

The Impact of Containerization on Shenzhen and Hong Kong (and Coffee Beans)

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Shenzhen and Hong Kong residents enjoy a high-class international lifestyle — modern housing, offices in mega-towers, convenient transportation, and foods from around the world. We may nitpick at small differences between our cities, but in fact the material forms of everyday life in both cities are quite similar. Why is that? This essay delves into the overlooked impact of containerization on the GBA's "twin cities" and other "international cities" in East Asia.

What is global mass culture?

Have you ever watched a barista make a latte? They use a commercial espresso machine to prepare a concentrated shot of coffee and then use the attached steam wand to foam milk (preferably whole), which is added to the latte cup. Shenzhen and Hong Kong baristas follow the same procedure that baristas in Tokyo, Delhi, Shanghai, Sao Paulo, Mexico City, Cairo, New York and London do. Indeed, it is possible for coffee aficionados from any major city to enjoy a standardized cup of Java anywhere they travel. In 2020, the world economic forum estimated that worldwide over 2.25 billion cups of coffee are consumed everyday.

How the modern world — including China, India, Japan, Korea and other tea-drinking civilizations — learned to drink and love Italian-style coffee drinks points to one unexpected effect of containerization: the creation of "global mass culture."

How did containerization advance the creation of global mass culture?

The shift from traditional shipping to container logistics radically transformed the scale and volume of international trade. Traditional maritime trade had been measured in units that could be handled by human bodies—60kg, 80 kg, 100 kg and sold in small quantities to limited markets. From the mid 17th century to the mid 19th century, for example, coffee beans were bundled in 30kg-60kg sacks, loaded into carts or (eventually) onto trucks, and then handloaded into the hulls of cargo ships. A ship could take as long as six months to make the voyage from Java to Europe or from or from Rio de Janeiro to the west coast of North America. On route, these ships were vulnerable to hurricanes, the

doldrums, and piracy. Once a ship had berthed, longshoremen often needed three or more weeks to unload a ship, transferring sacks and crates to carts and mules for domestic transport. Consequently, a single coffee shipment could take as long as a year from point of origin to its final destination. Only in the 20th century with the advent of mechanized oceanic ships did transport speeds increase.



Taken in the early 20th century by an anonymous photographer, this image shows Hong Kong longshoremen transporting sacks of cargo along the wharves.

The difficulties of transporting coffee beans from plantations in Indonesia and Brazil to European and North American markets, for example, not only made coffee a luxury item for wealthy elites, but also resulted in distinct coffee cultures. In England it was said that coffee cured “head-melancholy” and drunkenness, while in Russia courtiers needed permission from the Czar to drink a cup. In the United States, coffee replaced tea as the drink of choice after 1773, when colonists revolted against the heavy tea tax that Great Britain imposed on imported luxury goods. However, even in the United States which by the 20th century was the largest single coffee market in the world, coffee was still relatively expensive and rare. Consequently, many people often brewed substitute beverages such as “barley coffee” and “chicory coffee,” which used locally available grains.

In contrast to the “human-scale” trade in coffee beans before the mid-20th century, the contemporary trade in coffee beans is measured in units that must be handled by Gantry cranes—1 TEU, 2 TEUs, 2.4 TEUs and 2.56 TEUs. A TEU refers to the Twenty-foot Equivalent Unit — a steel container that measures 20 feet (6.1 m) long, 8 feet (2.44 m) wide and 8.6 feet (2.59 m) tall. Farmers now pack green coffee beans in burlap sacks, which are placed on pallets and then loaded into containers for transfer to a container ship. The net load of a TEU of coffee beans, for example, averages 21,000kg depending on the size of a bean. A TEU of small beans can hold as much 24,000kg, while a of large beans can hold 19,000kg. At the port of origin, gantry cranes efficiently move the containers from truck to ship, while at the destination, the cranes are moved to truck or train. Cargo is tracked by computer, further enhancing the efficiency of transportation.

By making it possible to ship thousands of kilograms of coffee beans at a time, containerization transformed the economic calculus of selling coffee and other luxury items. Before containerization, coffee beans (and other luxury consumables, including spices — especially pepper, tea and tobacco) were sold at high prices to local elites. After containerization, tons of coffee beans could be easily shipped anyway in the world, selling at low prices. Today, Java coffee beans can be shipped from Jarkata to Shekou in 11 days 8 hours. Popular Brazilian beans such as Mundo Novo and Catuaí ship make the voyage from São Paulo to Hong Kong in 35 days 4 hours. Beans from the country that first domesticated coffee, Ethiopia can be shipped from either Āwash to either Shenzhen (23 days 15 hours) or from Addis Abbaba to Hong Kong (24 days 16 hours).

So, the first impact of containerization of Shenzhen and Hong Kong was two-fold: it made mass trade possible and forced entrepreneurs to redefine “luxury good.” In both cities, mass marketed goods are readily available, while luxury items are defined in terms of “design” and “limited editions.”

Who Invented the Shipping Container?

The story of how Malcolm McLean invented the container is now something of a modern legend, especially in economics classes. A high-school educated trucker from rural North Carolina, McLean came up with the idea of creating a series of standardized, intermodal steel containers that could be stacked on ships, trains and trucks as early as 1937. He reasoned that reducing the time it took to load, unload and transfer cargo would significantly reduce shipping costs. Nevertheless, it would be another two decades before

he converted a T2 oil tanker — called the Ideal X — to transport aluminum containers. The first containers measured 35 feet in length, 8 feet in width and 8 feet in height, having been designed to accommodate the standard truck size prevalent in the United State at the time.

The Ideal X sailed from Newark to Houston on April 26, 1956, carrying 58 aluminum containers. It also carried cranes for loading and unloading cargo because neither port had the infrastructure to process the containers. To McLean's delight, the ship was loaded in a mere 8 hours, rather than taking several weeks as was still the case at the Port of New York.



(L) the unloaded dock of the Ideal-X; (R) the fully loaded Ideal-X.

The scale and volume of containerization has increased exponentially since the Ideal X. During the 1960s, almost all containerships were modified bulk vessels or tankers that could transport up to 1000 TEUs, or 24 million kg, which comes to 400,000 60kg sacks of coffee beans. In contrast, during the 1970s, companies began producing containerships. At dawn on September 5, 1972, for example, Hong Kong welcomed its first containership, the Tokyo Bay at Berth 1, Kwai Chung Container Terminal. The Tokyo Bay accommodated 1,944 containers, which were stowed in cells 10 wide across the ship and nine high. Another 356 containers were stowed on the hatch covers, stacked three high and 13 wide across the vessel. In less than a decade, the volume of cargo that could be transported on one ship had increased nearly 2.5 times for a carrying capacity of 1 million 60kg sacks of coffee beans. Roughly fifty years later, the world's largest container ship, the MSC Irina had with a capacity of 24,346 TEU — nearly 10 times the capacity of the Tokyo Bay.

How did containerization reshape the world's cultural geography?

Before containerization, maritime trade in the Pacific Ocean revolved around the silver trade between Acapulco and Manila. Otherwise, the world's most important world trade routes still traversed the maritime Silk Road, which connected coastal China to India, Africa, the Middle East and Europe via the Straits of Malacca. However, between 1958 - 1974, seven cities — San Francisco (1958), Los Angeles (1959), Seattle (1963), Tokyo (1968), Singapore (1972), Hong Kong (1972), Taipei (1972), and Seoul (1974) — containerized, leading to the creation of the “Pacific Rim” economy. The volume of trade between these seven cities was so large that by 1980, Japan had replaced the Soviet Union as the world's second-largest economy, East Asia's “four dragons” had become exemplars of modernization worldwide, and San Francisco and Seattle had bootstrapped into the upper echelon of international cities.

The synergy between the Pacific Rim cities resulted in “just-in-time” manufacturing and the “Dotcom” economy. In Japan, Toyota exploited the volume and speed of container shipping. Through just-in-time manufacturing, the company saved billions of dollars by reducing its inventories and only producing what was required by the next manufacturing process. The four East Asian dragons adopted the Toyota model of production along with containerization. Supply chain management quickly became a pivotal skill for companies all over the world, and is today a pillar of global economy. The containerized cities on the American West Coast took advantage of the sudden influx of cheap and plentiful products from East Asia to attract young immigrants. San Francisco and Seattle, which had historically been economic backwaters were particularly popular with American youth. During the 1970s, low-cost housing and creative lifestyles made it possible for Bill Gates and Paul Allen to jumpstart Microsoft in Seattle (1975) and for Steve Jobs to found Apple Computer in San Francisco (1976).

The integration of the Pacific Rim cities enabled containerized cities to share creative technologies and intellectual properties by the shipload, fundamentally restructuring the world's cultural geography. Author of the book *The Box: How the Shipping Container Made the World Smaller and the Global Economy Bigger*, Marc Levinson succinctly summarizes the cultural effect of containerization, “Low transport costs helped make it economically sensible for a factory in China to produce Barbie dolls with Japanese hair, Taiwanese plastics and American colorants, and ship them off to girls all over the world.”

On the one hand, once East Asian companies began producing consumer goods — textiles, clothes, household appliances, electronics, and toys — for the American market, these goods also became available for local consumption. East Asian cities first used the influx of capital to build modern infrastructure, office towers, and housing estates. In turn, families outfitted their new homes in typical American style: they bought refrigerators, washing machines, small appliances, televisions, and record players. The restructuring of physical environment made American pop culture available to young East Asians, who wore Ivy-league prep clothes and blue jeans. They ate hamburgers at McDonald's, chicken at KFC, pizza at Pizza Hut and drank Coca-cola everywhere.

On the other hand, even as East Asian cities adapted to the sudden rush of American products and the accelerating pace of life, artists and creatives produced new forms of popular culture that did more than entertain — they became the template for global mass culture. During the 1980 and 90s, Tokyo materialized the world's fantasies, inventing Pac-Man, Pokémon, Hello Kitty, SuperMario, and Dragon Ball Z. They also brought these fantasies to life through karaoke, the Walkman, manga, and anime as well as cos-play and online gaming. Cantopop's four heavenly kings — Andy Lau, Jacky Cheung, Leon Lai and Aaron Kwok — sold out arenas throughout Asia and Hong Kong movie stars like Jackie Chan, Chow Yun-fat and Maggie Cheung became international stars. Today, K-pop music groups dominate international youth culture, while Korean dramas about office life in Seoul have fans in Hanoi, Kuala Lumpur and Manila as well as Seattle, San Francisco and Los Angeles.

All this to say, a second impact of globalization was the emergence of a new kind of international city in the containerized cities of the Pacific Rim. Early cultural exchange between these seven cities “localized” American fast food, Japanese entertainment, and pop culture from the four dragons in the Pacific Rim cities. Worldwide, cities that containerized after these cities would model their development on the urban forms of East Asia and the high-tech pop cultures of the Pacific Rim.

How did Shenzhen exploit containerization?

The brief but accelerating history of containerization and the spread of global mass culture suggests the importance of simultaneity in the contemporary world order — “early” and “late” in our era is often a question of years, rather than decades or even centuries. The spread of just-in-time manufacturing, advances in IT, and improvements to container

shipping occurred simultaneously with the invention of new pop cultural forms.

Worldwide, containerization and global mass culture have snowballed, with latter day container cities building and improving upon the experience of early container cities.

The relationship between Shenzhen and Hong Kong illustrates how integration into the contemporary world system has relied on proximity to containerized ports.

During the 1960s and 70s, the containerization and industrial development of Hong Kong relied on both water and foodstuffs that were imported from China via Shenzhen (then Bao'an County). The completion of the East River Waterworks, for example, resolved Hong Kong's water shortage, allowing for both industrial and residential developments. At the same time, foodstuffs were shipped to Hong Kong either by rail or truck. Trains departed from Shaoguan and Guangzhou, bringing goods to from Guangzhou by rail via Luohu. Near Shenzhen's second land border, Wenjindu Checkpoint work units and communes set up food processing plants and breeding farms. These foodstuffs were transported to Hong Kong by truck. In addition, successive waves of Chinese migrants into Hong Kong provided the city with a constant source of cheap labor. Clearly, just as the upgrading of the American west coast had relied on the industrialization of East Asia, the industrialization of Hong Kong depended upon the material support and human resources of neighboring Shenzhen.

Significantly, as soon as Reform and Opening Up began in 1978, small factories in Shenzhen were able to transport goods via Wenjindu to the Port of Hong Kong. In fact, the earliest infrastructure development in the newly established SEZ connected Shenzhen industrial parks such as Shangbu and Bagualing as well as factories in nearby villages to the port of Hong Kong via Wenjindu. At the same time, in Shekou, the newly established Industrial Park initially offered support to the booming Hong Kong logistics industry, providing a base for ship repairs and salvage. In fact, during the 1980s, Shenzhen factories and farms repurposed extant connections with Hong Kong to take advantage of Hong Kong's global network. This jumpstart — and often ad-hoc — economy stimulated the local economy and attracted foreign direct investment. It also allow the city to build a bigger and more modern container port at Yantian. By the end of the 1980s, Shenzhen was already building the Yantian Container Port, which would include terminals that were both larger and more integrated with China's hinterland than the Port of Hong Kong. The key point is that Shenzhen was part of the Pacific Rim from its inception — first as Hong Kong's hinterland and then as one of South China's most important container ports.

One key lesson to draw from Shenzhen's experience is that it was always already part of the Hong Kong containerization story, first as a source of natural resources and

then as “the factory” to the SAR’s “storefront.” This means that selected elements of global mass culture were available in the area before 1978 and flowed in during the 1980s. Indeed, a few Shenzhen youth were wearing their first pair of bell-bottom blue jeans in 1979! In the early 1980s, migrant workers in Caiwuwei both assembled tape-recorders for export and used them to listen to tapes of Hong Kong pop stars as well as Taiwanese stars like Teresa Teng. Especially during the 1990s, as residents moved into modern apartments with televisions and then computers, the global mass culture of East Asia’s international cities became commonplace. In addition to listening to canto-pop superstars Beyond and drinking Taiwanese Bubble Tea, Shenzhen youth were singing karaoke, watching Korean dramas, and re-imaging the future of tech.

What is the future of containerization?

In two generations, containerization has reshaped the world. Today, the problem faced by coffee shops worldwide is not the availability of beans, but rather how to distinguish the beans in one container from those of another. Java coffee beans can be shipped from Jakarta to Shekou in 11 days 8 hours. Popular Brazilian beans such as Mundo Novo and Catuaí ship make the voyage from São Paulo to Hong Kong in 35 days 4 hours. Beans from the country that first domesticated coffee, Ethiopia can be shipped from either Āwash to either Shenzhen (23 days 15 hours) or from Addis Abbaba to Hong Kong (24 days 16 hours). From the standpoint of containerization, the central economic question is one of volume: On the supply side, manufacturers are producing to fill ever increasing numbers of containers. On the demand side, coffee sellers are trying to figure out how to get millions of people to consume the same product, everyday, possibly multiple times. In other words, one of the key features of global mass culture has been the creation of chain stores like Starbucks, which made coffee drinks a staple of the international city.

Perhaps its not surprising that one of the first beneficiaries of containerization, Seattle was also the home to the company that transformed coffee drinking. In 1983, Howard Schultz travelled to Italy, where he experienced Italian coffeehouse culture. He brought espresso machines back to Seattle, “adding value” to coffee beans by standardizing the coffee experience. Starbucks baristas, for example, are trained to make the same latte every time, in the same amount of time, in every shop, in every city of the world, where shops play the same world music while young people work on computers or hold offsite meetings. In less that two decades, Starbucks opened throughout East Asia — Tokyo and Singapore in 1996; Manila in 1997; Kuala Lumpar, Taipei and Bangkok in 1998; Beijing

and Seoul in 1999, and; Hong Kong in 2000 and Shenzhen in 2002. The goal of this economic model is to become a component of the standard international city.

Here's the current conundrum: containerization has not only made it possible for us to generate immense wealth from coffee drinks, but also to generate wealth from the disposable cups, plastic lids, and stirrers that are used by coffee drinkers everyday. And unlike coffee, coffee drink packaging doesn't just vanish.

The condition of the Pacific Ocean is an unintended consequence of containerization, accelerating production and global mass culture. The Great Pacific Garbage Patch, also known as the Pacific trash vortex, spans waters from the West Coast of North America to Japan. The patch is actually comprised of the Western Garbage Patch, located near Japan, and the Eastern Garbage Patch, located between the U.S. states of Hawai'i and California. Much of the garbage floating in the patch was originally boxed, placed on pallets and loaded into containers in cities and ports in East Asia for consumption in the United States. From the perspective of the Pacific Garbage Patch, the fact that the world now consumes 2.25 million cups of coffee per day takes on a different, more ominous meaning.

On November 19, 2021 the world's first electric and self-propelled container ship – Yara Birkeland – departed for its maiden voyage in the Oslo fjord. Previous container ships were lauded for exponential increases in carrying capacity. In contrast, the Yara Birkeland has been promoted as an environmentally friendly vessel, which will reduce Norway's carbon footprint by replacing diesel trucks. Almost immediately after the Yara Birkeland sailed, the countries of the Pacific Rim all tested unmanned ships. Yet, the emphasis on low-carbon transport overlooks the scale of trade that is necessary to make containerization viable. Perhaps a more pressing question is: what might a post-containerized world economy look like?