

Reverse Innovation: A New Perspective on Globalization

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Abstract

This chapter re-examines the dynamics of globalization through the lens of “reverse innovation.” Challenging the traditional model where innovations flow from developed to developing nations, reverse innovation describes the process whereby new products and services are first developed and adopted in emerging markets before being exported to the developed world. The study identifies several key drivers for this phenomenon, including significant “gaps” between developed and developing countries in performance needs, infrastructure, sustainability, and regulation. These unique local conditions in markets like China and India foster the creation of affordable, high-quality, and context-specific solutions.

Citing examples such as General Electric’s portable ultrasound machines developed for China and low-cost medical devices from India, the chapter illustrates how multinational corporations and local firms are leveraging these opportunities. The analysis argues that reverse innovation fundamentally alters the nature of globalization, transforming it from a unidirectional process into a multidirectional and more interdependent system. It counters the traditional product life cycle theory and suggests that emerging economies are no longer just recipients but are now significant sources of global innovation. While acknowledging the recent rise of protectionism, the chapter posits that reverse innovation offers a powerful strategy for firms to navigate trade barriers, access new growth markets, and redefine global industry standards. Ultimately, it presents reverse innovation as a key force shaping a more integrated and less hierarchical global economy.

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1.Introduction

The end of the Bretton Woods Monetary System in 1971 brought about significant structural changes in the global economy. The oil crisis that followed the collapse of the system accelerated the search for new policies. To address the unstable economic conjuncture that emerged during this period, a movement toward liberalization was initiated. Initially, liberalization focused on goods and services. The removal of barriers to capital facilitated the deepening of the globalization process. A significant milestone in this deepening was marked by advancements in the information and communication sector.

Activities aimed at innovation stand out as the main driving force of productivity and development. The development of such activities paves the way for innovations that are critically important in terms of high competitiveness and productivity. A significant contribution of innovation and technology to globalization is the enhancement of communication and connectivity. The advancement of the internet, social media, and mobile technologies has transformed the interactions between cultures and nations.

While the concept of globalization was initially associated with areas such as finance, production and culture, the concept of globalization of innovation has become increasingly widespread in the following years. Scientists, governments and international organizations have made efforts to assess the changes in technological activities that have occurred with increasing globalization. Although learning processes are lengthy and hard, the transfer of technological information between people has met with less opposition than changes in cultural, religious, social, or political habits. Technology has always provided a fertile meeting ground for many societies (Archibugi and Iammarino, 2003).

Globalization eliminates geographical barriers, while innovation and technology expedite this process by supplying essential means for the transfer of commodities and services and the dissemination of information. In this context, innovation has become an important field that makes positive contributions to the world's globalization process.

In recent years, the increasing innovation activities from developing countries to developed countries have attracted attention. These innovation activities, which are carried out under specific conditions and are characterized by their own unique features, are referred to as reverse innovation. The phenomenon of reverse innovation has transformed the nature of globalization, which has historically progressed from developed

countries to other regions of the world. Contemporary developing countries have emerged as significant contributors to the process of global integration.

The aim of this study is to discuss reverse innovation in a conceptual framework and to discuss its connection with the phenomenon of globalization. For this purpose, following the introduction section, the background on innovation and reverse innovation is presented. Subsequently, the interplay between innovation and globalization is thoroughly examined. Finally, the study is completed with the conclusion section.

2. Innovation Theoretical Background

Economic analyses since the last quarter of the twentieth century reveal two significant patterns in the global economy. First, technological innovations are contributing more than ever to economic prosperity. Second, nations in the world economy are becoming increasingly globalized and more interdependent. These two trends are strengthening in an interrelated manner. The expeditious exchange of information and the establishment of intimate connections among innovation ecosystems across various nations enhance the process of invention and the dissemination of novel concepts (Grossman and Helpman, 1991). Thus, the possibility of accessing the global knowledge required for economic growth, adapting it to local needs and having the ability to create new technology increases.

Joseph Schumpeter has made great contributions to economic growth theories with his views that emphasize the relationship between innovation and economic activities. Schumpeter defines innovation as an activity that leads to a new production function or a new product. In his “The Theory of Economic Development” in 1934 and “Capitalism, Socialism and Democracy” in 1942, Schumpeter argued that innovation is the force behind economic growth. Schumpeter identifies the five requirements for a product or service to be evaluated within the framework of “innovation” (Schumpeter, 1934):

- The development of the manufacturing of a previously unused good in society,
- Implementation of a new method in production,
- Opening a new market,
- The discovery of a new input source,
- Realization of the reorganization of industries.

Schumpeter defined “new” as a dynamic that is different, unique and leads to increased productivity and profits. Innovations cause old ideas, technologies, skills and equipment to become obsolete, in a sense obsolete. Innovation is a process that constantly renews and develops itself. This process is based on continuous innovation. Innovation is based on setting goals, designing and organizing the process well, continuously monitoring progress, and effectively planning goals, process and organization when necessary (Boer and During, 2001).

Schumpeter’s innovation and technology studies have been the starting point of the endogenous growth theories developed in the following years. Romer, (1986), one of the pioneers of endogenous growth theories, defined innovation as the main driving force behind growth. According to Romer, technological innovation is created by utilizing human capital and the existing stock of knowledge within the R&D system. The technological development obtained as a result of innovation contributes positively to capital accumulation and plays an important role in the realization of output per worker and thus growth.

Taymaz, (n.d.) argues that there have been three transformations affecting technological development since the 1980s. While before 1980, it was sufficient to master a single technology to produce a product, after this period, different technologies including know-how such as electronics and software started to be used. This technological development has revealed the necessity of R&D activities in order to produce innovative products and increased R&D activities have also increased fixed costs. All these increased innovative product developments have also increased uncertainties and risks depending on both consumer preferences and the possibility of competitors to develop better products.

Because of these three transformations, it is not possible for even the largest firm in the world to produce/develop all products/technologies related to a product or technology on its own. In other words, the innovation process is increasingly moving beyond the boundaries of one firm, and innovations can only be realized through interactions and collaborations between firms. This situation necessitates a systems approach for understanding the innovation process, and multiple firms and/or technologies need to be considered as a whole. In this context, as innovation activities and technology increase, globalization is necessarily realized.

At present, innovation is recognized as a key concept that increases competitiveness for firms and improves economic performance for national economies. The innovation system created in firms makes it possible for them

to become strong in the national and even international market. Therefore, innovation has become one of the most important topics emphasized by policy makers in both industrial and regional areas.

3. Reverse Innovation

Globalization provides both opportunities and challenges for firms in emerging economies. Competitive pressures push these firms to innovate to maintain their production and ensure their continued survival. The need to innovate has led some emerging economies such as China and India to become innovation hubs over time, leading to the emergence of the concept of reverse innovation (Gwarda-Gruszczyńska, 2016).

The important feature of reverse innovation is the focus not only on the price of the product but also on its quality. Hence, the product produced is not only cheaper, but also of high quality. Govindarajan and Ramamurti (2011), define reverse innovation as a process in which an innovation is adopted in developing (low-income) countries before it is implemented in developed (high-income) countries.

Although reverse innovation and glocalization are similar in definitions, they have fundamentally different characteristics. Glocalization is the process of selling international companies' products to domestic markets by adapting them to the cultural and vital structures of the export countries. In reverse innovation, new products are created from the ground up and exported to developed markets (Von Zedtwitz et al., 2015).

Reverse innovation is practiced by developing country firms as well as by international firms that come to access potential markets in these countries. The recession in developed economies in recent years has put firms in a difficult situation. International firms in these countries are increasingly faced with market stagnation and financial instability. In contrast, the large, growing and untapped customer base in developing countries has attracted the attention of these international firms seeking sustainable growth and new market opportunities (London and Hart, 2004).

The reverse innovation process created by international firms can be summarized as follows; first of all, firms focus on emerging markets while formulating their growth plans for the future. After researching the structure of the emerging market, firms formulate a growth strategy and identify the first target consumer group. Then, taking into account local needs and realities, they produce specific products and introduce them to the local market. After a certain period of time, these innovative products are exported to high-income countries (Hadengue et al., 2017). At the same

time, the most important point to be emphasized is that the first market target for innovative products is consumers in developing countries.

According to Govindarajan and Trimble (2012), reverse innovation will have a significant impact on core markets, and firms that disregard this process may find themselves unable to maintain their leadership position in the global market. In the context of this phenomenon, prominent international corporations have initiated reverse innovation practices. For instance, General Electric developed a portable ultrasound machine tailored to the Chinese market in the early 2000s. These machines were developed in China and initially offered to the domestic market. They were later successfully introduced to Western markets. Natural and herbal medicines that have been utilized in India for centuries have been synthesized in Western pharmaceutical laboratories and marketed to consumers in the United States and Europe as FDA-approved medications. Low-cost baby warmers, which were designed in India with the objective of preventing high infant mortality, have been exported to 75 countries. The Gatorade energy drink was initially developed to treat patients afflicted with cholera in South Asia; however, in subsequent years, it was fully commercialized as an energy drink on the global market. Nokia's strategic decision to develop its products in its Beijing R&D laboratory and to initially target the Chinese market, prior to their European launch, is indicative of a deliberate and calculated approach to market entry and expansion (Vadera, 2020; Von Zedtwitz et al., 2015).

The success of innovation activities in developing countries is not necessarily indicative of their potential for success in developed markets (Hadengue et al., 2017).

Govindarajan and Trimble, (2012) say that reverse innovation requires a significant development gap between developed and developing countries in key areas, including performance, infrastructure, sustainability, regulation, and consumer preferences. These differences, which are necessary for reverse innovation, are explained below (Govindarajan and Trimble, 2012; Gwarda-Gruszczyńska, 2016):

The performance gap: Income levels among consumers in developing countries are significantly lower than those of citizens in developed countries. Consequently, it is improbable that products resulting from innovation activities in developed countries will be in demand in developing countries. The solution to this situation is to develop an innovative product with at least reasonable performance, created from scratch and at a lower cost. This will result in increased demand for this novel performance and inexpensive,

innovative product from consumers affected by the economic downturn in developed countries.

The infrastructure gap: In developed countries, the majority of citizens have access to modern transportation, communication, and energy systems, as well as schools, hospitals, and banks. However, in developing countries, infrastructure services are still in the process of being developed. The absence of adequate infrastructure products and services can create an environment conducive to the development of innovative solutions.

The sustainability gap: As global economies continue to expand, the tension between economic activity and environmental sustainability is escalating. As developing countries continue to implement more aggressive industrial development strategies, there is an increasing emphasis on environmental sustainability. For instance, the issue of air pollution in certain Chinese cities has reached crisis levels, representing a substantial problem that demands immediate attention. China's notable advancements in the field of electric vehicle (EV) technology can be attributed to this strategic approach.

The regulatory gap: The regulatory systems in place in developed countries are the result of decades of development. In developing countries, the necessity for constant updating may be more pressing. In this context, under certain circumstances, developing countries can become a more favorable environment for innovation.

The preferences gap: A broad array of tastes, preferences, and habits is exhibited by societies around the world. In the context of developing countries, certain flavors have garnered significant attention from Western societies.

The disparities in developmental trajectories between advanced economies and emerging markets have given rise to a process of reverse innovation. Recent innovations in these countries, spearheaded by China and India, have enabled their citizens to access more affordable and superior quality products and services. Concurrently, the export of these products and services contributes substantially to national economies. Consequently, globalization has evolved from a unidirectional phenomenon to a multifaceted, all-encompassing phenomenon that has impacted all nations.

4. Globalization, Innovation-Reverse Innovation

Globalization brings increased inter connectedness and improved exposure to innovations from around the world, providing opportunities for sharing ideas and scaling innovations (Harris et al., 2020). The advent of

globalization has greatly expanded access to information and the emergence of new markets, leading to increased international competition and the proliferation of new forms of organization. The process of globalization, which has deepened mainly in economic and social dimensions, has led to the dissemination of the perception of competition from the national framework to the international level. This development has rendered it compulsory for businesses to innovate.

A significant consequence of globalization on the world economy is the intense competition in national and international markets. While this intense competition has positive consequences for consumers in international markets, such as reduced prices, it also poses significant challenges for producers, including concerns regarding product quality, production technology, technological developments, and the enhancement of marketing standards. In this regard, firms aspiring to expand into global markets must prioritize enhanced efficiency and cost reduction in their operations. The most effective strategy for enhancing competitiveness in global markets by increasing efficiency and reducing costs is through technological innovation.

Since Vernon, (1966; 1979) proposed the product life cycle theory, industrially developed countries have been the center and source of global diffusion of innovation. According to this traditional view, new products and technologies are first developed in developed countries and introduced to the domestic market, and after a certain period of time, they are exported to developing countries. In this context, the direction of innovation is from developed countries to developing countries, both in terms of technology and market (Von Zedtwitz et al., 2015).

Cutting-edge innovations have historically been developed in high-income countries, thereby limiting their global accessibility due to the challenges of affordability in developing nations (Sela, n.d.). However, the innovation success of emerging economies in recent years provides evidence that this situation is being reversed. While emerging markets transfer innovation from developed countries, they also sometimes offer products resulting from innovative activity to the rest of the world, including developed countries. This process is referred to as the concept of “reverse innovation”. This approach involves producing innovative goods and services in emerging markets before expanding into larger economies. Reverse innovation focuses on the spread of innovation activities of underdeveloped and developing countries throughout the world along with globalization.

5. Conclusion

Tariff policies, which have recently gained prominence in numerous countries, particularly in the US, have precipitated a shift from free trade to protectionism. The escalation of protectionist policies is widely regarded as a pivotal factor that has precipitated a shift towards a new era, one in which the phenomenon of globalization has experienced a notable deceleration in its progress, while regional economic blocs have undergone a marked rise in their geopolitical significance. However, multinational companies that adopt reverse innovation strategies experience various benefits, including the ability to overcome existing limitations, explore new markets, and foster growth.

The concept of reverse innovation holds the potential to significantly impact the global economic landscape by facilitating the realization of a unified global market. Developing countries represent lucrative markets for international companies, offering opportunities for growth, capitalization, and market consolidation. As the world increasingly embraces reverse innovation, it has the potential to transform industry standards and expand global expansion prospects for the better (Sela, n.d.).

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