

Business Diagnostic Technology for Sharing Value and Social Innovation in One-person Companies

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Abstract— One-person companies largely support the economies of developing countries such as Colombia. Their commercial effectiveness need of creating strategies in Social Innovation. Our purpose in this paper is to propose a technological tool for characterizing companies either one-person, individual or family business. Our goal is to formulate a social shared value model for Colombian neighborhoods that it would search the sustainability for one-person companies. In the first part, we did a literature review about Social Innovation and the questionnaires in the state of the art to diagnosis. After that, we show the software architecture design and we validate it using the quality metrics. The technological tool could be used, by owners of restaurants, supermarkets, shops and drugstores in a neighborhood by means of diagnostic questionnaires. Our Business Diagnostic Tool will be identifying the main aspects, activities and processes that would be able to secure value add into one-person's companies chain value that allow its sustainability in the time. Percentage results of the metrics evaluated from the attributes of interoperability, traceability and install ability showed a percentage over the average in the number of interface data that has been applied according to the specifications and the number of data exchanged between different components.

Keywords— *software design, software architecture, chain value, one-person companies, social innovation*

I. INTRODUCTION

One-person company do not have more than from five to ten employees [1]. In some emergent countries as Colombia, Mexico, Guatemala, etc., the one-person companies have been considered a kind of informal employment for living after 40's. According to National Administrative Department of Statistics in Colombia, those companies have decreased from 51% in 2011 to 47% in 2017 [2] what have indicated that the unemployment rate increased. For instance, in 2017 while the unemployment worldwide is 5,8% [3], the Colombian one is 8,9% [3], [4]. One-person owners have affirmed that this falling could be due to lacking resources, networking and processes enough.

In Colombia, thirty-one percent of Colombian one-person companies are represented by commercial activities, hotels services and restaurants, the 22% in social and personal services, the 15% in manufacturing, and the 13% in rental of immovable. Fifty-eight of them are working in business premises. Ninety-three percent of those people pay by oneself their health services, but they do not have a secure for retirement. Additionally, the highest education level received is high school by owners architecture of [2]. This research has been focused in to stop this inequality behavior creating strategies for minimizing costs and optimizing resources for neighborhoods placed in Bogotá, Colombia. Then, our Social

Innovation Diagnostic proposed is for applying in restaurants, supermarkets and shops and drugstores.

We selected Bogota's neighborhoods, because Bogotá (40,5%), Manizales (41,8%) and Medellín (42,1%) are the Colombian big cities where exist the lower informality employment indexes [3][2], [5]. Overall, this research, we can probe if those one-person companies have been disappearing due to lacking Innovation Social theories into them. But into this article, we are showing specifically the application design in which the owner one-person company will be able to fill online a questionnaire for identifying if his chain value is adding value or not. Nevertheless, *our proposal goes beyond, because the Business Diagnostic Tool goal is identifying the main aspects, activities and processes that would be able to secure value add into one-person companies?* Since, we want to help them after filling form. Therefore, at the end, the platform will send by email a report with those aspects that they need to improve and a visualization's graphic.

In the first part, we are explaining about Social Innovation Theories, after that we reviewed the diagnostic tools that has been used in small companies. In the last part, we are describing one-person Diagnostic Business Software Architecture in which you can find the use cases and its interphase explained.