

Selected Economic Theories' Point of View on the Business Model Transformation

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Abstract

Purpose of the article: The purpose of this article is to introduce and explain the economic difficulty of transforming a company's business model and examine the change through selected economic theories.

Methodology/methods: The methodology for the conduction of this paper is based on the review of the original resources and writings of the people who have been influencing the economic thought of humankind.

Scientific aim: This paper aims to analyse the impact of the business model transformation using various economic theories. It offers the points of view of authors such as John Maynard Keynes, Friedrich Hayek and Joseph Schumpeter, considering the current circular economy trends. The whole paper is based on the implications of the theories to the proposed dissertation topics of the authors.

Findings: This paper implies that sustainability and servitization are complex processes that require transformation of business models and implementation of digital technologies. Whether sustainability is truly perceived as sustainable depends on the constant increase in globalization and the associated increase in resource demand, which directly influences the level of emissions and waste production.

Conclusions: This paper points out that in the current modern digital era, companies need to actively analyse their market environment, taking into account competitors' activities, financial constraints, economic situation and the stage of the business cycle. Society is placing ever-increasing demands on companies to behave sustainably, be environmentally responsible, and require companies to address the impacts of their activities, including the use of renewable resources and recycling standards. The integration of digital technologies and the focus on sustainability in this paper highlights the interconnection of servitization, business model transformation and digitalization in modern manufacturing strategies.

Keywords: servitization, sustainability, business model, transformation, circular economy, digitalization

JEL Classification: M15, M21

Introduction

Manufacturing companies are expanding their portfolios to include ancillary services, often referred to as product-related services or the “product-service continuum”, where the ancillary service becomes a central part of the entire customer value creation process. This transformation of a company’s business model requires a strategic transformation towards the provision of comprehensive product-service packages, with service also becoming the main tool for differentiating the company in the market. At the same time, companies are forced to transform their business models in the era of Industry 4.0 by engaging and actively using digital tools and methods. However, the scope of the transformation goes beyond Industry 4.0 itself and requires companies to be able to obtain comprehensive information to enable shoppers to make informed decisions about their operations and processes. Informed decision-making involves taking into account external factors such as those identified in the SLEPT(E) analysis, along with an assessment of internal capabilities in terms of time, money and human resources.

In today’s age of digital tools and constant market evolution, companies must take proactive steps to ensure that they are able to analyse the market in which they operate. In particular, however, they need to focus on the activities of competitors, the financial frontier, the current economic situation, and the stage of the business cycle. An integral part of all companies’ activities nowadays is also what impact their activities have on sustainability and the environment. This means how companies approach renewable resources, recycling and sustainability itself. Together, these elements highlight the link between servitization, business model transformation, and digitalization in today’s manufacturing strategies.

The article will explain the theoretical level of two main topics. The first theoretical

level will be an explanation of what a business cycle is, what the key forces that influence the business cycle are, and what to imagine by the term business model of digital transformation. The second theoretical level that needs to be presented for the purpose of this paper is the concept of servitization, digital servitization, and circular economy, which is directly related to sustainability as a pervasive element throughout this paper.

1. Business cycle and business model digital transformation

1.1 Business cycle

The baseline word the companies need to work with is the term business cycle. The term was defined by Jean Charles Léonard de Sismondi in 1819 in his book *Nouveaux Principes d'économie politique* which directly opposed the theories developed by the classical economists who were working with the theory of Economic Equilibrium which can be understood as the model using the conditions of perfect competition. After Sismondi published his argument, many economists tried to stimulate the theory under some common points that they were able to observe based on the development of the then-current world.

Gregory Mankiw comments on the development in his essay titled *Real Business Cycles: A New Keynesian Perspective* (1989) as follows: “The classical school emphasises the optimisation of private economic actors, the adjustment of relative prices to equate supply and demand, and the efficiency of unfettered markets. The Keynesian school believes that understanding economic fluctuations requires not just studying the intricacies of general equilibrium, but also appreciating the possibility of market failure on a grand scale.”

Mankiw in his work goes even further to define what is the business cycle and writes the following: “Real business cycle theory is

the latest incarnation of the classical view of economic fluctuations. It assumes that there are large random fluctuations in the rate of technological change. In response to these fluctuations, individuals rationally alter their levels of labour supply and consumption. The business cycle is, according to this theory, the natural and efficient response of the economy to changes in the available production technology.” (Mankiw, 1989)

1.2 Business model digital transformation

Focusing on the technological side of the idea, we can compare the ideas of John Maynard Keynes and his most vocal opponent Friedrich Hayek. To extend the view a bit, we will add the ideas of Joseph Schumpeter about the Innovation Cycles. The ultimate goal is to help the companies determine when the ideal time is during the business cycle to start the business model transformation.

During the time of the Keynes – Hayek battle, Malcom C. Rorty in 1922 in his book *Some Problems in Current Economics* defined forces of the Business Cycle. The Figure 1 depicts the position of Rorty.

From the Figure 1, we can see that the forces are more or less similar to what we see and understand even today. The business cycle is the term that is used as well in the popular science and website such as Investopedia, where it is detailedly described and the description rooting back to the Rorty’s explanation.

Rorty adds the following in his book from 1922: “It is, however, a rare thing for business activity to continue at any given level, or at any steady rate of increase, for a long period. The volume of business and of production grows from year to year, not steadily, but in a series of spurts, each of which is followed by a check or decline. These alternations of activity and depression constitute what is known as the business cycle.

[...] If we begin with a period of depression, we find merchants reducing stocks, bank loans being contracted, the weaker and less efficient business enterprises forced to the wall, prices dropping, and much labor unemployed. [...] It is theoretically possible for business to continue at this low level indefinitely. Low incomes result in low

THE FORCES OF THE BUSINESS CYCLE

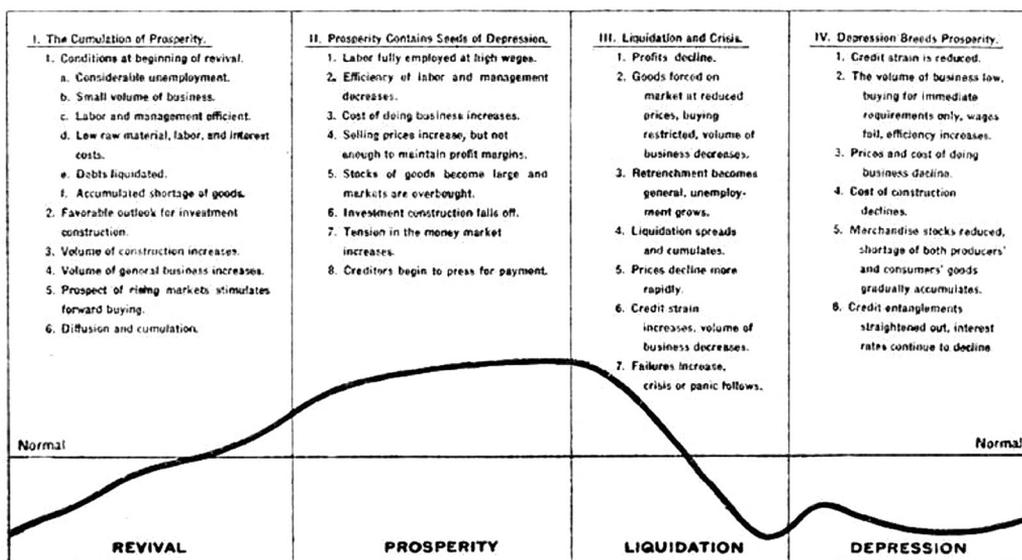


Figure 1. The forces of the business cycle seen by M. C. Rorty. Source: Rorty, 1922.

expenditures, and low expenditures in turn make low incomes.

But, in practice, there are several things which always operate to bring about a business revival. A certain considerable amount of money is always being saved by thrifty persons, even during the worst of a business depression, and these savings create a growing pressure for an outlet in new enterprises and business expansion.

[...] Sooner or later, therefore, the vicious circle of low income and low expenditure is broken. Bank balances are drawn upon, new loans are made, and each day's expenditure is greater than the income of the day before. This process is cumulative." (Rorty, 1922)

McKinsey & Company in its quarterly report titled *Disrupting beliefs: A new approach to business-model innovation* by Marc de Jong and Menno van Dijk back in July 2015 state that generally business models are less durable than they used to be which is caused by the change in the perceived belief of creating economic value on which almost all the businesses are built on. They state that: "These governing beliefs reflect widely shared notions about customer preferences, the role of technology, regulation, cost drivers, and the basis of competition and differentiation. They are often considered inviolable-until someone comes along to violate them. Almost always, it's an attacker from

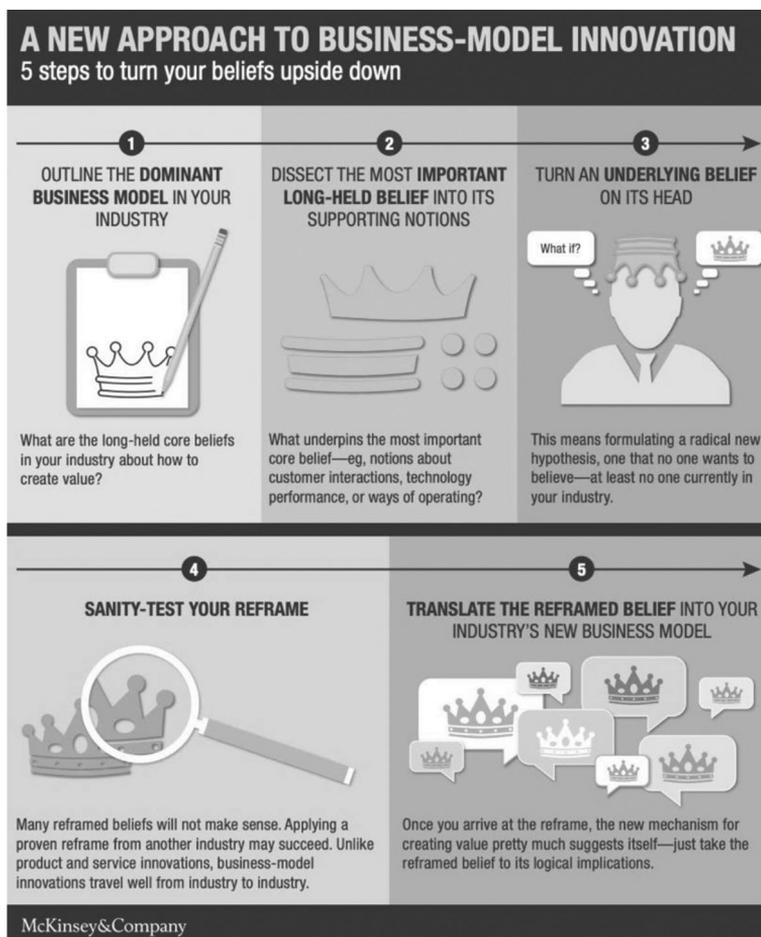


Figure 2. A new approach to business model transformation. Source: McKinsey & Company, 2015.

outside the industry. But while new entrants capture the headlines, industry insiders, who often have a clear sense of what drives profitability, are well positioned to play this game, too. How can incumbents do so? In a nutshell, the process begins with identifying an industry's foremost belief about value creation and then articulating the notions that support this belief." (de Jong, van Dijk, 2015)

And the violation causes change. The change can be approached by the Figure 2 shown in the McKinsey & Company report below.

The key idea of digital transformation of business models is to increase the competitive advantage. Kraus *et al.* (2021) in their extensive research on the current state of the art about digital transformation, focusing on the research among the companies which have clarified that they are undergoing the digital transformation. And what is the benefit? The Figure 3 from Kraus *et al.* "illustrates how companies combining multiple strategies with a digital business strategy can obtain different capabilities, knowledge, and resources which in turn will improve their reputation. This achieves a competitive advantage that enables companies to obtain a larger market share due to the differentiated products and services they offer compared with their competitors." (Kraus *et al.*, 2021)

1.3 Keynes and Hayek dilemma

Going back to the economic sphere of the topic of digital transformation we will now examine the views from Keynes and Hayek where the 2 rivalling authors argue against the classical economists and Keynesians respectively.

1.3 Keynes

In his revolutionary book from 1936 *The General Theory of Employment, Interest, and Money*, John Maynard Keynes argues with the classical economist building his opposition on the two main arguments. Firstly, the wage is equal to the marginal product of labour. Keynes adds: "This is to say, the wage of an employed person is equal to the value which would be lost if employment were to be reduced by one unit (after deducting any other costs which this reduction of output would avoid); subject, however, to the qualification that the equality may be disturbed, in accordance with certain principles, if competition and markets are imperfect." (Keynes, 1936). Secondly, the utility of the wage when a given volume of labour is employed is equal to the marginal disutility of that amount of the employment

"This is to say, the real wage of an employed person is that which is just sufficient (in the estimation of the employed persons

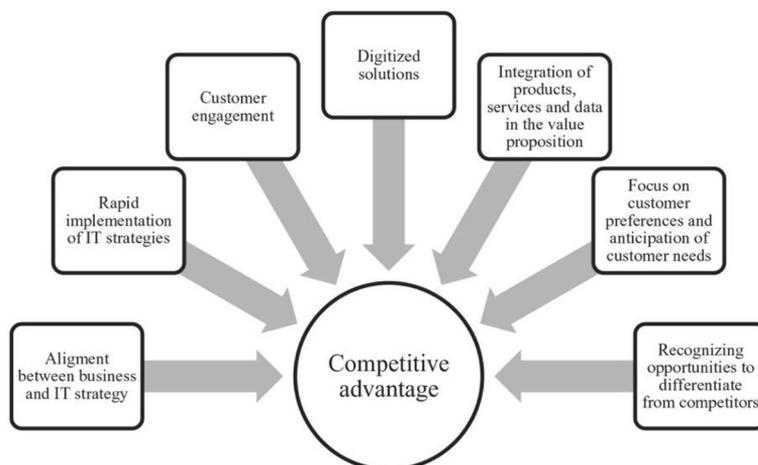


Figure 3. Combination of business strategies. Source: Kraus *et al.*, 2021.

themselves) to induce the volume of labour actually employed to the forthcoming; subject to the qualification that the equality for each individual unit of labour may be disturbed by combination between employable units analogous to the imperfections of competition which qualify the first postulate.” (Keynes, 1936)

John Collins in his commentary (2017) on Keynes' work states that: “Keynes says that traditional economists had misunderstood the causes of full employment. According to classical economics, which holds that the market will naturally find an equilibrium, employment is determined by the price of labour. But Keynes argues that employment is decided by aggregate – that is total – demand. A shortfall in demand will result in a downward cycle: less demand will fuel less employment and then even less demand, resulting in prolonged underemployment. It is for this reason that economies are not self-correcting and require government intervention.” (Collins, 2017)

1.4 Hayek

On the contrary to Keynes, there was Friedrich Hayek the most prominent representative of the Austrian School of Economics and Nobel Prize winner of 1974. Hayek reacted to *The General Theory of Employment, Interest, and Money* by writing a book called *The Road to Serfdom* where he opposes the argument of Keynes regarding government interventions stating: “We have progressively abandoned that freedom in economic affairs without which personal and political freedom has never existed in the past.” (Hayek, 2001)

Referring to the era in which the book was written (Great Depression and World War II), Hayek clearly describes the nature of the behaviour of the then-political leader and the behaviour of the countries they were ruling directly opposing the ideas of socialist society and the idea of government interventions. “Most recently an American student

of politics has enlarged upon Lenin's phrase and asserted that the problem of all government is “who gets what, when, and how?” In a way this is not untrue. That all government affects the relative position of different people and that there is under any system scarcely an aspect of our lives which may not be affected by the government action, is certainly true. In so far as the government does anything, its action will always have some effect on “who gets what, when and how”.

...The contrast between a liberal and a totally planned system is characteristically illustrated by the common complaints of Nazis and the socialists of the “artificial separations of economics and politics, and their equally common demand for the dominance of politics over economics.” (Hayek, 2001)

1.4 Schumpeter's Innovation cycles

Going back to the idea of the business cycle contributes with his view on the innovation process. Karol Śledzik in his article from 2013 summarises the driving forces according to Schumpeter from the work *The theory of economic development: an inquiry into profits, capital, credit, interest and the business cycle* (1983):

1. Launch of a new product or a new species of already known product.
2. Application of new methods of production or sales of a product (not yet proven in the industry).
3. Opening of a new market (the market for which a branch of the industry was not yet represented).
4. Acquiring of new sources of supply of raw material or semi-finished goods.
5. New industry structure such as the creation or destruction of a monopoly position.

Furtherly, Schumpeter defines the term creative destruction in his follow-up work *Capitalism, Socialism and Democracy* (1942):

“The fundamental impulse that sets and keeps the capitalist engine in motion comes

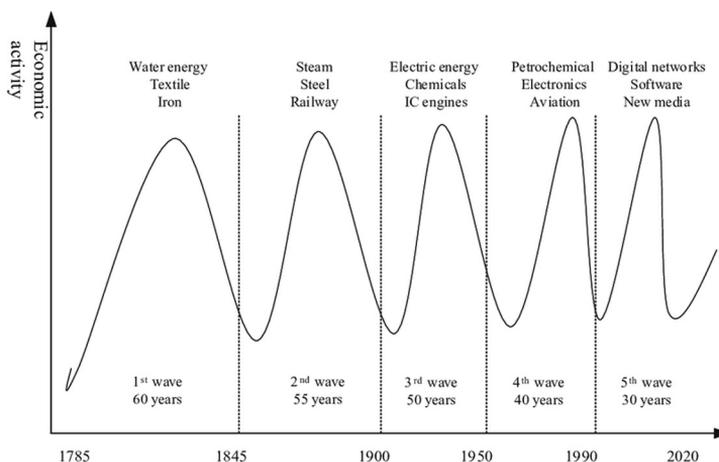


Figure 4. Schumpeter's long waves of innovation. Source: Levi-Jakšić et al., 2018.

from the new consumers' goods, the new methods of production or transportation, the new markets, ... (This process incessantly revolutionizes the economic structure within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism." (Schumpeter, 2012)

With the creative destruction definition, follow the identified innovation waves from the Figure 4.

It is possible to deduct from the length of the waves that the innovation cycles are shorter and shorter thanks to the technological advancement. Therefore, we can expect that the companies would need to undergo another transformation sooner than expected based on the previous knowledge. This underscores the need of the companies to make the right decisions and the right time regarding their digital transformation. It is crucial to understand the connections between the current economic theories as well as the innovation model that can be combined.

2. Servitization and circular economy

2.1 Servitization

The concept of servitization, where companies offer additional services linked to their

primary products, can be traced back to pioneering firms in the mid-20th century. IBM, for instance, introduced the first business computers between the 1950s and 1960s, accompanied by leasing arrangements, pay-for-usage models, and maintenance agreements. Similarly, Xerox adopted a service-based strategy around the 1960s, providing maintenance, repair, and insurance agreements, alongside pay-for-usage options. Rolls-Royce revolutionized the industry by delivering the power of gas turbines by the hour, rather than selling the turbines outright to airlines (Pistoni, Songini, 2017). More recently, Philips has embraced the concept by offering "Light as a Service," further exemplifying the shift towards service-oriented business models. "Servitization is the most widely used to describe the phenomenon of product companies turning increasingly toward service-business, in order to achieve growth and competitive advantages" (Baines et al., 2007). According to large-scale surveys conducted in various industries has been confirmed that services are becoming more important to products rather than business development or maturity (Pistoni, 2017).

The routes to servitization can be articulated in diverse manners, and a common method involves associating them with the

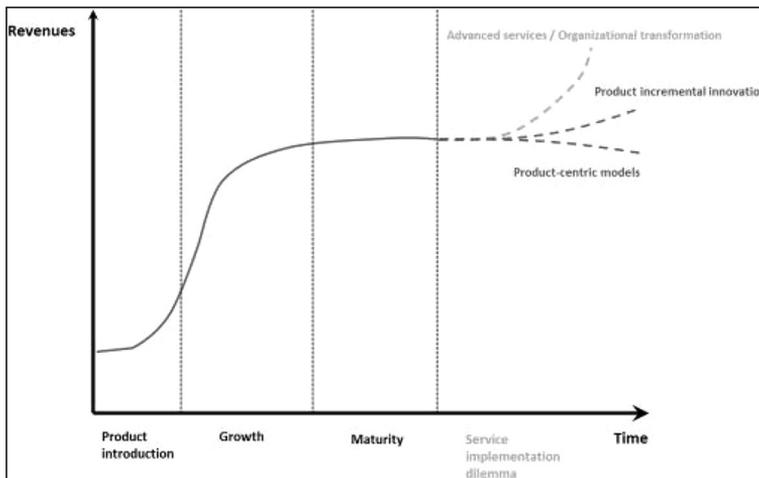


Figure 5. The servitization dilemma. Source: Bustinza et al., 2017.

elongation of product life cycles. As an illustration, a company focused on products might compete without introducing any services related to their products, acknowledging that as the product life cycle advances, market share might decline, and competitors' offerings become more appealing to consumers (Bustinza et al., 2017).

2.2 Circular Economy

The transition towards services goes hand in hand with circular economy. However, this transition requires company's system innovation to obtain company's growth from resources consumption. Circular economy defines needed actions to gain competitive advantage on the market, adapt to rising trends and increasing customers' needs. The concept of a circular economy entails transformation of goods that have reached the final stage of their functional lifespan into valuable resources for subsequent use. Meaning that there are closed loops within industrial ecosystems and lower waste generation. The shift therefore challenges traditional economic principles by increasing priority of sufficiency over excessive and mass production. Materials reuse, recycled materials and item repairs are prioritizing. Circular business models can be classified into two groups. The first group consists of tho-

se who promote reuse and prolong products operational lifespan through repair, upgrade or remanufacturing. The second group consists of that transform used goods into high-quality resources through material recycling processes. The traditional form of ownership is replaced by concepts of stewardship, in which the consumer transits into active participant as a user and creator. Moreover, the remanufacturing and repairment contribute to the establishment of skilled job opportunities within locals (Stahel, 2016).

3. Society's perception of the circular economy

In the face of a growing imperative for long-term sustainability, companies are actively investigating innovative business models that integrate advanced digital capabilities with the pursuit of sustainability goals-spanning economic, environmental, and social dimensions. Digital servitization emerges as a compelling alternative, providing an avenue to diversify and enhance product and service portfolios while fostering connectivity across entire value chains. Additionally, sustainability is perceived as a fundamental driver of value in this context. According to Chávez (2023), the challenges in implementing a digital servitization model in the enterprise are

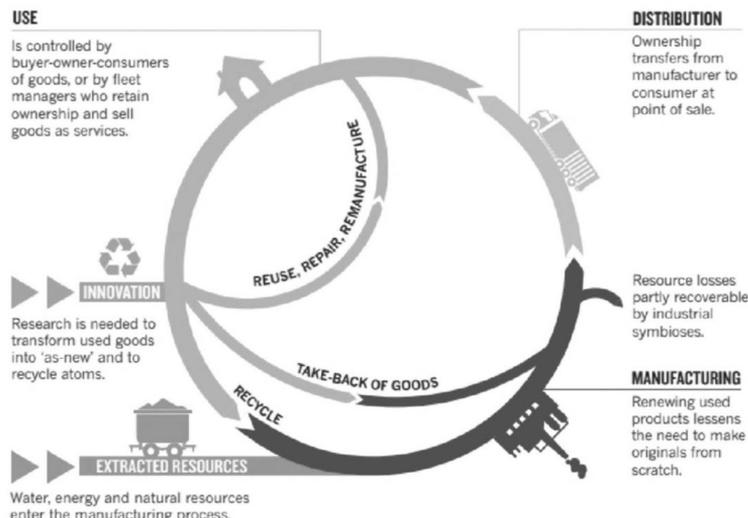


Figure 6. The losing loops. Source: Stahel, 2016.

categorized as economic, technical, organizational, contextual and support related.

1. *Economic* – lack of understanding the value of obtained data from the market.
2. *Technical* – various level of digital maturity across value chain and technology adoption in companies with long lifecycle of products.
3. *Organizational* – form of risk perceived in some industries can be crucial towards openness in data sharing.
4. *Contextual* – existing regulations and lack of standardization required for digitalization.
5. *Support-related* – lack of support in a form of frameworks that successfully

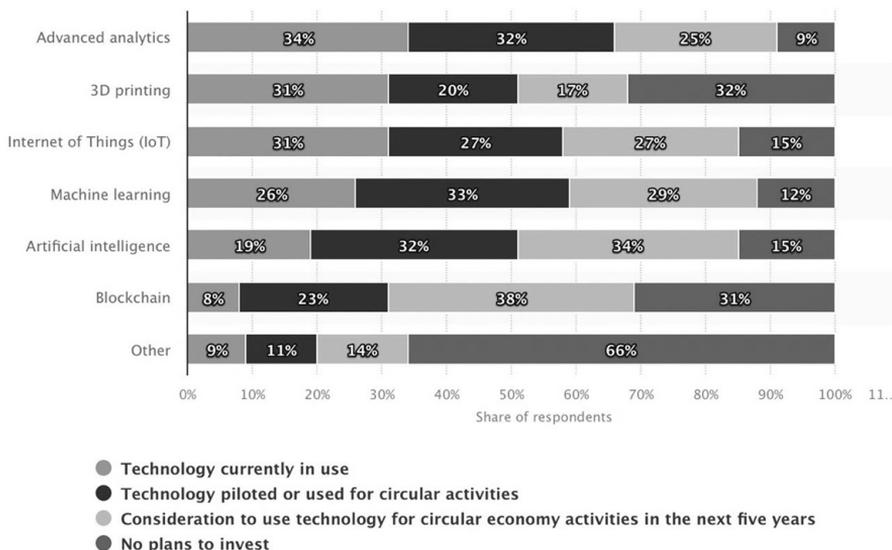


Figure 7. Key supply chain technologies used to enable circular economy activities worldwide in 2019. Source: Placek, 2022.

integrates sustainability as the core of the value proposition.

Using resources for the longest possible time could cut some nations' emissions by up to 70% and at the same time increase their workforce by 4%. How the closing loops work could be seen on the Figure 6.

In recent decades, environmental, economic and social challenges have addressed the urgency of assessing humanity's capability with the Earth. The recognition of limitations within conventional linear economic models, various organization are transforming towards circular economy framework. The linear economy's reliance on virgin

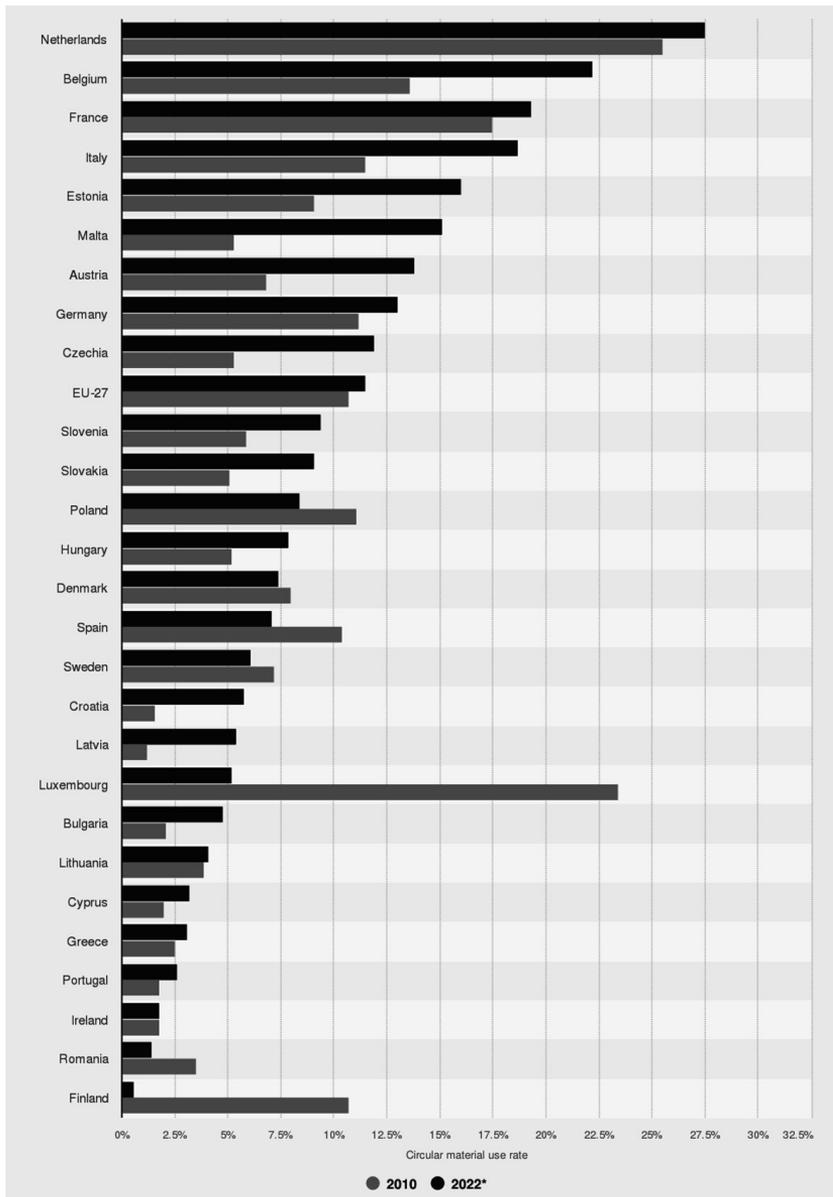


Figure 8. Circular material usage rate development within EU countries in 2010 and 2022. Source: Alves, 2024.

resources is unsustainable, necessity of transition towards circular economy is crucial. Prior to achieving circular economy are strategies such as stock optimization, enhancing eco-effectiveness and efficiency, minimizing waste generation, and adapting to 4Rs principles. These principles are reduce, reuse, remanufacture, and recycle (Simmons, 2022).

There are various models how to create a circular economy strategy within company's ambitions. KPMG (2024) describes its circular economy strategy as the four-step strategy which conclude with company's operations. The process is as follows:

1. *Assessing current operations and values within the business*

In the first step, it is necessary to conduct a current state analysis. This can include benchmarking, metrics, and regulations within the company.

2. *Set strategic ambition*

As we are speaking about a transformation strategy, the company has to set its ambition level and determine the scope of the circular strategy in order to embed circularity itself.

3. *Compare the difference between current and ambition*

Owing to first and second steps, the company can now on continue with the difference definition. The aim is to find out what has to be changed.

4. *Develop the strategy*

As we know where the difference is within the company, we are able to define what has to be done in order to move from current to desired ambition. What will be detailed strategy design, what will be needed in order to adapt to management change across all levels within the company.

In 2019, a global supply chain survey revealed the adoption of key technologies enhancing circular economy practices. Approximately 34% of respondents reported utilizing advanced analytics for this purpose, while nearly 40% expressed intentions to integrate blockchain within the upcoming five years (Figure 7). Advanced analytics and blockchain both offer enhanced transparency, traceability, and efficiency in supply chain management which are crucial aspects of promoting circular economy practices.

The circular material usage rate, also known as the circularity rate, is a metric

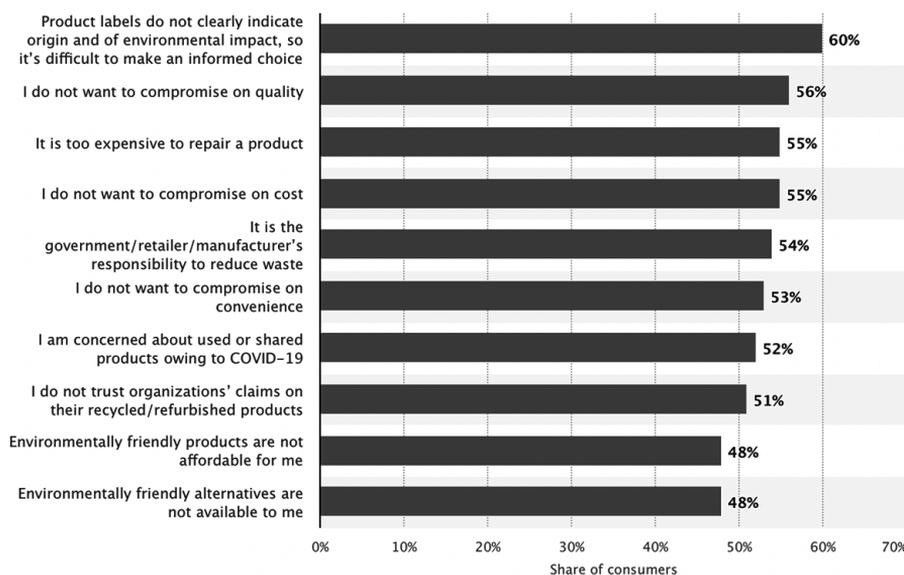


Figure 9. Consumers' reasons why not taking actions in circular economy. Source: Smith, 2023.

expressed as a percentage that indicates the proportion of recycled material reintroduced into the economy, thereby reducing the need for usage of primary raw materials. Figure 8 shows the comparison of circular material usage in EU countries between 2010 and 2022. While most Member States witnessed an increase in their rates over this period, there are notable variations. In 2022, the Netherlands took the highest circular material usage rate in the EU, reaching approximately 27.5%. On the other hand, Finland reported the lowest rate, around 0.6%. The average rate of circular material usage across EU countries stood around 12% in 2022.

The 2021 consumer survey conducted by Capgemini Research Institute revealed consistent trends in reasons why consumers abstain from practicing circular consumption. Responses clustered around 50 to 55% range, indicating uniformity in consumer sentiments. The primary factor, selected by respondents, is that they lack adequate product information necessary for evaluating its circular attributes.

4. Discussions

Is sustainability sustainable? According to the facts and charts above, it can be assumed that the concept of sustainability is a logical starting point for servitization, or the transformation of business models from products to services, and at the same time an extended framework of circular economy, which, in simple terms, aims to extend the life cycle of products and thus reduce impacts, not only on the natural environment. This is how it can be done in an ideal world. But is sustainability really sustainable as it is presented?

There are growing concerns that the accelerating expansion of the global economy may cause irreversible damage to the environment and thus reduce the quality and standard of living of future generations. This concern is based on two basic assumptions: firstly, that more production requires more

resources, leading to an ever-greater drain on the Earth's natural resources, and secondly, that more production leads to more emissions and waste production that could outstrip the planet's capacity to absorb them, thus worsening the condition of the environment (Grossman, 1995).

The most simplified interpretation of sustainability is the preservation of environmental capital. However, this view is impractical for today's society because our daily life inevitably involves the use of some non-renewable resources. When we consider the gross environmental impacts, this strict understanding of sustainability becomes unattainable. If we can re-focus on net impacts, for example by seeking to increase natural capital stocks and increasing renewable resources across the board, we could slowly but surely begin to offset the increasingly necessary use of high volumes of non-renewable resources.

5. Conclusion

In today's digital era and constantly changing market conditions, companies must actively analyse the market in which they operate. Companies' activities are influenced by the increasing activity of competitors, the financial boundaries of the company, the current economic situation and the overall phase of the business cycle. More and more emphasis is being placed on sustainable behaviour and corporate environmental responsibility. Companies must consider the environmental impacts of their activities, be proactive towards the involvement of renewable resources, recycling standards and sustainability. It is the aspects of embracing digital technologies and the emphasis on sustainability that underline the interconnection between servitization, business model transformation and digitalization in modern manufacturing strategies.

This article highlights two basic theoretical frameworks. The first framework explains

the business cycle, identifies the key forces that influence it, and defines the concept of a business model for digital transformation. The second framework introduces the

concepts of servitization, digital servitization, and circular economy and highlights sustainability as a theme that is interrelated in all of the sections of this paper.

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