Second-movers' advantage of utilizing Big Data to enhance sustainability performance: the case of elevator industry

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Abstract — Increasing digitization of contemporary business under the Internet era has created the big data phenomenon. Such a phenomenon would present opportunities and challenges for enterprises to compete vigorously under an environment driven by timely management decision that hinges on intelligence to predict potential performance. There are new business models that exploit potentials to improve sustainability performance. Organizations could analyze differential wants and needs of specific customers in big data so as to develop strategies to tackle operational weaknesses and reduce unwise utilization of resources. First, this paper articulates a conceptual framework on second-mover advantages in light of the entrepreneurial opportunities with big data analytics. Such second-mover initiatives using big data analytics could be created by an enterprise seeking second-mover advantages within its organization or by a startup that attempts to unveil opportunities to improve operational performance with disruptive innovation within an industry. Second, we explore potential sustainability performance that can be enhanced with big data analytics for the case of elevator operators that serve the high rises. Energy efficiency can be improved through optimization of activity-based programming for specific needs of the end users. Enhancement of sustainability performance could be achieved with transfer of proven technologies, including the latest development of regenerative converter in the elevator industry.

Keywords—big data; second-movers' advantage; sustainability; elevator industry (key words)

I. INTRODUCTION

Digitization of contemporary business under the Internet era implies both opportunities and challenges for enterprises to compete vigorously utilizing data analytics to enhance managerial decision making and predict potential performance. With respect to opportunities, there could be new business models that exploit potentials to significantly improve sustainability performance. In particular, organizations analyze differential wants and needs of specific customers and formulate innovative operational strategies to tackle operational weaknesses and optimize utilization of resources. These are unexplored entrepreneurial opportunities for large, multinational enterprises to rebuild sustainable advantages that could be exploited with continuous through with big data analytics.

This paper aims to accomplish the following. First, building on a literature review this paper attempts to construct a conceptual framework on second-mover advantages anticipating the entrepreneurial opportunities with big data analytics. Such second-mover initiatives using big data analytics are leveraged by seeking second-mover advantages within an organization or by a start-up to unveil opportunities to improve operational performance while integrating disruptive technologies. Subsequently, through a case study of the elevator industry, we explore how sustainability performance could be enhanced with big data analytics for the elevator operations in the case of Hong Kong, a high dense city with high rises. For instance, energy efficiency could be improved through optimization of activity-based programming customized for the specific