



A Framework for Assessing the Impact of Potential Disruptive Technologies in Business

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Abstract

Current world affairs faces businesses with increased competitive challenges. Such challenges vary from the still economic recovery from the past pandemic to the endeavours driven by world conflicts, increasing energy and commodity prices, and inflation among others. With the tough competition businesses look for new manners to innovate and assure a competitive edge on their markets. Since ever, technology has been a major driver for competitiveness, and the acceleration in the development of new products and services just makes matters increasingly hard for most businesses. Top management and business leaders across all industries are faced with the management of scarce resources and funds, while simultaneously dealing with difficult choices on how to react to technological threats with potential to impact their businesses, sometimes with catastrophic impacts, as technological change has shown over time. Moreover at other times some apparent technological advantage my prompt business leaders to choose among alternative technological options. However, such decision makers sometimes lack a pragmatic framework to assess such potentially disruptive technologies.

This contribution proposes an alternative framework for assessing the impacts of potential disruptive technologies. It considers business relevant dimensions and was developed though research, following a critical thinking approach supported by alternative analysis techniques. The proposed framework has five dimensions: strategic, operational, tactical, technical, and organizational. Under the strategic dimension we find the political, economic, cultural, and legal factors as variables. Under the operational dimension we evaluate the following variables: performance, congruence, and opportunity. In the tactical dimension, the variables of interest are tactics, techniques, and procedures (TTP), as well as secrecy. Within the technical dimension we take into account maturity, performance, and interconnectedness. Lastly, the organizational dimension includes internal support, pacing gap, and cost as variables. Examples of historical disruptive technologies are provided. By analysing the impact of a

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specific technology across these dimensions and variables, the suggested framework helps determine whether the impact is null, moderate, high, or revolutionary. The suggested framework for evaluating the impact of potentially disruptive technologies is a helpful tool for informing policymakers, industry and business leaders, supporting decisions concerning capability development, technology investment, and additional strategic initiatives.

Keywords: competitiveness, disruptive technologies, framework, impact.