

# E-commerce Trade and Data Localization: A Developing Country Perspective

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## Abstract

*This article explores the issue of data localization by capturing all relevant debates and discussion around it. It investigates issues related to data management, storage, and ownership, followed by the data safety and security concerns of developing countries in a rapidly changing digital world. Storing data locally can be an effective way to tackle these concerns.*

*Data localization can bring the data storing market price down. It can inject sufficient incentive to spur technological innovation in the system. If workable templates of data safety and privacy frameworks can be built locally, consumers' rights will also be protected. Data localization also has the potential to positively contribute to effective redressal of damages in developing countries related to data leakage.*

*The COVID-19 pandemic has considerably sharpened existing conflicts in the e-commerce ecosystem. Treating this crisis as an opportunity and pushing for digital data safety and security by means of data localization is the ideal strategy for developing and emerging economies to adopt.*

**Key words:** e-commerce; digital economy; data localization; trade; data security; COVID-19 pandemic

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## Introduction

Electronic commerce, or “e-commerce,” provides freedom for customers to browse through products and services on the Internet and then buy those without leaving their homes or offices, thus increasing access and convenience. Through online sales, e-commerce businesses have been able to scale efficiently and capture new customers hitherto unreachable – both in domestic and foreign markets. Online business is bound to replace some traditional retail business; it is also anticipated that it will capture new sales and customers. Some estimates anticipate global e-commerce will add \$1.3 to \$2.1 trillion to international trade by 2030, boosting global trade in manufactured goods by 6% to 10% [Fefer, 2019].

The COVID-19 pandemic has further opened the horizon for e-commerce in the past few months. As country after country goes through different phases of lockdown and imposes often severe economic and social restrictions, online purchase of important household items, food and healthcare products, and online financial transactions have provided a huge spur to global e-commerce.

In the initial days of e-commerce, it was expected to be an equalizer allowing smaller enterprises to find new customers and markets. However, the reality has largely been different.

Wide and lopsided digital divides exist in the global digital and e-commerce space within and across the countries. The pandemic has further exposed and sharpened these divides.

One of the major contentions in the international digital world has been the issue of data localization. Technologically advanced countries, and the digital and e-commerce multinational behemoths located in those countries, fiercely oppose data localization. The main reason for opposition is cited as trade barrier, though actually it is the possibility of escalation in operating costs.

However, until now, countries that provide large consumer markets to multinational e-commerce entities generally have not benefited reciprocally from the flourishing e-commerce business in terms of employment, technological development or other long-term value additions to the economy. Further, data breaches in these multinational digital companies have revealed the unsafe and insecure nature of data management and storage. In the absence of data localization norms, zero redressal or compensation is received by affected consumers. Data breaches seriously compromise the personal and financial data of individual consumers. However, if such breaches occur often, consumers do not even know the extent of the ill effects on their personal and financial safety.

The data safety and other security concerns around digital data for developing countries are often not highlighted as the international digital ecosystem revolves around the two largest economies, the U.S. and China. The missing developing country perspective amid the cacophony of worldwide noise about digital technology is the principal theme of this article.

This article explores the issue of data localization by capturing all relevant debates and discussion around it. First, it traces the evolution of e-commerce in the new millennium and describes the current state of affairs in global e-commerce. Then it plunges deeper into the issues related to data management, storage, and ownership, followed by a discussion of the data safety and security concerns of developing countries in a rapidly changing digital world. This article also considers the drastic changes that have occurred in the digital world due to the rapid spread of COVID-19 and concludes by making a strong case for data localization in host countries.

## Global Trade in E-Commerce

The positive impact of e-commerce is supposed to fall on firms, prices and productivity. It was expected to open new avenues for companies to examine and reinvent their supply chain strategies. The Internet and its various applications, in a way, bolstered efficiency in supply chain operations and management. Information and communication technology (ICT) enables firms to locate sources of inputs and markets for output. It also reduces the cost of collecting and processing information about the prices and input characteristics of different goods and services. ICT also enables companies to easily integrate and control remote operations without incurring prohibitive costs. Thus, the separation of activities in production processes to entities in low-cost destinations enables firms to both lower prices and increase overall productivity [ECLAC, 2002].

However, the expectation of lowered product prices, when empirically tested, produced mixed results even during the initial days of e-commerce in the late 1990s. Some of the very early studies found prices of certain products to be higher than what traditional retailers charged, but another study found prices for books and CDs on average to be 10% cheaper in the United States. Estimation of price elasticities of demand also evoked different results – some suggesting low elasticity, some high [Brynjolfsson, Smith, 2000; Degeratu, Rangaswamy, Wu, 2000; Goolsbee, 1998]. This implies that the evidence of positive linkage between e-commerce and price/productivity has been inconclusive.

Even at the beginning of the new millennium, it was clear that global diffusion of Internet and allied technology would result in an explosion of e-commerce, particularly business-to-business (B2B) e-commerce. This was also expected in the free movement of goods, services, capital, technology and people across borders. As e-commerce volume grows further, business-to-consumer (B2C) e-commerce is likely to grow in the future [Kshetri, Dholakia, 2002].

The flourishing of international trade through e-commerce also depends on the nature of the product. Media products, such as text, film, computer software, or even books can be traded internationally with reasonable profit margins for producers and relatively lower prices for consumers. But there will always be goods that will not have those advantages for producers and consumers if delivery has to be made internationally – particularly where transportation costs play a major role. Services trade, on the other hand, is immensely benefiting from e-commerce. Many previously non-tradeable services, such as research and development, computing, inventory management, and quality control are now tradeable. International cross-border trade on a variety of hitherto non-tradeable services in financial, legal, telecom and software areas are now undertaken by electronic means [ECLAC, 2002].

However, these were all expectations at the beginning of the millennium. A study conducted at the end of the first decade of the millennium found that trade and employment gains were likely to be concentrated in the developed countries in the short run, and the developing countries were expected to catch up in the long run. Despite the increase in volume of international trade in e-commerce, jobs in the sector were expected to be simultaneously created and destroyed in both developed and developing world [Terzi, 2011].

By 2019, the digital world was characterized by a huge gap between the under-connected and the hyper-digitalized countries. While in the least developed countries (LDCs) one in five people uses the Internet, four out of every five people in developed countries do so. This is the extent of the digital divide. The economic geography of the digital economy is practically now centred around one developed and one developing country – the United States and China. These two countries hold 75% of all patents related to blockchain technologies and more than 75% of the world market for public cloud computing; together they account for 50% of global spending on Internet of Things (IoT) [UNCTAD, 2019]. They also account for 90% of market capitalization value of the world's 70 largest digital platforms, while Europe's share is 4%, Africa and Latin America's share together is a mere 1%. Seven "super platforms" (Microsoft, Apple, Amazon, Google, Facebook, Tencent and Alibaba) together account for two thirds of the total market value [Ibid.]. So, practically there is no race, only two countries are competing with each other in digital market capture and e-commerce trade.

The combined value of the digital platform companies with a market capitalization of more than \$100 million was estimated to be more than \$7 trillion in 2017. That is 67% higher than the value in 2015. There are quite a few reasons behind the rapid rise of these digital giants. First, there is a network effect (more the users, more the value); second, the ability of these platforms to extract, control and analyze data, and then use those analyses for their benefits; third, the ability of these platforms to quickly diversify their services increases the user costs of switching to an alternate service provider. Most importantly, global digital platforms have increasingly consolidated their positions by taking over other digital platforms and services, as when Microsoft acquired LinkedIn or Facebook acquired WhatsApp and Instagram. This gives these bigger companies additional market share advantage. Alphabet (the holding company of Google) and Microsoft also invested in telecom equipment companies Motorola and Nokia [Ibid.].

By a textbook definition, these market consolidations lead to monopoly or oligopoly market powers. In simple terms, bigger digital giants can outprice and outcompete any potential competitor and finally drive them away from the market. For example, Facebook can keep

WhatsApp as a free chat app but can mine its data to produce precisely targeted advertisements in Facebook (not saying here that Facebook is exactly doing that). This will reduce the chances of success of many potential competitor chat apps in different countries. In future, if the company acquires stakes in e-commerce retail companies worldwide (which Facebook is actually doing), then this kind of data mining advantage may kill a lot of competition instantly.

Contrary to initial expectations, e-commerce or digital retailing has not yet created benefits for smaller operators in a big way, neither has it resulted in any sizeable gain for e-commerce in developing countries. The yawning gap between the under-connected and hyper-digitalized countries has grown bigger and bigger and unless addressed it is likely to result in a huge worldwide digital inequality.

Technology, contrary to popular notions, by itself is not an equalizer in market mechanisms. It results in monopoly and oligopoly power in no time (as we are seeing now), unless the government intervenes with policies to spread technological benefits equally across the society. Possession and control of data will hold the key to future monopoly and/or oligopoly powers in e-commerce and digital platforms. Data is the new form of digital and e-commerce capital. Those who own the personal and private data of millions – or billions – of users will have an immense advantage in this race to create new monopolist or oligopolist digital behemoths worldwide.

Therefore, the storing or localization of data is not just another nationalistic issue proposed by a few countries; rather this is an issue related to the creation of fair and just international digital and e-commerce markets as well. If regulatory interventions are not made, then ownership of data may also lead to breaches of the security and safety of any country and its citizens.

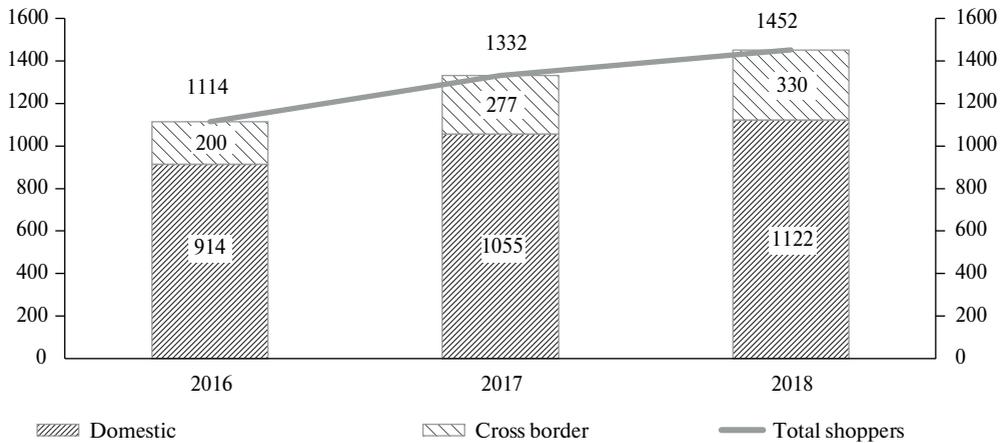
## The Current State of Affairs in Global E-Commerce

Measuring the size of e-commerce sales is a big challenge. Non-availability of data is another hurdle. More governments across the world are now collecting information, but most do not publish official statistics. The United Nations Conference on Trade and Development (UNCTAD) has updated its methodology to estimate the sizes of e-commerce across countries and came out with its global e-commerce report for the year 2018 recently.<sup>1</sup>

According to UNCTAD [2020], 1.45 billion people made purchases online in 2018 (Fig. 1). That is one fourth of the world's population in the age bracket of 15 years and older. The growth rate is 9% higher compared to 2018. The number of online shoppers is the largest in China at 610 million. The majority of these shoppers buy from domestic suppliers, but the number of cross-border purchases are steadily increasing. Around 330 million shoppers purchased across borders in 2018, which means a little more than one in five online shoppers made cross-border purchases. The share of cross-border online shoppers in total was 17% in 2016, and it increased to 23% in 2018. These are all rapidly growing figures.

Global e-commerce growth is predominantly driven by B2B sales. Total global value of both B2B and B2C sales was almost \$26 trillion in 2018 – higher than any individual country's GDP. This is an increase of 8% from 2017 and accounts for 30% of global output. The United States remains the largest e-commerce market, followed by Japan and China (Table 1). The value of B2B e-commerce was \$21 trillion or 83% of total global e-commerce, clearly establishing the fact that this segment is the current engine of e-commerce growth.

<sup>1</sup> Due to changes in its methodology and country revisions to their 2017 data, 2018 UNCTAD estimates are not exactly comparable with earlier estimates.



**Fig. 1.** Global Online Shoppers, 2016–18 (Millions)

Source: [UNCTAD, 2020].

The B2C segment totalled \$4.4 trillion in 2018, rising 16% over 2017. While the U.S. is the undisputed leader in the B2B segment, China leads the B2C segment, followed by the U.S. and the UK. Interestingly, China's own B2C segment is much larger than its B2B segment. In other words, China is selling more to individual consumers than to businesses in its own markets and other countries. So, any future growth in the B2C segment is expected to benefit the country.

*Table 1.* E-Commerce Sales of Top Ten Economies in 2018

	Total E-Comm sales, \$ Billions	Share of Total E-Comm Sales in GDP, %	B2B E-Comm Sales, \$ Billions	Share of B2B E-comm Sales in Total E-Comm, %	B2C E-Comm Sales, \$ Billions
U.S.	8,640	42	7,542	87	1,098
Japan	3,280	66	3,117	95	163
China	2,304	17	943	41	1,361
Korea	1,364	84	1,263	93	102
UK	918	32	652	71	266
France	807	29	687	85	121
Germany	722	18	620	86	101
Italy	394	19	362	92	32
Australia	348	24	326	94	21
Spain	333	23	261	78	72
<i>Top 10</i>	<i>19,110</i>	<i>35</i>	<i>15,772</i>	<i>83</i>	<i>3,338</i>
<i>World</i>	<i>25,648</i>	<i>30</i>	<i>21,258</i>	<i>83</i>	<i>4,390</i>

Note. Figures in shades are UNCTAD estimates.

Source: [UNCTAD, 2020].

A clear global trend is emerging in the B2C segment – developing and transition economies mainly drive the sales. These economies cover approximately half of the B2C sales of the top 20 economies. The U.S., however, contributes significantly here also (Table 2). The engagement of Internet users in online purchases varies significantly among these top 20 economies. While in the United Kingdom 87% of Internet users shopped online in 2018, the number of online purchasers as a percent of total Internet users has been much lower in Thailand (14%) and India (11%).

Table 2. B2C E-Commerce Sales of Top 20 Economies, 2018

	<b>B2C E-Comm Sales, \$ Billions</b>	<b>Share of B2C E-Comm Sales in GDP, %</b>	<b>Online Shoppers, Millions</b>	<b>Online Shoppers (as % of Internet Users)</b>
China	1,361	10.0	610	73
U.S.	1,091	5.3	189	80
UK	266	9.3	41	87
Japan	163	3.3	49	49
France	109	3.9	36	75
Korea	102	6.3	27	60
Germany	101	2.6	54	82
Spain	72	5.1	21	62
Canada	44	2.6	24	84
Hong Kong	38	10.4	2	38
Italy	32	1.6	18	47
Netherlands	28	3.1	12	84
Thailand	27	5.3	5	14
Mexico	26	2.1	24	33
Ireland	22	5.7	2	70
Australia	21	1.5	12	73
Russia	20	1.2	30	34
Malaysia	19	6.0	15	53
India	17	0.6	27	11
Brazil	15	0.8	39	34
<i>Top 20</i>	<i>3,574</i>	<i>5.3</i>	<i>1,193</i>	<i>55</i>

*Note.* Data for some economies are from supply-side surveys that include overseas sales (exports) but not overseas purchases. Data for other economies are from demand-side surveys that include purchases by consumers from overseas (imports) but not foreign sales by companies. Hence the data is not directly comparable and should therefore be interpreted carefully.

*Source:* [UNCTAD, 2020].

The locations of the top 20 companies driving B2C e-commerce reveal the power equation in e-commerce more clearly. Most of these companies are based in China and the U.S. (Table 3). These top 10 companies generated almost \$2 trillion in gross merchandise value

(GMV)<sup>2</sup> in 2018. In terms of GMV, Alibaba outcompeted Amazon in 2018. While Alibaba had a GMV of \$866 billion, Amazon had a GMV of \$277 billion. In terms of revenue, though, JD.com and Amazon were way ahead of Alibaba. It is likely that capturing market share by lower pricing remains the motto of Alibaba. That intention is quite clear if one looks at the margin percentage of these companies. While the margins for JD.com and Amazon are 27.6% and 21.4%, respectively, Alibaba's margin in contrast is a mere 4.7%.

Table 3. Top 10 B2C E-Commerce Companies by GMV, 2018

Company	Based In	Industry	B2C Revenue, \$ Millions	GMV, \$ Millions	Margin, %
Alibaba	China	E-commerce	40,383	865,634	4.7
Amazon	U.S.	E-commerce	59,372	277,000	21.4
JD.com	China	E-commerce	69,834	253,463	27.6
Expedia	U.S.	Internet media & services	11,223	99,727	11.3
eBay	U.S.	E-commerce	10,746	94,580	11.4
Booking Holdings	U.S.	Internet media & services	14,527	92,731	15.7
Meituan Dianping	China	Internet media & services	9,589	77,933	12.7
Uber	U.S.	Internet media & services	11,270	49,799	22.6
Shopify	Canada	Internet media & services	1,073	41,103	2.6
Rakuten	Japan	E-commerce	3,740	30,836	12.1
Top 10			232,028	1,882,806	12.3

Note. GMV = Gross Merchandise Volume/Value, Margin = B2C revenue as a share of GMV.

Source: [UNCTAD, 2020].

Cross-border B2C e-commerce sales totalled \$404 billion in 2018, clocking a 7% increase over 2017, if sales of top 10 economies by merchandise exports are considered (Table 4). The average of cross-border sales is estimated to be around 10% of total B2C e-commerce sales. A major exception is Hong Kong, where it amounted to 94%, although the majority of Hong Kong's B2C e-commerce sales are re-exports to mainland China.

Table 4. Top 10 Merchandise Exporters in Cross-Border B2C E-Commerce Sales, 2018

	Cross-Border B2C E-Comm Sales, \$ Billions	Share of Cross-Border B2C E-Comm Sales in Merchandise Exports, %	Share of Cross-Border B2C Sales in Total B2C E-Comm Sales, %
China	100	4.0	7.3
U.S.	85	5.1	7.8
UK	40	8.2	15.0
Hong Kong	35	6.2	94.3
Japan	21	2.9	13.1

<sup>2</sup> Gross merchandise volume or value is the total value of merchandise sold over a given period of time through an e-commerce website. It is a measure of growth of a business.

	<b>Cross-Border B2C E-Comm Sales, \$ Billions</b>	<b>Share of Cross-Border B2C E-Comm Sales in Merchandise Exports, %</b>	<b>Share of Cross-Border B2C Sales in Total B2C E-Comm Sales, %</b>
Germany	15	1.0	14.9
France	12	2.0	10.6
Italy	4	0.8	13.9
Korea	3	0.5	3.2
Netherlands	1	0.2	4.4
Top 10	317	3.2	9.6
<i>World</i>	<i>404</i>	<i>2.1</i>	<i>9.2</i>

Source: [UNCTAD, 2020].

Korea and the Netherlands are exceptions on the lower side – their cross-border B2C sales in total B2C e-commerce sales are quite low. This implies that their domestic B2C sales are hugely more significant than the cross-border ones.

## Ownership, Management and Governance of Digital Data

Within international business operations, even earlier data used to be generated. The advent of the Internet and subsequent explosion of Internet-related social media apps and digital platforms have now transformed the pace of data generation. Data is now generated at an unprecedented pace. The greater the proliferation of devices, services and sensors in the economy and society, the faster the rate of growth in the volume of data generated will be.

As the digital economy and social interactions are shaped at this unprecedented pace, data will increasingly become a valuable and critical resource in international trade and business. All data is not valuable, much raw data is not usable either. But, as digital data now can be globally used, reused, copied, moved and processed cheaply without any depreciation (data can have infinite shelf life) at very fast speeds, data will drive economies of scale and scope in future [OECD, 2019a].

Here, the important point to note is that data is also not uniform. Not all data contains personal information of people. There are different types of data, and the personal content ingrained in those different categories of data vary accordingly. Global value chain and engineering machine-to-machine (M2M) data contains relatively less personal information. On the other hand, social media, public services, e-commerce, or even electronic personal communications, like emails, hold much more personal content (Table 5). An argument can always be made from this personal content classification that apart from global value chain and engineering M2M data, all other data should be ideally brought under data localization norms for safety and privacy.

Data is extremely valuable and critical when it is processed and used to improve social and economic activities, business products, organizational methods and markets. Therefore, ownership of useful data will determine market control, monopoly/oligopoly power, and economic leverage over competitors. If placed or leaked in the wrong hands, data can also become an instrument to commit fraud, crime and terror. So, the ownership and control of data is crucial in many ways.

As mentioned previously, the current global digital economy revolves around the U.S. and China. If one looks at the major data breaches in the 21st century, quite naturally almost all of

those occurred in these two countries (Table 6). The U.S. experienced the greatest number of large data breaches in the new millennium. In the absence of any global regulatory and legal redressal mechanism, this is why ownership, storage and control of digital data is such an important issue for the future of the digital world.

Table 5. An Indicative Approximate Assessment of Personal Content in Different Types of Data

Type of Data	Personal Content (on a Scale of 1 to 10)
<b>Business to Business (B2B)</b>	
GVC data	2
Engineering (M2M)	4
IoT (M2M)	5
Financial/human resources	7
<b>Business to Consumer (B2C)</b>	
Media	7
Consumer	9
Services (e.g. health, financial)	9
<b>Government to Citizen (G2C)</b>	
Services (e.g. health, tax, identity, social protection)	10
IoT (e.g. metro, CCTV)	10
<b>Citizen to Citizen (C2C)</b>	
Social media	10
Communications (e.g. email, messages, voices)	10

*Note.* GVC = Global Value Chain, M2M = machine-to-machine, IoT = Internet of Things, CCTV = Closed Circuit Television.

Scale of personal content from 1 to 10, where 1 is low personal content and 10 is high personal content.

*Source:* [OECD, 2019a].

Current trade and production activities are critically dependent on moving, storing and using cross-border digital data. The flow of data facilitates the world's production process through global value chains and international market reach. Data has become a tradeable asset and a key component for automation in trade facilitation. Going by some recent estimations, cross-border data flows contribute around \$2.8 trillion to global economic activity, which is 3.5% of global output [Manyika et al., 2016].

Like most other economic resources, data is not equally distributed. The geographical concentration of storage is once again around two dominant countries – the U.S. and China. Concentration is visible at the sector or firm level as well, with some companies holding far more volumes of data than others. Thus, data savvy firms and two dominant countries naturally hold comparative future advantage in international digital trade and business. These entities will also have an unfair advantage in blocking the future entry of new competitors – both at country and firm levels [OECD, 2019b].

*Table 6.* The 15 Biggest Data Breaches of the 21st Century

<b>Company</b>	<b>Location of Headquarters</b>	<b>Month/Year</b>	<b>Impact</b>
Adobe	U.S.	October 2013	153 million user records
Adult Friend Finder	U.S.	October 2016	412.2 million accounts
Canva	Australia	May 2019	137 million user accounts
eBay	U.S.	May 2014	145 million users
Equifax	U.S.	July 2017	147.9 million consumers
Dubsmash	U.S.	December 2018	162 million user accounts
Heartland Payments System	U.S.	March 2008	134 million credit cards exposed
LinkedIn	U.S.	2012 & 2016	165 million user accounts
Marriott International	U.S.	2014–18	500 million customers
My Fitness Pal	U.S.	February 2018	150 million user accounts
MySpace	U.S.	2013	360 million user accounts
NetEase	China	October 2015	235 million user accounts
Sina Weibo	China	March 2020	538 million accounts
Yahoo	U.S.	2013–14	3 billion user accounts
Zynga	U.S.	September 2019	218 million user accounts

*Source:* [Swinhoe, 2020].

Primarily due to this reason, data localization is important and the policy positions taken by quite a few developing countries, including India, in favour of data localization and local data storage assume considerable significance.

However, as data is getting churned out digitally at an astonishing pace, the perceived seriousness of data concerns is still largely evolving. There is no comprehensive legal digital framework at the global level that can deal with social, economic, security and safety issues related to data. Currently, different legal frameworks are used to deal with data-related problems. For example, copyright and related rights are considered for issues of data ownership, while privacy protection laws govern personal data.

The undefined and fluid nature of digital data in its genesis, generation, transformation and dissemination prevents the formation of any clarity in the global digital ecosystem's safety and security. As a result, each side involved in any data dispute tries to fiercely protect its interest while a universal framework remains as elusive as ever.

## Data Safety and Concerns of Developing Countries

The debate around ownership, control, and management of global digital data, particularly emanating from the proliferation of e-commerce across borders, confronts three new realities. First, the principal custodians of digital data – the U.S. and China – fall well short of their duties to prevent data breaches and thereby to protect the economic and civil rights of individual consumers in developing countries. These custodians also failed to generate local value by creating enough jobs and spurring innovations in these base countries [Saran, Gupta, 2019].

Second, the custodians have failed to provide any legal and economic redressal to developing country consumers following these data breaches. Local jurisdictions, even if flawed and underdeveloped, probably would have a better chance of redressal for these developing country consumers [Saran, Gupta, 2019]. Foreign legal frameworks, at the storage base of this data, completely ignore the material and privacy loss incurred by these consumers due to data breaches. There is a lack of digital redressal frameworks, but countries concerned about data security can always establish them. On the other hand, internationally there is no real incentive for the big players or the dominant digital countries to erect a multilateral governing framework – simply because those will escalate the costs of production and providing services.

Since most cloud providers back up data across multiple sites, if any individual's data is on the cloud she will never exactly know where her data is stored. In 2011, of the top 10 data storage centres nine were located in the U.S. and one in Ireland [Kar, 2011]. China's recent digital surge implies similar data storage in that country. In terms of transparency, the individual consumer or user practically never knows where her data is.

Third, the current lopsided concentration of data storage in two countries prevents the international market for data from determining the accurate valuations of storage. For example, if India (or other countries) makes an entry in this data storage market riding on a global data localization convention, then prices of data storing are likely to plummet. India has previously shown that potential during episodes such as the Y2K problem and the business process outsourcing phenomena. India's ability to provide digital services at a fraction of the cost of that in the West fundamentally altered these digital markets [Saran, Gupta, 2019].

In various documents, it is often said that under existing WTO/GATS (World Trade Organization/General Agreement on Trade in Services) rules and commitments with respect to data localization measures, there is no provision that can prevent members of the WTO from regulating trade in services in a "reasonable, objective and impartial manner" to protect individual country's interests. However, these rules also say that Mode 1<sup>3</sup> does not require the supplier's presence or operation in foreign country, and GATS commitments cover all means of supplying services. Interpretation of these provisions at multilateral levels boils down to the conclusion that data localization violates the tenets of free trade in services [Crosby, 2016].

The GATS also lacks clarity while defining "services," though services need to be identified and classified for the operation of the agreement. As a result, no WTO member is obligated to use any particular classification system for the scheduling of specific commitments on market access and national treatment [Weber, Baisch, 2013; Zhang, 2015]. This further complicates the creation of a multilateral framework on data privacy and security.

Different states employ various restrictions on cross-border data flows with different objectives, targeting all or specific types of data. In spite of repeated calls for the creation of a multilateral framework to ease the flow of data across borders the deadlock at the WTO on this data issue remains [Sen, 2018]. Cybersecurity and privacy concerns are predominant reasons for countries to create these data restrictions. The real reason for these data restrictions, however, lies in the existing gaps between trade law and Internet governance [Mishra, 2020].

Many governments are now open to the idea of data localization, particularly of sensitive data related to national interests, after the series of intelligence report disclosures, including the Edward Snowden episode [Hill, 2014]. However, there is a clear-cut distinction between this ethical angle and business data localization.

After years of negotiations, the European Union (EU) passed the General Data Protection Regulation (GDPR) to resolve most of these data safety related problems. However, regu-

<sup>3</sup> Mode 1 trade in services (also known as "cross-border" trade in services) includes the cross-border flow of data as required to produce, distribute, market, sell and deliver services internationally.

lators, business and relevant people in the EU since then are grappling with the difficult task of establishing an all-encompassing legal regulatory regime. There are visible gaps between the legislation and the enforcement. New issues have cropped up regarding the transparency and control of data generated by cloud computing. The job of creating a larger framework to provide data security and safety has proven to be easier to draft than to implement [Hon et al., 2016; Ryan, Falvey, Merchant, 2013; Zarsky, 2017].

There are inconsistencies in the GDPR's formulation as well. For example, the framework stipulates that the end user's consent should be valid, freely given, specific, informed and active. But, questions about the lack of enforceability remains. A recent 2020 study has shown that the top five big tech companies – Google, Amazon, Facebook, Apple and Microsoft – use dark patterns<sup>4</sup> in their consent obtaining mechanism. That can nullify the objective of GDPR and compromise individual consumers, as the redressal mechanism is largely absent across countries [Human, Cech, 2020].

Though some digital companies begin operations by using local storage apps and facilities, later most of them shift toward cloud storage. For example, music app Spotify started with local storage but later shifted to Google cloud for storing data. Though Google has servers in multiple locations across the world, data locality of the services is governed by the terms of service, which are decided by the company itself. For any unique security and/or compliance need the customer has to deal with the Google service team only. Needless to say, if there is a conflict or dissatisfaction the consumer has nowhere else to go.

In India, the debate around data localization started when the Reserve Bank of India (RBI) in its April 2018 notification stipulated that “all system providers shall ensure that the entire data relating to payments systems operated by them are stored in a system only in India” [Raghavan, 2019]. However, India is not the only country to show a policy tilt toward data localization. Most importantly, the digital challenger to the U.S., China, has strict data localization norms. Countries like Russia, Indonesia, Nigeria and Vietnam have also implemented tough rules around data localization [Loufield, Vashisht, 2020].

There are other countries that have their own reservations against erecting an international framework around e-commerce in the WTO and other plurilateral deals, without taking into consideration the concerns of developing countries. An “e-commerce for development agenda” is synonymous to “another trade liberalization agenda” for them. Any attempt to form new rules on e-commerce has to create relief for these developing countries.

The e-commerce rules envisaged in WTO proposal drafts or in the provisions of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP),<sup>5</sup> these countries fear, would further marginalize the poor economies. A new set of rules for e-commerce has been proposed, discussed and negotiated at the WTO level, in spite of many developing countries opposing it. The aim was to have a consensus draft by mid-2020. In a way, groups of developed countries pushed for it. Developing countries, however, felt that the draft rules would only smooth the way for big tech multinationals [TJM, 2020].

<sup>4</sup> A dark pattern is defined as a user interface that is carefully crafted to trick users into giving consent for buying or indulging in unintended and involuntary products and services. In other words, a dark pattern compels the user to do something which she otherwise would not do.

<sup>5</sup> This was originally slated to be the Trans-Pacific Partnership (TPP), but the withdrawal of the U.S. from the negotiations resulted in the signing of the CPTPP without America. This is a trade agreement between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam. This plurilateral treaty came into effect on 30 December 2018. The original TPP provisions on e-commerce have been maintained in the CPTPP. In this paragraph the provisions of the CPTPP, therefore, mean those original provisions in TPP – on which the group of African countries opined.

A group of African countries (at the 2017 WTO Ministerial Conference) aptly summarized its position in a submitted written document,<sup>6</sup> saying, “The narrative is that multilateral rules on e-commerce will leapfrog development through the power of MSMEs (medium, small and micro enterprises). Yet, the proposed typology of rules (at WTO)... is that MSMEs... are the least likely to be able to effectively compete with multinational corporations, who have become global digital leaders, and have decimated smaller companies and who have benefitted from digital industrial policies such as subsidies, R&D subsidies, development of, and access to, and ownership of technologies, economies of scale, government-sponsored infrastructures, tax benefits etc.” [WTO, 2017].

Given the absolutely lopsided composition of the e-commerce global ecosystem, around two countries with the largest GDPs in the world, these concerns cannot in any way be branded as baseless. One of these deep concerns is the issue of data storage, of which data localization can be an effective global solution. Unfortunately for the big players and the leading digital countries localization is a potential barrier to growth. It is perceived to create impediments by adding costs to online selling to customers abroad [Fefer, 2019].

However, the developed countries’ position is best articulated in the CPTPP’s Chapter 14 on e-commerce which states in Paragraph 2 of Article 14.13: “No Party shall require a covered person to use or locate computing facilities in that Party’s territory as a condition for conducting business in that territory.” Paragraph 3 further adds: “Nothing in this Article shall prevent a Party from adopting or maintaining measures inconsistent with the paragraph 2 to achieve a legitimate public policy objective, provided that the measure: (a) is not applied in a manner which could constitute a means of arbitrary or unjustifiable discrimination or a disguised restrictions on trade; and (b) does not impose restrictions on the use or location of computing facilities greater than are required to achieve the objective” [NZFT, 2018].

The shorthand of this legal text is that any country under this plurilateral agreement will not be able to direct any multinational digital and e-commerce company to store data on the home country’s soil. As mentioned before, this not only jeopardizes the redressal in case of a data breach, but also takes the most critical component or input of the digital economy and e-commerce – that is, data – away from the host country. So, the host country will provide the consumer market for the digital players but will be unable to use that most valuable input of the digital business for its own benefit.

## The Pandemic and Global E-Commerce

Like any other economic and business activity, global e-commerce is presently experiencing upheavals due to the COVID-19 pandemic. The WTO has published an information note about current developments in e-commerce in the following key spheres [WTO, 2020].

- Widespread implementation of lockdowns, social distancing and other related measures to contain the pandemic has resulted in spurts in online shopping, social media use, Internet telephony and teleconferencing, and streaming of videos and films.
- There have been subsequent spikes in both B2C and B2B e-commerce sales. A rise in B2C volume is particularly noticeable in online sales of medical supplies, household essentials and food products.
- Demand has gone up for Internet and mobile data services, resulting in a rush to augment network capacity and spectrum by network operators and governments everywhere. However, online service components of industries like tourism have plummeted.

<sup>6</sup> This document was previously circulated as JOB/GC/144 dated 20 October 2017 at the WTO. The subsequent statement (from which the quotation is made) is without prejudice to the position of one member.

- Though e-commerce for goods and services is experiencing a rise in demand, on the supply side there are sporadic disruptions. That poses the principal challenge to e-commerce for the time being. Other challenges include price gouging (increase in prices to unreasonably higher levels) for specific products, product safety concerns, deceptive practices, cybersecurity concerns, the need for higher bandwidth, and other sectoral developmental concerns.
- The pandemic has underlined the requirement to bridge the digital divide – both within and across countries. Contrary to the claims and expectations of the digitally developed block (as mentioned earlier), smaller producers, sellers and consumers in developing countries and LDCs failed to participate in fulfilling the additional demand created by the pandemic. In other words, bigger players are reaping most of the benefits from this surge in e-commerce demands the world over.
- Though governments and the private sector tried their best to augment capacity to ensure smooth e-commerce transactions and facilitate digital transactions, in places the efforts have been inadequate to cope up with the challenges.
- Though the WTO report hopes for international cooperation and further development of international policies for online purchases and supply, the reality is just the opposite. Already the world is experiencing conflicts appearing at all levels, including trade, business and political spheres.

This pandemic has exposed the fault lines existing in the dominant economic and business model that most of the countries in the world are following. Existing inequalities and divides have further sharpened during this pandemic. While the poor and vulnerable suffer the most in every country due to lockdown and other restrictive measures, the rich and the powerful remain relatively unscathed.

While this once-in-a-lifetime crisis provided new opportunities for large multinational digital and e-commerce players, smaller producers do not seem to be reaping much benefit. In the coming months and probably many years, digital operations will not be optional but mandatory to survive. Widespread digitization of operations will be costly and is likely to hit the smaller firms badly. The pandemic has strongly affected 55% of businesses, according to a recent survey. While nearly two thirds of micro and small firms said that the crisis strongly deteriorated their business operations, 40% of the larger companies reported such consequences. More alarmingly, one fifth of the small- and medium-enterprises reported a risk of permanently shutting down in another three months if the pandemic continues unabated [ITC, 2020]. If the pandemic continues in some form or the other in the next year, definitely rich multinationals will get richer, and many small and medium digital e-commerce firms will be wiped out.

As bigger e-commerce players go from strength to strength, there will be greater clamour against data localization. Large players and technologically developed countries (where most of the e-commerce multinationals are located) are likely to underplay the perils of data security and safety. The basic problem of not having data localization – a huge gap in redressal and compensation in case of a data breach – will remain unresolved. The battle for a fair market-driven global consumer space will also remain totally lopsided, in favour of the economic North and gigantic e-commerce behemoths. That is not a desirable and equitable future of global digital development, at all.

## Conclusion

Data is the new powerful form of capital in a digital world. The ownership of data is going to shape the future ecosystem of digital business and e-commerce. Not storing data locally provides an undue advantage to the bigger players in the market. The ownership of digital technol-

ogy and subsequent ownership of digital data is very lopsided, as both these are concentrated around the U.S. and China. This creates an undue advantage for these countries and the digital multinationals originated there.

This undue data advantage is also likely to be a weapon in the hands of these huge digital firms to create barriers for new entrants. That will, as a result, give rise to monopoly and even oligopoly powers. It is not desirable for future pricing trends and fair competitive market operations. On top of these, data safety issues of consumers in developing countries are largely ignored and are not discussed in any forum. Repeated data breaches and resultant material, financial and privacy losses of consumers and users are not considered at all. In the absence of any international digital regulatory and legal framework, consumers in developing countries and LDCs remain at the mercy of the big digital multinationals.

Storing data locally can be an effective way to tackle these problems. Data localization can bring the data storage market prices down considerably, which will be beneficial for society. It can also inject sufficient incentive to spur technological innovations in the data storage system. If workable templates of data safety and privacy frameworks can be built locally, then consumers' rights will also be protected. Data localization, in addition, has the potential to positively contribute to the creation of quality jobs and effective redressal of data leakage related damages in the developing countries and LDCs.

There is an absence of data governance locally in most countries. However, erecting a local data governance framework is easier than creating an international one. Data localization has the potential to be the first step toward establishing robust local governance structures, according to the unique and specific needs and objectives of the host country.

The COVID-19 pandemic has considerably sharpened the existing conflicts in the e-commerce ecosystem. However, treating this crisis as an opportunity and advocating for digital data safety and security by means of data localization should be the ideal strategy to adopt for the developing and emerging economies. The future equitable gains in digital trade and development will automatically follow.

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