# Chapter 9
# Impact-Driven Productivity and Innovation With Unified Communication and Collaboration Technologies: Drivers to Be Addressed Across Global Regions

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## ABSTRACT

*The purpose of this chapter is to introduce research on the impact-driven productivity and innovation gains achieved through the adoption of unified communication and collaboration (UC&C) technologies as drivers of digital transformation across a global automotive organization. Against the background of research on the bioeconomy and economic ecosystems, indicators of cultural change in the workplace and other transformation factors shown to have an impact included the ease of use and adoption, legacy reduction, and elimination, increased organizational efficiency and generating savings.*

## INTRODUCTION

Although a press release by the United Nations Environment Program (2023) indicated that the "ozone layer is on track to recover within four decades", the **bioeconomy** as a new approach emphasizing "re-

DOI: 10.4018/978-1-6684-8879-9.ch009

using, recycling, and recovering materials" (Satya, et al., 2023, p. 1) is one of the essentials as part of the "strong and functional couplings among ecological, **economic**, social, and technological processes" explaining "the complexification of human-made systems, and phenomena", such as the use of artificial intelligence for sustainable complex socio-technical-**economic ecosystems** (Martínez-García, 2022, p. 1). Such **ecosystems** are acutely threatened by serious degradation. This state of affairs not only leads to acute **economic** losses, but also entails catastrophic ecological, social, and cultural *damage*.

This is because after decades of intensely *damaging* use, in "recent years, the growing trend of energy consumption from fossil fuels in the world" had presented humankind with major **crises** related to environmental **pollution**, hydrological stress and "increasing acceleration in the depletion of energy resources" (Wang, et al., 2023, p. 1). In this scenario, some of the **challenges** related to biogas generation from biomass as a cleaner alternative towards a circular **bioeconomy**, which is considered to be a natural investment in citizen well-being and *societal* prosperity, can be solved using artificial intelligence.

The **bioeconomy** is one of the priorities of the European Commission (EC), and the topics of the **bioeconomy** and **economic** and social **ecosystems** have been included as related to **emerging trends** with regard to **challenges** in e.g., the proceedings of the international conference on *Sustainable Research and **Innovation*** (SRI) (Mwongera & Langat, 2014) and when building the hyperconnected society in terms of Internet of Things (IoT) *research and innovation* value chains, **ecosystems** and markets (Vermesan & Friess, 2015), as well as considered in the 2030 **Sustainable Development Goals** (SDGs).

This specific chapter will address especially SDG 9: Industry, **Innovation** and Infrastructure, and to a lesser extent, SDG 12: Responsible Consumption and Production, as related to **productivity**.

## Societal Impacts

The importance of this theme lies primarily in the conservation of **ecosystems** and their biodiversity, but also in discussing potential new **challenges,** "namely the **economic**, technological, and *societal" impacts* and dimensions of entrepreneurial **ecosystems** (Audretsch, Cunningham, Kuratko, Lehmann, & Menter, 2019, p. 313).

These topics further aim to prepare for the implementation of clinical research, which "evolved side-by-side with technology, leading to exponential data generation contributing to social", **economic**, technological and environmental "development. Nevertheless, data storage, integrity," *blockchain* and clinical data economics had led to the tokenization of clinical research in the European Union (EU) (Pego, Raposo, & Loureiro, 2021, p. 269).

Against the background of the *political and **economic** implications of blockchain technology in business and healthcare,* the latter authors indicated that the "single critical output of a *blockchain* is creating trust where previously impossible. While this feature delivers compelling value for many use cases", such as bitcoin for money, the real *blockchain* game changer is related to protocols and Decentralized Autonomous Organizations (DAOs) for coordinating work to provide goods and services (Loureiro, Pêgo, & Raposo, 2021, p. 160).

The motivation for the thesis discussed in this chapter was the increased priority and drive towards digital transformation across global industry, specifically at enterprises engaging in large-scale manufacturing and product development. The inspiration for the research study was found in the unique **challenges** encountered in planning, designing and affecting the digital change of communication and collaboration in rapidly transforming industries. The goal of this research was the creation of a technical and services