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Measurement of Electronic Commerce Effectiveness

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Abstract:
Electronic Commerce (Ecom) is now adopted by all the firms especially during the Covid 19 pandemic. Ecom is the process of buying and selling of products and services in an online environment with the help of telecommunicating devices. This research attempts to measure the role of Ecom in economic activity and in trade and tariff revenue collection. The share of value added that potentially lends itself to electronic trade represents around 45 percent of GDP, most importantly distribution, finance and business services. Ecom is also likely to increase sales in many services sectors drastically. Regardless of the growing importance of Ecom for economic activity and trade, tariff revenue loss from Ecom is likely to be minimal. The revenue collected on these products amounts to less than one percent of total tariff revenue in most countries. Even if some of this trade moved "online", tariff revenue loss would be only a very small share of tariff revenue.

Keywords:
International Trade, Services Trade, Tariffs, Tariff Revenue, Technological Change

INTRODUCTION

Electronic Commerce is growing as a means of doing business and shows every sign of continuing to expand at a rapid rate. The rise of this new medium is attracting increasing attention in policy circles. Nevertheless, a lack of adequate data on the magnitude and relevance of electronic supply has made policy-making decisions all the more difficult. Ecom can be divided into three stages: first, the pre-purchase stage including advertising and information-seeking; second, the purchase stage, including purchase and payment; and third, the delivery stage. In principle, all types of products can be advertised and purchased over electronic networks. The potential for electronic delivery, however, is more limited. It requires that a final product can be presented as digitalized information and transmitted electronically, typically over the Internet. Many services can be supplied as digitalized information, including financial transactions or legal advice. Some information and entertainment products typically characterized as goods, such as books, software, music and videos embody digitilized information that can also be supplied electronically over the Internet.

The importance of Ecom for financial practices

Ecom HAS become very important in terms of overall economic activity, and which are the sectors in which the greatest impact is likely to be felt? We can assess the potential importance of Internet-based Ecom from different angles. We can analyse what share of value-added in an economy is likely to be directly or at least strongly affected by growing Ecom , and especially the Internet. A similar analysis is possible with respect to intermediate inputs and final demand. From this, we can obtain a crude picture of the overall effect of Ecom on the economy, and which sectors are going to be most strongly affected. It should be emphasized at the outset that an analysis of this nature rests on a number of assumptions and must be treated as partly speculative.

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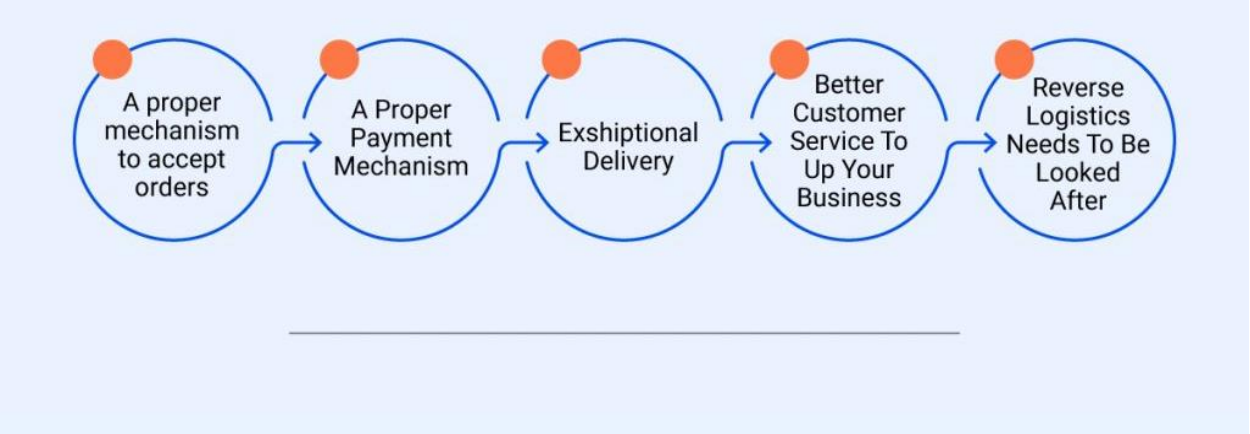


Figure 1. The process of Ecommerce working [1]

Communication services will probably be affected most strongly through the emergence of Internet telephony and other Internet services such as e-mail, video conferencing etc., as these complement or replace traditional mail or telecommunication services. Wholesale and retail trade will be affected by both the Internet as a new medium of exchange and the use of the Internet to rationalize logistics and other overhead expenses in these sectors. E-commerce will impinge upon some of the functions of wholesalers and retailers by connecting producers and consumers directly. Thus, they are likely to adopt new distribution methods to avoid being bypassed as a result of the information technology revolution. Ecom is also likely to transform the way many financial and business services are provided, including accounting, computing and advertising. On the other hand, some business services, such as doctors' visits, may not be much affected. Social and community services, including the provision of medical services and education will be affected to a degree, but probably not as much as a number of other sectors.

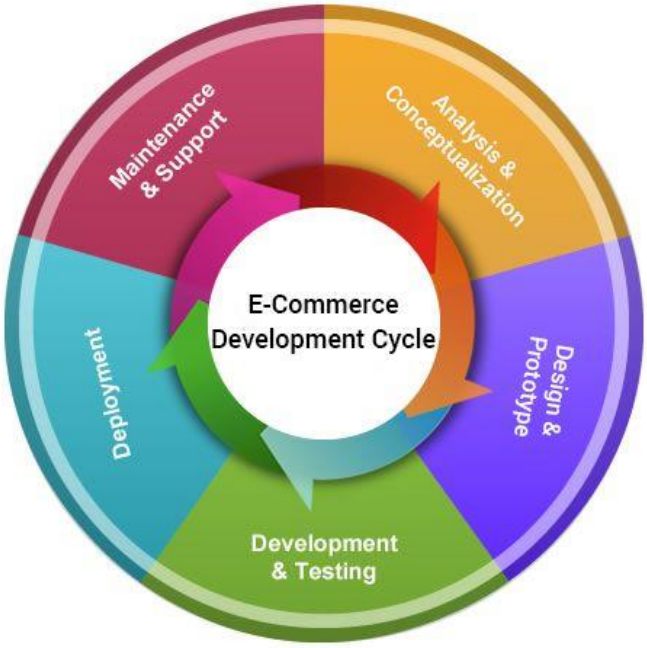


Figure 2. Ecommerce development Cycle [2]

Personal services such as household help, or government services such as primary

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education are unlikely to be much affected by Ecom whereas university education, tax collection etc. can move "online" to a greater degree.

Commerce in electronic media products

Considering that Ecom will play an important role in transforming large shares of the economy, it is worthwhile discussing how trade is likely to be affected by Ecom . Ecom will probably have most impact on two types of products. First, a number of products which traditionally have been delivered as "goods" can now be sent across networks in digital form. Second, Ecom will strongly affect trade in services. The former category of products is basically software and media products, and includes film, various types of printed material, video games and various recorded information on carrier media such as tapes, CDs, CD-ROMs and diskettes. Newer items entering trade on an increasingly systematic basis, such as software, have been progressively included in the categorization list under a number of previously existing codes, in particular under recorder media.

World trade in these products amounted to about US$ 44 billion in 2000, or less than 1 per cent of total world trade. Printed matter and recorded tapes, CDs, packaged software, etc. account for 60 per cent of the total. While the overall numbers are relatively small, trade in several products has increased rapidly in recent years. Average annual trade growth for digitizable media products was about 10 per cent between 2000 and 2001, 1.5 times as fast as total world merchandise trade. Trade growth in recorded media such as CDs and packaged software was still higher, at an average annual growth rate of almost 19%.

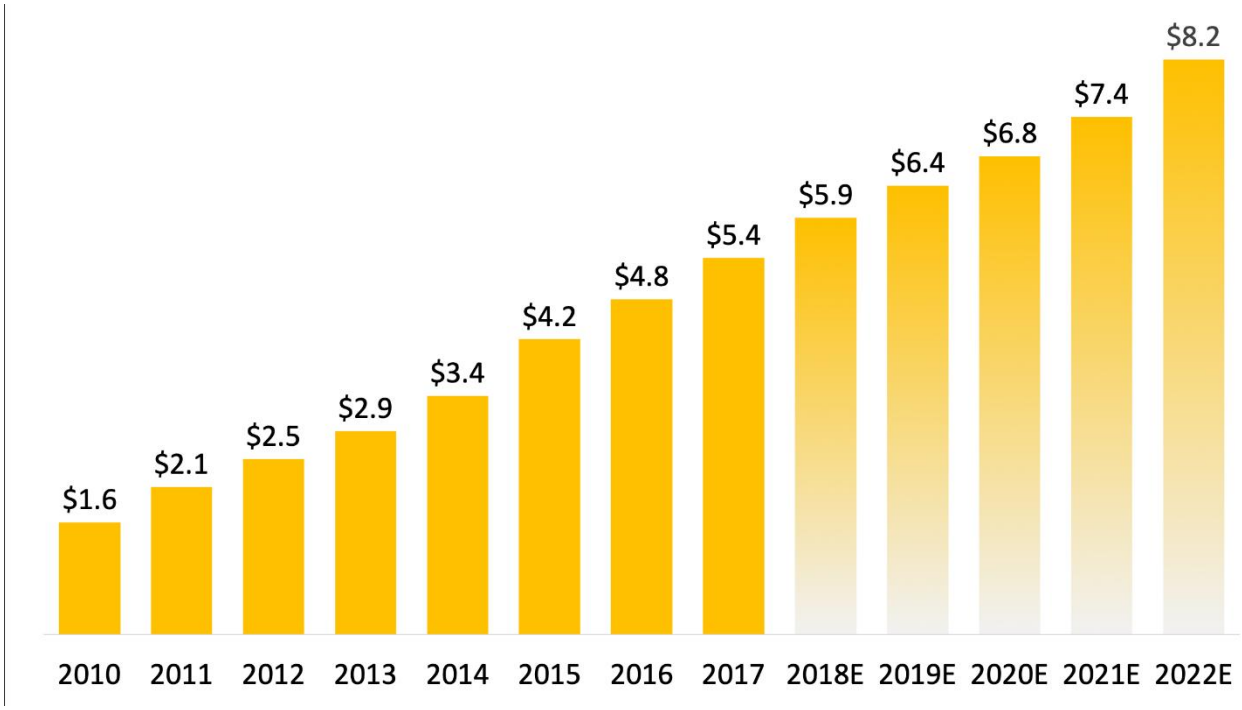


Figure 3. Ecommerce spending of US in the service market [3]

In addition, it is expected that only 65 per cent of the existing installed base of PCs and

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numerical control software will be connected to the Web by the year 2001. Nevertheless, increasing access to the internet is likely to result in stagnation, and possibly an eventual decline, in physical trade in these products due to their substitution by trade in electronic form. Even though a complete shift to trade on-line of electronic products is unlikely, the significantly lower prices offered through the Web should have a strong impact on the physical trade in these highly substitutable products.

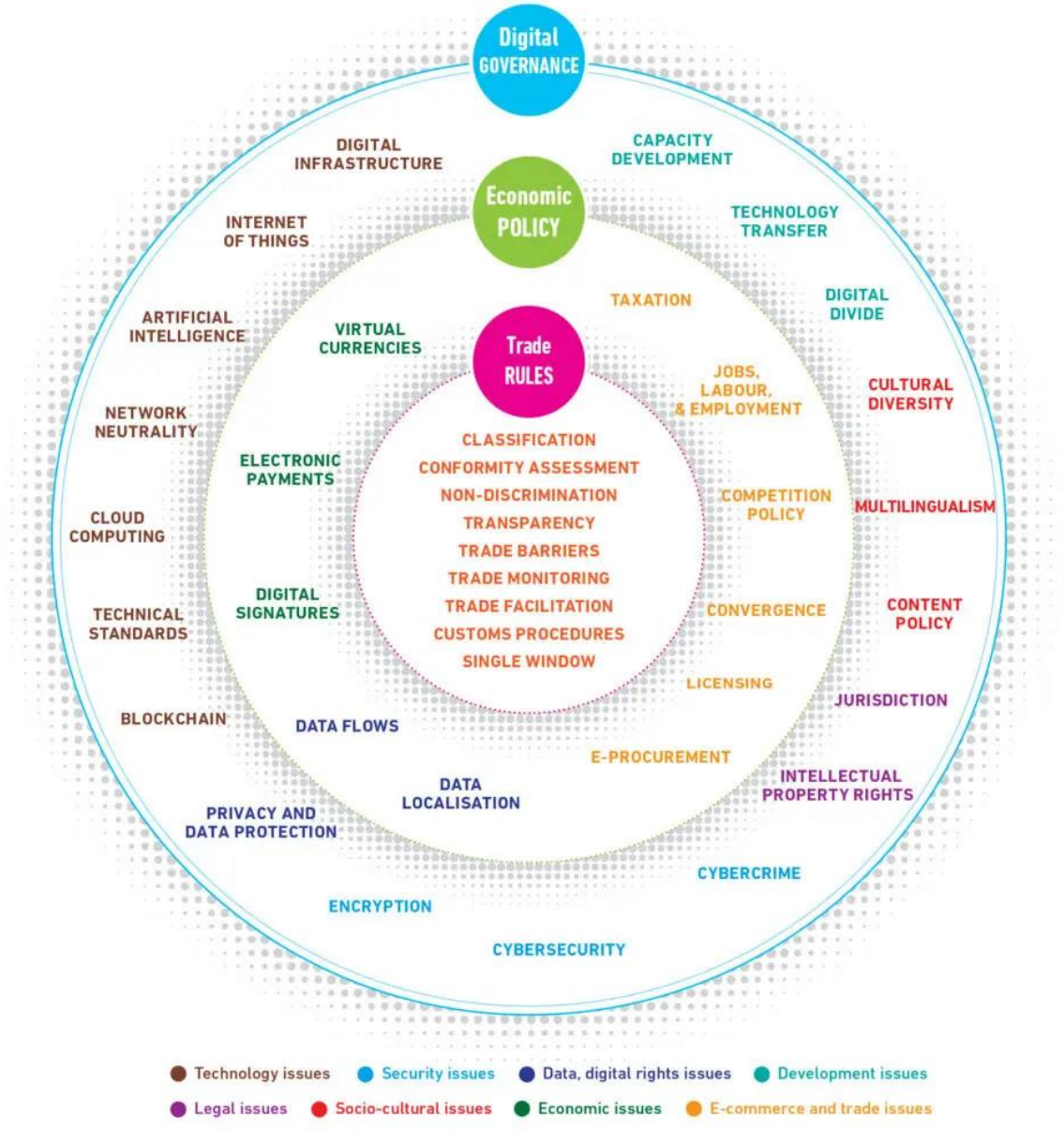


Figure 4. Ecommerce in financial practices [5]

Trade over networks reduces transportation and administration costs considerably, and many products including films and music, software and its upgrading are soon likely to be or are already downloadable over the Internet. Currently, retailing costs account for a large share of the price of such products when sold in a shop.

Implications of "duty-free cyberspace" for customs revenue

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What are the fiscal implications if international trade in digitizable products currently classified as goods shifts to the Internet, and if no tariffs are levied on such products? We have estimated the tariff revenue countries collect from these products.

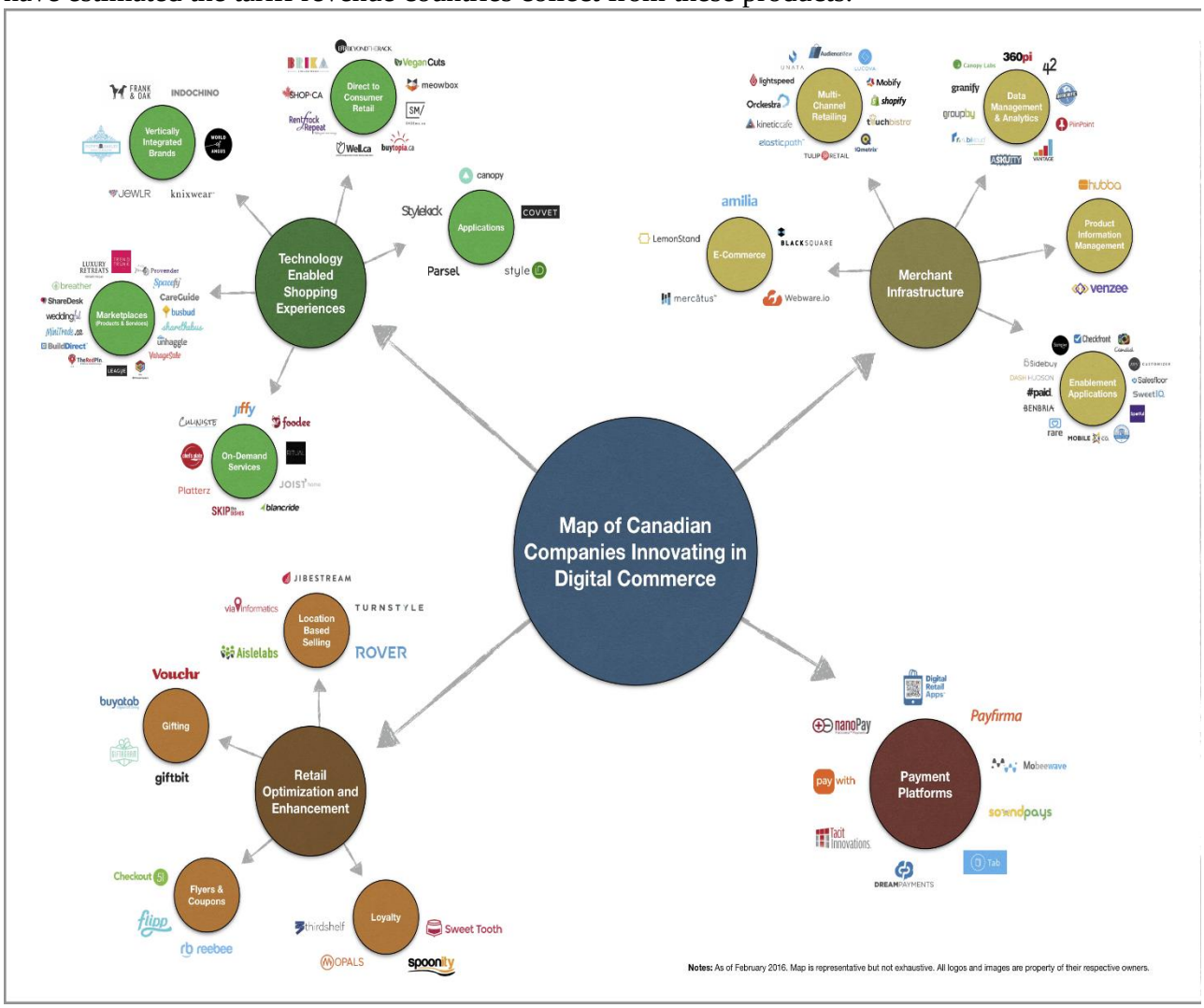


Figure 5. Ecommerce example for the country Canada [6]

The estimates take into account duty-free treatment of intra-EU, intra-NAFTA and Australia-New Zealand trade, and the reduced rates for intra-MERCOSUR trade. However, they are still likely to overestimate tariff revenue as they do not take into account other tariff reductions or exemptions.

Electronic services trade

Electronic delivery already plays an important economic and trade role in many services sectors. It has been crucial for the development of cross-border trade in services. Furthermore, where the supply of certain services across borders seemed unfeasible, such as in health related services, e-commerce has overturned this conception.

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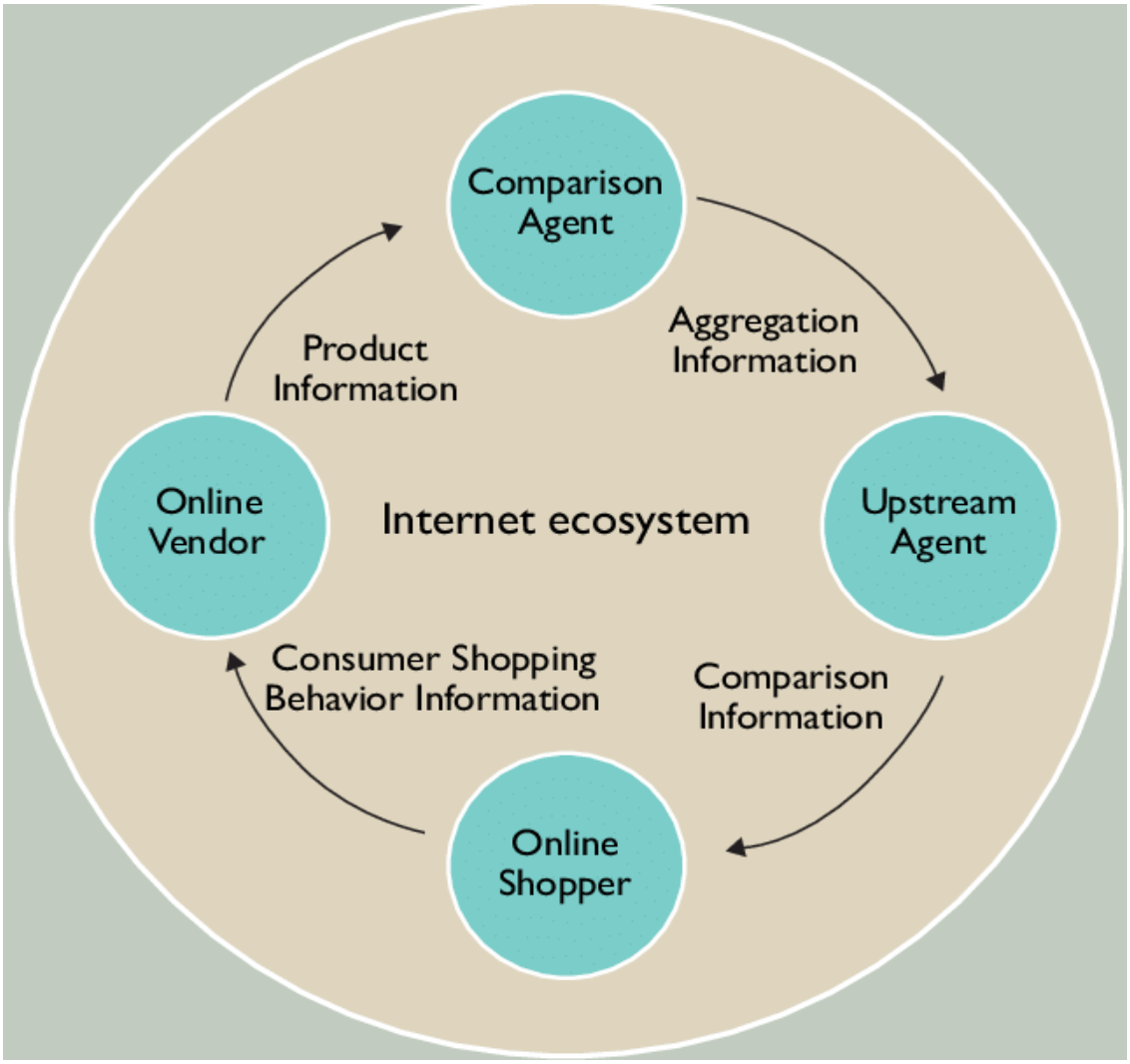


Figure 6. Ecommece ecosystem

E-commerce has led to the development of new forms of supply, such as telemedicine. Overall, the supply of services has been deeply modified by the information technology revolution. Legal advice is given by telephone, news services are transmitted by fax, payments are settled via electronic networks, not to mention that telephone, fax, etc. constitute communication services. Communication services, computer and information services, and a number of financial services and insurance services, as well as other business services are frequently conducted over telecommunication networks. The most important services sector for cross-border trade is "other business services".

Trade-openness in Ecom -related services

The development of Ecom could change this picture as many services will become tradeable more easily. Services trade, according to the WTO definition, also includes sales by companies' foreign affiliates. This is also sometimes referred to as establishment trade or "mode 3" trade under GATS. Affiliate trade data are very scarce and are often not directly comparable with balance-of-payments and national accounts data. The only country that provides relatively comprehensive data is the United States.

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Growth and future of Ecom

As previously noted, commerce in electronic media products has grown at a rate 1.5 times faster than total trade. Similar trends can be observed in relation to output and trade in Ecom -related service sectors. Output in communication services grew at two to six times the rate of overall economic output in Australia, France and the United States during the first half of the 2000.

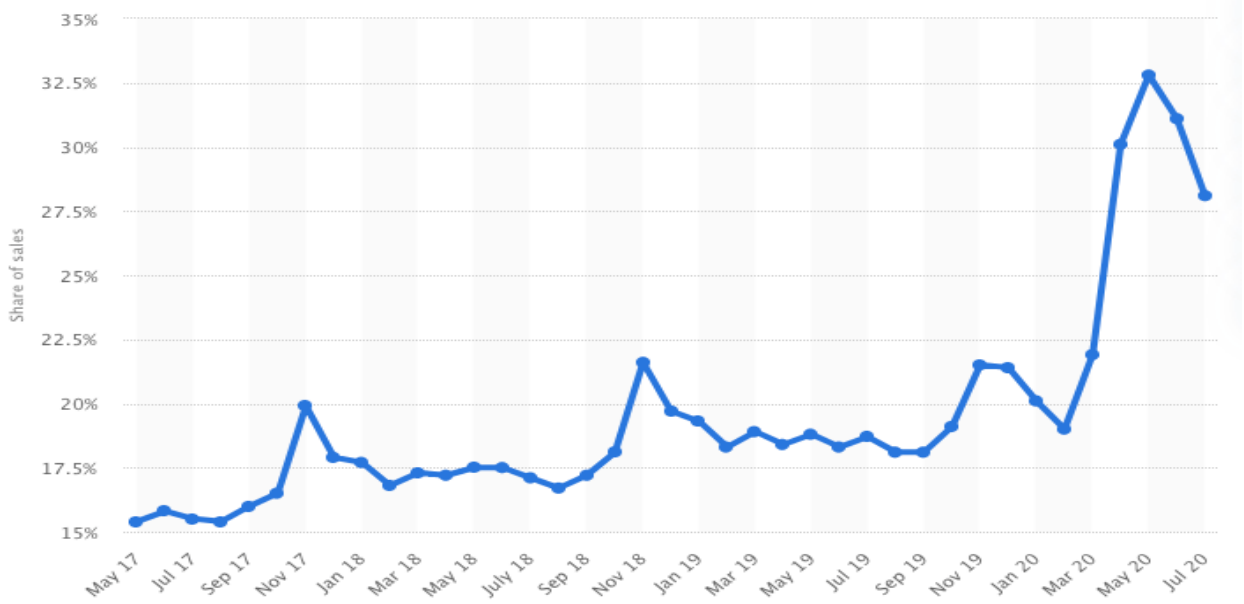


Figure 7. Growth of Ecommerce in the service sector [9]

This could be due to outsourcing (ATMs instead of clerks) or due to the use of deflators which do not fully take into account the price decline in many financial services in recent years. The well-documented rapid growth of international financial transactions in recent years was also due to the spread of electronic payments systems and other means of Ecom.

CONCLUSIONS

E-commerce already plays an important part in economic activity and its relevance will continue to grow. According to our estimates, the share of value added that potentially lends itself to electronic trade represents around 40% of GDP in services sectors. Three quarters of this is attributed to distribution, finance and business services. Although electronic provision will primarily affect service sectors, it will also play an important role in certain manufacturing sectors such as the pharmaceutical, telecom and clothing industries. As far as the delivery of products is concerned, the impact of Ecom will fall mainly on trade in services rather than trade in goods. According to our estimations, tariff revenue currently collected from these products represents on average less than 1 per cent of total tariff revenue and a meager 0.03 per cent of total fiscal revenue.

E-commerce will affect services trade more strongly than trade in goods. If we take the data available for cross-border supply of services, the mode of provision where electronic trade takes place, we observe that 30 per cent of world services trade currently takes place through this mode of supply. This represents 6 per cent of total world trade. However, trade in services is significantly less than trade in goods. Even if we include affiliate trade, that

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is, the production of Foreign Service suppliers in the territories of another Member, as we have done for the United States, trade openness in Ecom relevant sectors remains limited. This will gradually change with the adoption and development of e-commerce techniques by service suppliers world-wide.

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