

# Communication on Knowledge Economy Based International Trade

## Abstract

Both the economic policy adopted by many developing countries to foster growth and comparative advantage in international trade and the findings of economic theory regarding the role of government in this process have undergone substantial change over the last few years. Many developing countries have adopted an economic policy stance that emphasizes the importance of liberalization and "getting the prices right" for the attainment of overall economic efficiency. By contrast, findings of new trade theory have led some economists to raise questions such as "is free trade passé?", while endogenous growth theory has shown that economic policy in general, and under certain conditions specific support to selected economic sectors, can raise the rate of growth.

**Keywords:** Economic Policy, Growth.

## Introduction

Production enterprises use inputs and convert them into output. In economic sense, inputs such as, capital, labour and other factors of production are being used as part of production process. Broadly speaking, inputs can be divided into labour, materials and capital which again might have different segmentations. Labour can be categorized into skilled labour and unskilled labour. Carpenters and engineers are examples of skilled labour and agricultural workers are known as unskilled labour. Steel, plastics, electricity, water and any other goods that the firms buy, transform into final products. Land, building, machine and other factors as well as inventories fall under the category of capital. Firms transform these inputs in various combinations into outputs.

In the discussion of international trade, we generally assume that the production possibilities for a country remain the same. But the fact is that changes in a country's production possibilities frontiers are continually taking place and are often fostered by the country's economic policies. Growth in output potential is represented by outward shifts in the production possibilities, which enables the country to reach to a higher level of real income and thus a higher level of well-being.

Trade theory developed by David Ricardo (1817) explains trade in terms of international differences in labour productivity and the alternative explanation offered by Eli. F. Heckscher and Bertil Ohlin (1933) links trade patterns to an interaction between the relative supplies of national resources such as land, labour and capital and the relative use of these factors in the production of different goods (Krugman, 2009). New trade theories developed after Leontief Paradox (1953) mainly focuses on the expansion of trade due to innovation. Almost all the newer trade theories developed especially since 1960s and later on, relax some of the assumptions such as market structure, production conditions, use of technology, etc. and explain the reasons for trade and the diverse effects of trade on the participating economies. We now examine the impact of R & D efforts to trade expansion and the changes in the pattern of trade with the help of some selected newer trade models.

The Imitation Lag Hypothesis (1961) introduced by Michael V. Posner contradicts the basic Heckscher-Ohlin model which states that for the production of a specific commodity the same technology is available everywhere. Posner categorically indicates that the same technology and know-how may not be always available in all the countries. This is because of delay in the transmission or diffusion of technology from one country to another. We consider a two-country world. We also suppose that a new product appears in the first country because of the successful efforts of research and development teams. The second country, according to this theory, will not be able to produce the same product at the same time. Incorporating a time dimension, the imitation lag is defined as the length of time that elapses between the new

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product's introduction in the first country and the appearance of the version produced by the firms in the second country. The imitation lag includes a learning period during which the firms in the second country must learn the know-how to produce the new product. It also takes time to buy inputs (raw materials), install equipments, process the inputs, place the final good to market, and so on. This is the first lag. The second lag is the demand lag. This is the length of time between the product's appearance in the first country and its acceptance by the people in second country.

#### **Review of Literature**

In 1996, Frankel et al. dealt with the possible causality between the economy growth and IT, resorting to the experience of the Southeast Asian countries. They began by referring the estimates of the several empirical studies which afford the IT a decisive role as a source of economy growth, but the estimates were obtained with methodologies incapable of testing the direction of the causality between the variables. As a result, they noticed that these works were seen with reserve, since, according to others, the existent correlation made it possible to support contrary hypotheses. So they considered it necessary to make IT endogenous, having decided on the importance of the catch-up effect (particularly in China, Indonesia and Thailand), investment and education (specially in Japan, Korea and Taiwan) and of the opening to the IT (specially in Hong Kong and Singapore) to economy growth. Furthermore, if there is a causality between EG and IT, this helps reinforce the effect of IT on EG, instead of questioning it.

In a recent work, Frankel and Romer (2014) enlarged the study to include 150 countries, in 2014, and concluded, for example, that the trade appears to raise income by spurring the accumulation on physical and human capital and by increasing output for given levels of capital.

#### **E- Commerce and Trade Facilitation**

In the knowledge economy the generation and exploitation of knowledge has come to play the predominant role in the creation of wealth. Knowledge based economy makes more effective use of and exploitation of all types of knowledge in all the spheres of economic affairs (production and service activities). Modern business is characterized by more and more demand for goods and services, more and more competition at the international level and the steady growth of customers' expectations. In order to expand market access and overcome competition from all over the world, business organizations are in the full process of organizational and functional changes. E-commerce is a means that facilitates and supports all these changes globally. This process makes production and sales companies more efficient and also at the same time it becomes cost effective. E-commerce gives companies to be more flexible in their internal way of functioning. It also helps the production companies to work closer with their suppliers and to become more conscious about the choice of consumer. This scientific mechanism allows the companies to choose the best suppliers from any corner of the world at least possible cost. It narrows down the geographical obstacle and the companies

are able to sell their products at the global market. E- Commerce along with the huge growth of information technology and the development of Internet place the companies in a better position to manage business activities than the competitors.

IT and the Internet transaction cost goes down abnormally which in turn eliminates the intermediaries in the business activities. E-Commerce becomes more effective in enhancing international trade and commerce if countries develop faster and bigger capacity of mobile and fixes communication such as phone, cable, radio and satellite network. Strong general as well as technical education base of a country widen the scope of E-Commerce. The assurance of education is thus a priority for the growth of learning and research process.

#### **ICT Application in Trade Facilitation**

Information and communication technology (ICT) application in trade facilitate trade transaction in customs formalities, trade documentation flow and trade security. ICT facilitates timely exchange of information. This reduces physical impediments. The volume of international trade has been increasing globally and this has become possible due to more participation of countries (irrespective of their economic status) to international trade. A study (SWEPRO, 2002) shows that world trade represents more than 30 percent of world GDP and it would grow to 50 percent by 2020. Under the circumstance, ICT-enabled trade facilitation can play a vital part in managing larger volume of trade transaction replacing paper-based trade facilitation system. Paper-based trade facilitation system is inefficient because this makes huge wastage of time. UNCTAD, 2006 mentions that saving a day through ICT-enabled trade facilitation is equivalent to ½ percent of trade tariff and 7 percent of value of international trade is the cost of administration of trade logistics. About 7 to 10 percent of value of international trade is spent on customs formalities (ESCAP, 2002). Huge wastage of time and money in paper-based trade facilitation increase government expenditure and this poses a burden to most of the developing countries. On the other hand ICT application in trade facilitation not only saves time and money but also these system changes the concept of trade-related government activities. ICT-enabled techniques and services make paper less trade documentation and real time information sharing among the trading countries. Three important factors, namely, technological advances, development of e-commerce and WTO accession and integration into the networked global economy, have in fact reduced cost and increased productivity.

International trade and commerce together involves a number of stakeholders and players such as exporters, importers, permit issuing authorities (PIAs), and also there are suppliers and intermediaries (including the transport or freight forwarders and shipping agents) this large number of stakeholders and players means that traders are to face with a huge number of regulations, and documental requirements. Moreover, trade transaction procedures are inadequate. Audit-based controls and risk-assessment techniques are also

inadequate especially in the developing and the least developed countries. Unclear unspecified import and export requirements are also a common phenomenon. Lack of coordination and cooperation among customs and other Government agencies disturbs the growth of trade flow.

Modern trading world is very much keen to achieve efficient trade facilitation. Single windows model facilitates trade in modern trading world benefiting both the producers and consumers of both the participating nations. Single windows create a

single connection between all stakeholders in the trading community. It allows the stakeholders from a single point of entry to transmit and receive a specific data set, as well as in any data standard and format they need to fulfill requirements for export, import and transit regulations and clearance. Single windows, in short, expedite and simplify information flows between and the Government (United Nations, ESCAP, 2006).The entire single windows Trade facilitation system can be shown in figure-1 below

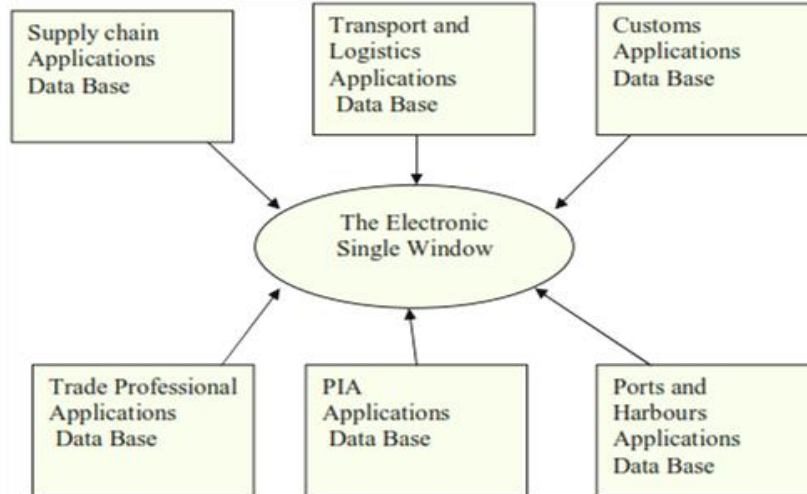


Fig.1 : Single Window Trade Facilitation System

It is possible to set up single window in the developing countries. It is as attempt to overhaul the existing system into as integrated mechanism. Due to shortage of fund and lack of innovative technologies developing countries the set-up costs for implementing single window are higher than operating costs; but the long- term savings are larger than the operating cost if single window.

ICT application in trade facilitation reduces paper-based information and documentation. But the application of ICT or trade promotion largely depends on each country's ICT capacities and ICT infrastructure. The successful operation of the simple window system depends on many factors like assigning lead agency, mapping stakeholders, influences and potential part hers, assessment of

stakeholders' ICT awareness level, simplification and standard desorption of documents and procedures, reviewing ICT – related legal and regulatory frameworks, mapping existing transaction process and documents , risk assessment and management , examining the system designing, adopting capacity building initiatives, building up monitoring mechanisms, creating seated cooperation and coordination with all interested parties.

The shifting two and single windows system of trade facilitation is a continuous system and it does not take place overnight. It takes longer period of time for shifting from one system to another. The evolution of trade facilitation systems are shown below in table-1.

Table-1 Evolution of Trade Facilitation System

Stage	Geographic Scope	Cases
Pre-single window Portals	National	Eighty-five Plus Countries (World – wide) Have Adopted UNCTAD's ASYCUDA platform
Single Window Portals	National	Australia (Trade gate) Hang Kung, China (DTTN) Japan (NACCS), Republic of Korea (KNet), Malaysia (Dagong Net) Singapore (Trade Net) Thailand (Trade Siam)
Regional, Multinational Portals	Multinational Regional	ASEAN Single Window Initiative
Global Portal	Global	Bolero.net (a precursor)

Source: The Electronic Journal on Information System in Developing Countries, 2014.

The successful implementation of the ICT-enabled trade facilitation system (Single Windows System) depends on the political will and commitment of government. Gender and better coordination among different stakeholders such as Government

capacities, private players in trade transactions and operations is also required. Trade procedures need to be more simplified. International conventions, standards, code and other instruments are also required. All the collaborations among various

stakeholders should be transparent for better implementation of the single windows system. The existence of a basic ICT infrastructure and spending in R & D and adoption of legal and regulatory frame workers for electronic processing are also needed for successful operation of ICT – enabled trade facilitation.

#### Conclusion

The knowledge economy is driven by the demand for higher value added goods and services created by more sophisticated, more discerning, and better educated consumers and businesses. Technological development has primarily been a supply side enabler. Globalisation acts as an accelerator that has speeded up the process on both sides. The defining features of a knowledge economy include:

1. A fundamental shift in investment priorities towards the creation and exploitation of knowledge and other intangible assets such as Research & Development, software, design, development, human and organisational capital as the basis of competitive advantage;
2. Cheap, powerful and pervasive general purpose information and communication technologies coupled with mass education to graduate level and beyond.
3. The distribution of market sector knowledge industry employment strongly favours parts of the South East, while the public sector based knowledge industries are more evenly distributed.
4. R&D has not increased as a share of GDP, primarily because of big falls in medium tech manufacturing and cut-backs in government departmental spending, and has become more intensely concentrated within high tech manufacturing and high tech services.
5. We will develop further what the evolution of the knowledge economy means for business and for the future development of the policy agenda

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