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**INDUSTRIAL REVOLUTION 4.0 TRANSFORMATION:
CHALLENGES AND OPPORTUNITIES IN MALAYSIA
CONSTRUCTION INDUSTRY**

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ABSTRACT

In today's ever-changing era, the urge of having an advanced technology in construction industry is no longer an option but necessity. In fact, over the years several researchers suggested that the implementation of Industrial Revolution 4.0 is capable in improving the current condition of construction industry. This is when tools such as Drone, Building Industrialized Modelling (BIM), Internet of Things (IoT) and Artificial Intelligent (AI), Augmented Reality (AR) comes into play. Although the IR 4.0 road map had become the major driving force, there are still several challenges faced by Malaysian Construction Industry in adapting with the wind of change. Therefore, the purpose of this research is to identify the challenges and opportunity in implementation of 4.0 Industrial Revolution. Apart from that, this research also provide room for improvement for current situation, especially during the outbreak of pandemic. Consequently, a set of 120 questionnaires will be distributed to some part of Sarawak namely Kuching, Serian, Bintulu, Sibul and Miri via email to the construction industry in Sarawak.

(Keywords: IR 4.0, Opportunity, Challenges)

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TABLE OF CONTENT

ABSTRACT.....	i
ACKNOWLEDGEMENT.....	ii
TABLE OF CONTENT.....	iii
LIST OF FIGURES.....	vii
LIST OF TABLES.....	viii
LIST OF ABRREVIATIONS.....	x
CHAPTER 1: INTRODUCTION.....	1
1.1 RESEARCH BACKGROUND.....	1
1.2 RESEARCH PROBLEM.....	4
1.3 RESEARCH AIM.....	4
1.4 RESEARCH OBJECTIVES.....	5
1.5 RESEARCH QUESTIONS.....	5
1.6 RESEARCH SCOPE.....	5
1.7 RESEARCH METHODOLOGY.....	6
1.7.1 DATA COLLECTION METHOD.....	7
1.7.2 ANALYSIS.....	8
1.8 RESEARCH STRUCTURE.....	9
CHAPTER 2: LITERATURE REVIEW.....	10
2.1 INDUSTRIAL REVOLUTION CONCEPTS.....	10
2.2 THE FIRST INDUSTRIAL REVOLUTION.....	11
2.3 THE SECOND INDUSTRIAL REVOLUTION.....	12

CHAPTER 1: INTRODUCTION

1.1 RESEARCH BACKGROUND

In general, among other important sectors, the Building Industry (CI) is known to be one of the broadest flat industries. This is because the CI contributes to the growth of other sectors by supplying funds. Time, cost, and efficiency are three of the most critical performance factors to remember in the CI. In fact, Alaloul et al., (2018) stated that the construction industry is currently in the process of transitioning into a new industrial innovative age. This is known as the Industrial Revolution 4.0. (IR 4.0).

In general, the idea of Industrial Revolution 4.0 was first adopted by the German government in 2011 as a form of industrial development initiative. Among others who have contributed to this work are Bonilla et al., (2018). Furthermore, according to Terry et al., (2020) this technical breakthrough that connects humans and technology has the potential to blur the line between three entities: physical, interactive, and biological. Internet of Things (IoT), Artificial Intelligence (AI), robotics, new materials, energy storage, and quantum computing are manifestations of Industrial Revolution 4.0 (Skilton et. al., 2017).

Basically, this IR 4.0 would result in a major improvement in the CI's overall operation. This is due to the fact that, according to (Alaloul et al., 2018) the transition would aid in the conversion of the building industry to specialised technologically produced trades. In most cases, IR 4.0 is still in its early stages, and the CI is still lagging behind other industries such as the manufacturing sector.

In Malaysia, Significantly, the Ministry of Works/Kementerian Kerja Raya (KKR), in partnership with parties with interests in the building industry, is designing a Construction Strategy Plan 4.0 (2021 – 2050) to assist the construction industry in