

DIGITAL TRADE: PROPELLING TRADE INTO THE FUTURE

Gabriella Beaumont-Smith

In the 1990s, the World Wide Web changed everything. Until 1991, the National Science Foundation had restricted commercial use of the Internet.¹ Once such restrictions were lifted, the Internet increased the freedom of people all over the world by making it easier for them to share information and expand marketplaces. This was the beginning of e-commerce and, more broadly, digital trade. The capabilities of the Internet increased the freedom to trade—a key component of economic freedom.

The Internet gives people access to almost anything at the touch of their fingertips, pushing businesses to be more competitive and to advance innovative solutions. However, such freedom has sometimes faced roadblocks in the name of security, privacy, or law enforcement. More often than not, these issues are masks for protectionism. Digital trade is making traditional trade more efficient, enhancing the benefits that the freedom to trade has already brought to millions of people. Policymakers should refrain from erecting barriers that would reduce economic freedom and discourage innovation.

DEFINING DIGITAL TRADE

Before the 1990s, e-commerce and digital trade did not exist. The closest concept was teleshopping, popularized in the 1970s.² Then

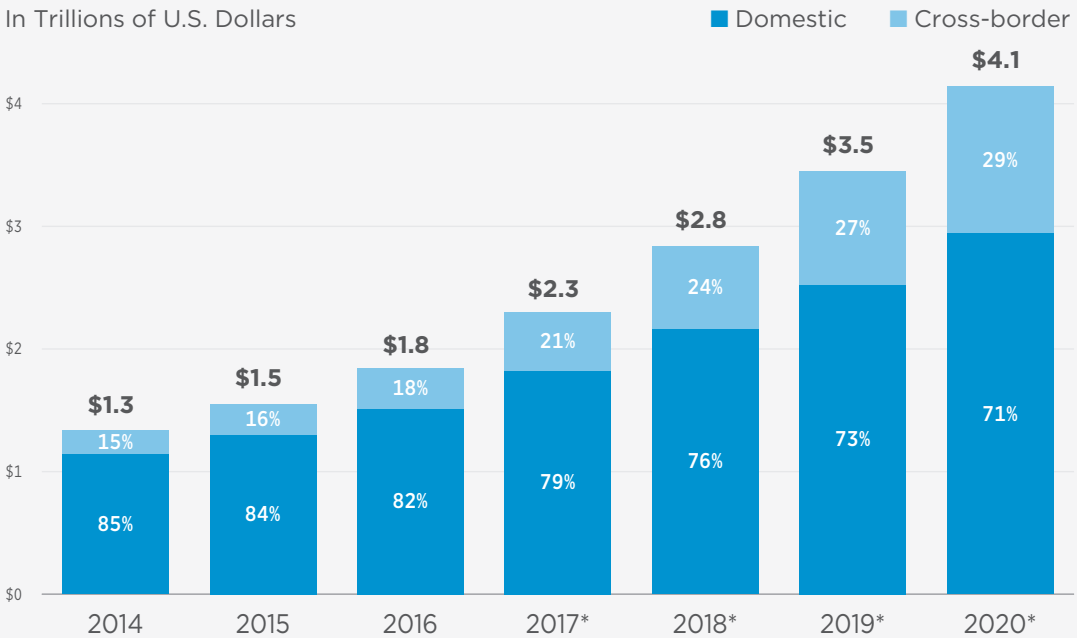
advances in computers made steps toward widespread digitalization possible. In the 1980s, personal computers became increasingly accessible, but early versions could be used only for video games, word processing, and programming; the Internet was not available for the public until 1991.³ Thus, e-commerce and digital trade were not possible until the Internet became widely available.

In 1995, Amazon.com was launched. Beginning as an online bookstore, it is now the world's largest online retailer. One of the most effective tactics that Amazon uses is reviews, a tactic now commonplace in online retail but groundbreaking in its infancy.⁴ Amazon is only one example of what was to come, and it is more accurately an example of e-commerce than of digital trade.

E-commerce is simply the buying of goods and services over the Internet; digital trade is broader. There is no standard definition of digital trade, but there is a consensus that it captures the sale of goods and services, data flows that facilitate global supply chains, services that power smart manufacturing, and other digital platforms and applications.⁵ Digital trade encompasses transactions that are digitally processed and digitally or physically delivered. It is increasingly important for the competitiveness of businesses.


GLOBAL BUSINESS-TO-CONSUMER E-COMMERCE

In Trillions of U.S. Dollars



* Projected

SOURCE: Sebastian Rovira, "The Growing Role of Data and Cross-Border E-commerce in the World Economy and Latin America and the Caribbean, Intergovernmental Group of Experts on E-Commerce (IGE) and the Digital Economy," ECLAC, p. 5, April 3, 2019, https://unctad.org/meetings/en/Presentation/tdb_edc3_2019_p04_SRovira_en.pdf (accessed August 15, 2019).

Chart 1  heritage.org

DIGITALIZATION TRANSFORMING SUPPLY CHAINS

Digital trade can, of course, involve transactions that occur within a single country, but the term is more generally understood to involve transactions that involve cross-border data flows.⁶ Such flows are the foundation of trade in services and increasingly support trade in goods. By 2020, global e-commerce directly from business to consumer (B2C) is projected to reach \$4.1 trillion, 30 percent of which will be cross-border—double the amount seen in 2014. (See Chart 1.)

These projections illustrate how important data flows are to trade freedom. Data is an informational tool for businesses that supports production and makes supply chains more efficient. However, data itself can also be traded.

Trading data makes the production process more efficient because it organizes the important information upon which businesses rely in making investment decisions. Customer responses to products, for example, can be used to determine trends in purchasing and whether investment is needed to improve or discontinue a product or production should be increased. Collecting such data allows firms to meet their customers' needs more effectively.

Almost all businesses are partially digitally enabled,⁷ and digitalization has become a crucial feature of competitiveness on the international market. Digitalization can support scale and scope by increasing the speed of trade, not only in the final sale transaction stage, but also in facilitating payments, enabling collaboration, finding alternative funding mechanisms

such as crowdfunding, and avoiding investment in fixed assets by using cloud-based services.⁸ These options are made possible by the Internet of Things (IoT), which consist of devices that are connected to the Internet. The IoT connects over 5 billion objects, including (among others) cars, refrigerators, locomotives, airplanes, and buildings. It is estimated that by 2024, 27 billion devices will be generating and transferring data across rooms and borders.⁹ This access to data will help small businesses to break into markets and help businesses to run more efficiently.

The manufacturing sector has seen enormous gains because of digital trade. The sector creates more data, at every stage of the supply chain, than any other sector in the U.S. economy. Businesses rely on the data from research and development, factory operations, and services to evaluate productivity and cost efficiency. Metal companies such as steelmakers use data and the IoT to analyze the physical properties of raw materials and constraints of production plants to help them find ways to improve efficiency and reduce energy consumption.¹⁰

Technological innovation and evolving business models are blurring the lines between businesses that produce goods and businesses that produce services, creating companies that produce and supply a combination of both. For example, if a business in the United States wants a product printed by a 3D printing company in the United Kingdom, a cross-border service is taking place because of the design aspect of 3D printing. Once the printed product is shipped to the U.S., it is now a good being traded.

Digitalization can allow a company to provide both a good and a service in the same transaction. Smart refrigerators, for example, are a good embedded within a service. A company that produces smart refrigerators may produce both the physical appliance and the embedded software, or it may contract with a software company to embed the service into the product.

BARRIERS TO DIGITAL TRADE FREEDOM

Data Localization and Restrictions on Cross-Border Data Flows. Some governments are using digitalization as a protectionist tool. Examples include implementing data localization requirements or restricting cross-border data flows.

- Data localization is a type of regulation that requires a business operating in a territory to store the data it collects in a computing facility in that territory.
- Restrictions on cross-border data flows involve a range of regulations that restrict or prohibit what is considered to be routine cross-border transfers of information.

All of these regulations negatively affect cloud computing and cloud-based services, the purpose of which is to provide information from anywhere.

Cloud computing is a network of remote servers hosted on the Internet so that data can be stored, managed, and processed more efficiently than is possible on a local server or personal computer. Cloud-based services can be used on the Internet on demand from a cloud computing–provider’s servers. These different servers can be anywhere because of the Internet and create a network infrastructure that underpins the digitalization of other services. Businesses and global supply chains rely on cloud computing and services because they increase the access to and delivery speed of information that is necessary for production and supply.

Data localization is defended by policymakers for a variety of reasons. The most common involve cybersecurity and privacy. However, physical location is not likely to protect data. Data localization increases costs by preventing firms from transferring data that is needed for day-to-day activities. Firms may pay for duplicative services or increase expenditures “on compliance activities, such as hiring

a data-protection officer, or putting in place software and systems to get individuals' or the government's approval to transfer data."¹¹ Requiring businesses to store data in a specific territory burdens them with additional costs, both because they need the necessary infrastructure in that territory and because they need to be sure that they are in compliance with the law. These additional costs reduce trade freedom and undermine a firm's competitiveness.

A growing number of jurisdictions are introducing or strengthening data localization requirements. For example:

- China has prohibited foreign companies from providing cloud computing services directly to customers in China. In addition, if foreign suppliers of services wish to enter the market, they must work with a Chinese company and share all technology, intellectual property, and brands.¹²
- In October 2018, India implemented a measure that required suppliers of payment services to store all information related to electronic payments made by Indian citizens within India. India has been a hub for information communication technology (ICT) and business services companies for decades because of its cheap skilled labor. However, the government has stated that it needs to exert more control over its citizens' data for national security and commercial reasons. If businesses do not store data in India, government officials will have to submit requests to foreign technology firms, creating bureaucratic burdens. It seems that India's data localization policies are driven by digital protectionism as it tries to encourage the development of Indian technology companies.¹³
- In Indonesia, categories of data that are subject to data localization rules have been expanded, and any provider of a "public service" must establish local data centers and disaster recovery centers.¹⁴
- South Korea restricts the cross-border use of cloud computing for financial services, which is a serious impediment to market access for foreign companies.¹⁵
- Nigerian laws force businesses to store any data in Nigeria that concern Nigerian citizens and require businesses to host any governmental data locally unless exemptions are granted.¹⁶
- Electronically collected data on Russian citizens must be processed and stored in Russia. Numerous Internet protocol (IP) addresses that are associated with U.S. cloud services have been blocked, and because of this, U.S. firms must consider whether the Russian market is worth the legal uncertainty.¹⁷
- Saudi Arabia has a framework for cloud computing that requires cloud and other ICT companies to install government filtering software and localize certain data.¹⁸
- Turkey limits the transfer of personal data abroad, requires suppliers of electronic payment services to maintain information systems in Turkey, and requires any publicly traded company to keep its primary and secondary information systems and data in Turkey.¹⁹
- Vietnam passed a cybersecurity law that forces online service suppliers to store data in Vietnam.²⁰

A recent study found that imports of services would rise on average by 5 percent across all countries if restrictions on cross-border flows of data were lifted.²¹ Cross-border data flows are important for services such as advertising: "For instance, advertising on search engines such as Google and Bing bring[s] together overseas buyers and sellers and is often how consumers learn of the goods and services available in other countries."²² This increases consumer choice.

Cross-border data flows are also important for financial transfers and communications, which are key to increasing trade freedom.

However, many countries are restricting cross-border data flows. China has implemented a policy to restrict data flows that include a broad range of information falling into the undefined category of being “important.”²³ South Korea restricts the export of geo-location data. This is disadvantageous for foreign companies that incorporate services like traffic updates and navigation into their products.²⁴

Data localization policies and restrictions on cross-border data flows are protectionist in nature and reduce the freedom to share information across borders. Requiring businesses to use local data centers fractures their ability to compete. The Internet has given businesses of all sizes an easier and more efficient way to break into the international market, and data localization and restrictions on cross-border data flows threaten this progress. They raise costs and, in response, disrupt services. As a result, some firms may exit the market, thereby reducing competition and artificially ceding dominance to domestic firms. Reducing trade freedom in the digital sector will stunt growth and harm consumers who benefit from the varieties of goods and services that a competitive industry can provide.

Digital Taxation. Taxation has typically been based on physical location. However, as physical location is ambiguous when it comes to the Internet, policymakers have claimed that physical location is no longer an appropriate standard. Physical location matters for tax purposes because local governments are better equipped with cultural knowledge to estimate the impact of a tax on an industry. Destination-based taxes give distant politicians the ability to involve themselves in local affairs, threatening individual liberties and thereby reducing economic freedom.²⁵

Digital taxes have been floated in the European Union (EU)²⁶ and Indonesia. The European Commission proposed a directive to member states about levying a tax on the revenues of

large companies from digital services, including online advertising, online marketplaces, and data services, even if they did not have a physical presence in the EU.²⁷ As the tax would be revenue-based, it is economically inefficient because it could be imposed on a firm that has no net income in the jurisdiction yet is still required to pay the tax.²⁸

Digital services benefit Europeans because they allow companies to tailor products to their customers. The digital tax would likely cause companies to increase prices so that the cost falls on their customers. This adds risk and administrative burden to doing business in a foreign market, as well as expense, thus reducing trade freedom and competition in the digital sector.

Indonesia implemented a new regulation that establishes tariff lines for digital products that are electronically transmitted, including software, apps, videos, and music. The tariffs are currently set at zero, but duties could be imposed in the future. Indonesia’s regulation may violate a World Trade Organization commitment (the Declaration on Global Electronic Commerce) not to impose duties on electronic transmissions.²⁹

Digital protectionist measures such as these are limited only by the imagination of potential beneficiary companies and national authorities. There is no doubt that finding and enforcing measures to ensure data openness and freedom will play an increasingly important role in trade negotiations and disputes in the future.

BLOCKCHAIN AND INTERNATIONAL TRADE

Blockchain could be one solution to the tradeoff between the free flow of data and privacy. Blockchain is a virtual distributed ledger that records transactions held by multiple distinct parties. It is connected by nodes, which are devices such as a smartphone or computer. These distributed nodes securely add and store transaction data, creating a full blockchain transaction history that is recorded across the numerous participating nodes.³⁰

New information must be added by consensus.³¹ Consensus removes the need for a centralized third-party authenticator. Any new transaction is considered new information, and “a majority of nodes must confirm the history over which the new information will be built.” Following this confirmation, “the blockchain log is then updated across all nodes.”³²

This process is important because it illustrates the key attribute of blockchain: encryption. Encryption makes it extremely difficult to tamper with new and stored data because only authorized parties can access the information. As there is no centralized third party recording transactions, it becomes very difficult to hack or steal information. The combination of encryption and the distributed ledger results in trustworthy and efficient cross-border data flows. Users can freely transfer information knowing that it is protected by incorruptible code and validated by numerous other users.³³

Blockchain may also play a role in easing cross-border processing and increasing the speed of delivery. Improved efficiencies from digitalization need to be met with evolving procedures at the border, primarily in the area of providing customs forms and payment options online.

Blockchain could be widely applicable in this area. The distributed ledger is a communication tool and could help inspectors to verify that a shipment has been inspected and is compliant with regulations,³⁴ helping customs and law enforcement to detect illicit trade and mitigating risks.³⁵ It could also be used by a carrier to verify receipt of cargo, log temperature, and track GPS data while a shipment is in transit.³⁶ In short, using blockchain could reduce the bureaucratic burden for traders and make procedures more efficient, allowing customs

officials to increase the speed and accuracy of accepted shipments.

Finally, as policymakers aim to increase economic freedom through trade liberalization, more businesses are attracted to the international market. This can exacerbate the traditional and often difficult problem of determining the provenance of traded goods. Through the distributed ledger, blockchain could help supply chains to manage information about the origin and movement of goods in real time.³⁷

CONCLUSION

The Internet has been integral to increasing the trade freedom of individuals and businesses worldwide. Digital trade may be expanding beyond the Internet, but it also would not be possible without it. Digitalization is facilitating the speed at which the global economy is integrating, providing businesses with better resources and consumers with better products.

However, the borderlessness of the digital economy has brought new waves of policy issues. Admittedly, important matters such as security, privacy, and law enforcement must be considered in international trade; however, digital protectionism is not the solution.

Several recent trade agreements have addressed digital trade, including provisions that ban data localization, restrictions on cross-border data flows, and the forced transfer of source code. Trade liberalization and digitalization enhance the benefits of trade. The freedom to trade has increased living standards around the world and pulled millions out of poverty. Embracing digital trade will propel this effort, increase transparency, and help countries to hold each other accountable for illegitimate trade actions.

ENDNOTES

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