without the module implementation) and to perform the printing with implemented technological module. Data collection and methodology were carried out at Universidad Continental facilities in Huancayo city. The results obtained lead us to affirm that there is a significant difference in the mean printing times between technological module and the ordinary one. With this, we can conclude that use of technological module really had a significant effect with respect to time, considering also that this module is based on emerging technologies as highly permissible projects in today's market.

CCS CONCEPTS

• **Networks** → Network types; Cyber-physical networks; Sensor networks.

KEYWORDS

Mobil app, artifact, QR code, print

1 INTRODUCTION

Today the field of university printing jobs can involve thousands or hundreds of pages printed daily. These jobs can be expensive and tedious. The digital printing market in Peru represents approximately $5 million dollars per year with a growth trend. The process is ideal for low volume printing projects, which need to have extremely short delivery times and low production costs, since one of the main advantages it offers is the almost immediate availability of printed material [1]. On the other hand, according to Enrique Baca, general manager of the BDV Group, the volume of printing continues to grow worldwide, due to the appearance of new types of jobs, more applications and new product versions. On the development and improvement of the emerging digital printing technology, he said that nowadays customers in general want all their jobs in faster turnaround times, with short-run applications and affordable prices [2].

So too, the deployment of the Internet of Things (IoT) promises to revolutionize the technological landscape thanks to the unprecedented connectivity of billions of devices, across many sectors, such as transportation, enterprise, healthcare, agriculture, and homes, to name a few [3].

We also have the Quick Response (QR) code, this is a popular type of two-dimensional barcode [4], which is a machine-readable optical tag with the advantages of reading speed, error correction capability and richness of data formats [5]. Taking advantage of the development of mobile Internet, QR code is widely used to transmit complex digital information in the physical world, such as payment information, contact cards and advertisements [6].