

Chapter 2

Flight-Time, Geographical Distance and Related Issues

2.1 Introduction

This chapter discusses the paradox of the world-flattening effects of globalization and the perpetual influences of geography. It is postulated in this chapter that flight-time can act as a proxy for geographical distance, and that flight-time is a causal factor for other facets of distance, namely cultural distance, administrative distance, geographical distance, gravitational distance, topological distance, economical distance, technological distance, socio-demographical distance, relational or affinity distance, and organizational distance. Organizational distance is further explained by changes, spillages, psychic distance, networks, communications, net cost-benefits, control and friction.

2.2 The Associated Attributes of Distance

Distance can be the causal factor for many other elements (Lojeski and Reilly 2007). Lojeski and Reilly (2007) categorized geographical distance, temporal distance and organizational distance under physical distances. Face-to-face interaction, technical skills and support, and team size were classified under operational distances. Lastly, interdependence distance, cultural distance, relationship distance and multi-tasking were considered under affinity distances. If these aspects of distances are not managed properly, the team might become dysfunctional and exhibit symptoms such as an unwillingness to collaborate, a lack of connection to the common mission, too much time spent managing the team rather than getting work done et cetera.

Ghemawat (2001) summed up the barriers created by distance with the CAGE framework, acronym for Culture distance, Administrative or political distance, Geographical distance and Economic distance. Thus, the CAGE looks into religious and ethnic make-up, social norms, languages, colonial links, trade arrangements,

physical distance between markets, size of market, access, internal topography, transportation and communication infrastructures and economic disparities between the markets and so on. When an A/E firm venture into an overseas market, it could be hampered by a different language, unfamiliarity of building codes and regulations, access to home-based resources, and difficulty in finding suitable human resources. Ghemawat (2001) used the CAGE framework to describe how companies routinely overestimate the attractiveness of foreign markets while ignoring the costs and risks of doing business in a new market. Ghemawat (2001) also propounded how dramatically an explicit consideration of distance can change a company's outlook of its strategic options.

2.3 Flight-Time and Distance

The amount of flight-time or flight-distance could be the causal factor for variation of a spectrum of factors, such as climate, time-zone, bodily adjustments, cultural distance, administrative distance, geographical distance, economical distance, technological distance, socio-demographical distance, relational distance and organizational distance. Table 2.1 shows how either virtual communication, commuting between cities or the organization structure of a transnational firm could be affected by flight-time.

2.3.1 *Time*

Flight-time does not equate to trip-time. Other than normal checking in-and-out procedures and waiting, a person on a social or business travel may also be concerned about transportation time to- and-fro from airports, transfer-to-transit-time if the location is not a direct destination and so on. Therefore, a journey to an outlying location may consume more time because of the need to transfer-to-transit or/and a longer commuting-time from the arrival to the outlying location. For instance, Singapore's Prime Minister Lee Hsien Loong (2009) has encouraged Singaporean firms to seek outlying or second-tier provinces like Ningbo, of Zhejiang Province, China. However, the Singapore Airlines has no direct nor connecting flights to Ningbo. To get to Ningbo from Singapore, one could choose to get to Xiamen or Beijing, and then take a connecting flight from either Xiamen or Beijing to fly to Ningbo. A trip to Shanghai from Singapore which is a location that is geographically further away, takes only 5 h. If we interpolate, a flight from Singapore to Ningbo should take slightly less than 5 h. Yet, as Ningbo is not a first-tiered city of China, most national airliners do not fly direct to the city and domestic transit flights are needed to reach the city. A layover and transit flight can be very time-consuming, shown in the flight schedules below:

Singapore to Xiamen (4:05) + Layover (6:00) + Xiamen to Ningbo (1:15) = 11:20 via Air China

Table 2.1 Impact of flight-time on communication, the employee and the firm

Nature of interaction	Action	Barriers
Communication	In general	Costs of communication infrastructure
	Communication between expatriate and local	Language, culture, work ethics
	Inter-city communication	Time-differences and time-lags Unfamiliarity Reduction in frequency of interaction Loss of information Misunderstanding Communication and Coordination
	Communication with clients abroad	Lack of face-to-face contacts Deceit
Employee	Commuting	Jet-lag
	Temporary posting (shuttling frequently)	Sense of belonging
	Permanent posting	Reluctance to be away from home-city
Firm	Transportation	Travelling and freight costs
	Resources	Sap of resources
	Due diligence	Understanding of the environment
	Establishment	Networks
	Management	Control

Singapore to Beijing (6:15) + Layover (3:15) + Beijing to Ningbo (2:05) = 11:35 via Air China

Note: These two flight-schedules are considered the shortest in terms of time-duration.

2.3.2 Flight Routes

Sometimes, the flight may not take the most direct route. There have been many cases of airspace ban. For example, the European Union warned a list of nearly 4,000 airlines that it says should reduce their impact on the environment from 2012 or face a ban from European airports (Global Times 2009).

Direction of flight is incidental with jet-streams. Jet-streams are fast flowing, narrow air currents found at the tropopause, the transition between the troposphere where temperature decreases with height, and the stratosphere where temperature increases with height. Routes may also change as planes save energy and fuel consumption when they fly with a jet-stream. Conversely, airplanes would encounter significant air resistance if they had to fly against it. Flight-time can also be affected by head or tail-winds and air-traffic control.

Table 2.2 Geodesics of cities and distances of cities away from Singapore

City	Latitude	Longitude	Distance away from Singapore (km)	Flight-time (hours: minutes)
	Degree minutes	Degree minutes		
Singapore	1°14N	103°55E	—	—
Kuala Lumpur	3°8N	101°42E	307	0:55
Penang	5°4N	100°23E	598	1:25
HCM City	10°46N	106°43E	1,085	2:05
Hanoi	21°03N	105°85	2,197	2:30
Shanghai	31°10N	121°28E	3,769	5:05
Beijing	39°55N	116°25E	4,457	6:00
Tianjin	39°14N	117°18E	4,411	9:15 (with transit)

Geographical distance refers to the distance between two geographic points. There are essentially three abstract ways of calculating geographical distance between two locations on earth, depending on whether the surface is flat, spherical or ellipsoidal. The distance between two points in Euclidean space is the length of a straight line from one point to the other. In non-Euclidean geometry, straight lines are replaced with Geodesics. The great-circle distance or orthodromic distance is the shortest distance between any two points on the surface of a sphere measured along a path on the surface of the sphere. However, the earth is ellipsoidal. The distance of two locations on the surface of earth can be computed using Vincenty algorithm and the WGS84 ellipsoid model of the earth, which is a GPS “as the crow flies” technology. Table 2.2 shows the distance away from Singapore and the geodesic coordinates of the various cities that the study is trying to examine. The latitudes give the location of a place on earth north or south of the equator, whereas the longitudes give the location in terms of east or west of the Prime Meridian. To encapsulate, climate changes with latitude and time-zones changes with longitudes.

2.3.3 *The Aircraft's Speed*

There are five major manufacturers of civil transport aircraft, namely Airbus from France, Boeing from the United States of America (USA), Bombardier from Canada, Embraer from Brazil and Tupolev from Russia. The Singapore Airlines' (SIA) fleets consist mainly of wide-body aircrafts from these five aircraft families: Airbus A380, Airbus A340, Airbus A330, Boeing 747 and Boeing 777. These aircrafts have different traits in terms of its engine, seat configuration, flying range, seating and cargo capacity, maximum cruise speed and so on. As such, they cater to different hauls and routes. For instance, an Airbus A380-841 has a Rolls Royce Trent 970 engine and a 471 seat capacity, cruises at a speed of 0.85 Mach, and is used by SIA to reach destinations like London, Paris, Sydney and Tokyo. On the other hand, the Boeing 777-312 has a Rolls Royce Trent 892 engine and a 332 seat capacity, cruises at 0.84 Mach, and reaches places like Bangalore, Bangkok, Dubai and Shanghai.

2.3.4 *Climate*

Climate encompasses the temperature, humidity, atmospheric pressure, winds, rainfall, atmospheric particle count and numerous other meteorological elements in a given region over long periods of time. It is affected by its latitude, altitude, terrain, ocean currents, as well as the presence of persistent snow or ice. The Köppen classification includes climate regimes such as rainforest, monsoon, tropical savanna, humid subtropical, humid continental, oceanic climate, Mediterranean climate, steppe, subarctic climate, polar ice cap and desert.

2.3.5 *Time-Zones*

A time-zone is defined as a region of the earth that has uniform standard time, usually referred to as local time. Conventionally, time-zones compute their local time as an offset from Coordinated Universal Time (UTC). Time-zones are divided into standard and daylight saving. Daylight saving time-zones or summer time-zones include an offset for daylight saving time. Standard time-zones are defined by geometrically subdividing the earth's spheroid into 24 wedged-shaped sections called lunes, bordered by meridians each 15° of longitude apart. Therefore, local time of neighbouring zones would differ by 1 h. However, it must be noted that political boundaries, geographical practicalities, and convenience of inhabitants can result in irregularly-shaped zones. Time-zones and the international date-line can confuse travelers and work matters that traverse between different cities. Communication and coordination can be made complicated too.

2.3.6 *Jet-Lag and Circadian Rhythm*

Jet-lags occur due to rapid long-distance transmeridian (east-west or west-east) travel. When traveling across time zones, the body clock will be out of synchronization with the destination time, as the body experiences incoherence with the daylight and darkness contrary to the bodily, circadian rhythms it has grown accustomed. The circadian rhythm dictates the times for sleeping, waking, eating, hormone regulation and body temperature variations. Jet-lag is a physiological condition as a consequence of a disruption to normal circadian rhythms of the traveler, resulting in symptoms like loss of appetite, nausea, digestive problems, headaches, sinus irritation, fatigue, irregular sleep patterns, insomnia, disorientation, grogginess, irritability and mild depression. The aftermath of a long-distance transmeridian journey can cause jet-lags lasting several days, and recovery rate from this approximates at 1 day per eastward time zone or 1 day per 1.5 westward time zones. Therefore, a working trip which requires long-distance fly-commuting would have a negative impact on productivity and health, and should be considered by the firm when dispatching its staff abroad.

2.4 Globalization and Geography

Globalization is the term used to describe how people around the world are unified into a single society via economic, political and socio-cultural integration. It was thought that such integration would be brought about by trade, foreign direct investments, capital flows, migration and the spread of technology, resulting in the transnational diffusion of ideas, language and culture.

In the past few decades, the elimination of tariffs, creation of free trade zones, reduced transportation costs due to improved transportation technologies and containerization of goods, subsidies for global corporations, reduction of capital controls, harmonization and supranational recognition of intellectual property, and digitization have enabled geographic dispersion and have flattened the earth (Friedman 2005).

It seems that technology, communication and market advances have fundamentally changed the global perspectives of time, distance and spatial boundaries. The “death of distance” was therefore espoused by Frances Cairncross (1997), who was then a senior editor at the Economist. However, Kitchin and Dodge (2002) thought that “boundary-less” is an illusion. Instead, Olson and Olson (2000) and Kitchin and Dodge (2002) lauded the triumph of geography and suggested that the submission on the fracturing of geographies due to telecommunications is misleading and overstated, and that the proposition of the death of distance is greatly exaggerated.

Distance, with its associated attributes such as culture, time-zones, geography and language affects how humans interact with one another. Consequently, it is immortal in several essential respects (Olson and Olson 2000). Distance is enduring in the business world despite the proliferation of information and communication technology because communication is the life-blood of any organization; and that regardless of how globalization and technology have bridged the tyranny of distance, there still remain facets of organization communication that could be impaired and distorted by distance (Allen 1977).

2.5 Manifestations of Distance

Distance is not uni-dimensional as there can be many facets of distance. For example, culturally and economically similar countries such as New Zealand and Norway may lie far away in geographical terms (Reid and O'Hallachain 1997). Successive innovations in information and transport technology may have made the world seemingly a smaller place (Friedman 2005). However, Olson and Olson (2000) pointed out that like before, transport or distance continues to shape society and space in myriad practical ways. Likewise, similarity in cultural and economic distance reduces uncertainty and allows for easier management of a subsidiary because closeness may alleviate problems in conducting actual business operations as it is easier to monitor, coordinate and market activities of particular importance in the early stages of internationalization when firms are often small and face severe

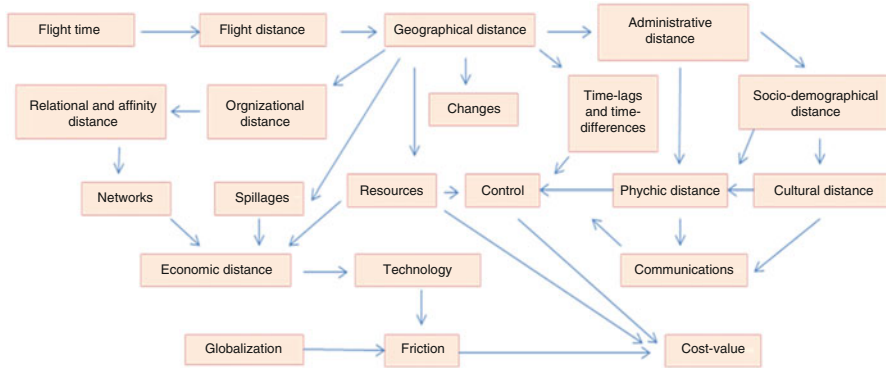


Fig. 2.1 Manifestations of distance

resource constraints (Davidson 1983). The “tentacles” of Distance (refer to Fig. 2.1) provide a lucid illustration of the different forms of distances which include:

- (i) Cultural distance;
- (ii) Administrative distance;
- (iii) Geographical distance;
- (iv) Economic distance;
- (v) Technological distance;
- (vi) Socio-demographical distance;
- (vii) Relationship and affinity distance; and
- (viii) Organizational distance – changes, spillages, time-lags and time differences, psychic distance, networks, communications, net cost-benefit, and control + friction with globalization, improvement of communications and transportation technologies.

2.5.1 Cultural Distance

Thomas Friedman’s *Longitudes and Attitudes* (2001) depicts how civilizations in different parts of the world have different social norms. They think, behave and act differently. Differences between countries or cities of different societal value systems increase the cost of entry for international business, decrease operational benefits, and hamper the firm’s ability to transfer core competencies to foreign markets (Barlett and Ghoshal 1998). This results in an additional burden for multinational companies to adapt to local cultural values that can be transmitted through the difference in political and economical systems, religion, education and languages et cetera (Tihanyi et al. 2005).

Transnational firms tend to find it easier to transfer their technologies, human resource practices, and operating procedures and to achieve internal consistency through standardization when the cultural values between the host and home

Table 2.3 Cultural indexes between selected countries

Countries	Singapore	Malaysia	Vietnam	Hong Kong	China	Japan	UK	US
Singapore	–	1.7	1.9	1.22	2.66	4.81	3.33	3.47
Malaysia	1.70	–	0.23	4.49	6.27	6.12	4.07	3.98
Vietnam	1.9	0.23	–	4.39	6.29	5.17	2.90	2.73
Hong Kong	1.22	4.49	4.39	–	0.36	2.67	4.38	4.21
China	2.66	6.27	6.29	0.36	–	2.68	6.54	6.19
Japan	4.81	6.12	5.17	2.67	2.68	–	3.95	3.40
UK	3.33	4.07	2.90	4.38	6.54	3.95	–	0.08
US	3.47	3.98	2.73	4.21	6.19	3.40	0.08	–

Edited from Chen (2005)

Table 2.4 Hofstede’s cultural index score

Country	Power distance	Uncertainty avoidance	Individualism	Masculinity	Long-term orientation
Singapore	74.0	8.0	20.0	48.0	48.0
Malaysia	104.0	36.0	26.0	50.0	–
Vietnam	89.0	48.3	37.5	43.8	–
Hong Kong	68.0	29.0	25.0	57.0	96.0
China	80.0	40.0	20.0	66.0	118.0
Japan	54.0	92.0	46.0	95.0	80.0
UK	35.0	35.0	89.0	66.0	25.0
US	40.0	46.0	91.0	62.0	29.0
Sign of relationship	No	No	No	Yes	Yes

Implication: Only certain dimensions of cultural distance are affected by flight-distance

countries are more alike than different (Earley and Ang 2003). Therefore, *ceteris paribus*, firms would prefer entering into markets which have less cultural differences from their home-city. Cultural distance affects a firm’s entry mode choice, international diversification and performance (Tihanyi et al. 2005). Table 2.3 shows the aggregates of cultural distances between countries, and reveals that cultural similarities between two countries are generally stronger when (i) the countries are geographically nearer to each other; (ii) the countries are administratively more similar; and (iii) the countries have more historical, relational and language affinities (or similarities). In Table 2.4, Chen (2005) applied Hofstede’s (1980) Framework for assessing culture containing these five dimensions: Power Distance, Individualism versus Collectivism, Masculinity versus Femininity, Uncertainty Avoidance and Short versus Long term Orientation. There are also other ways to measure culture, for example, Trompenaars and Hampden-Turner (1998) listed Universalism versus Particularism, Individualism versus Collectivism, Neutral versus Emotional, Specific versus Diffuse, Achievement versus Ascription, Sequential versus Synchronic and Internal versus External Control. However, the premise is all the same – people and organizations from countries with greater cultural differences think, behave and work less similarly.

Table 2.5 Communism around the world

Communist states	Elected communist party	Formerly communist
PR China, North Korea, Laos, Vietnam, Cuba	Cyprus, India, Moldova, Nepal	Afghanistan, Albania, Angola, Benin, Bulgaria, Cambodia, Congo, Czechoslovakia, East Germany, Ethiopia, Mongolia, Mozambique, Poland, Romania, Somalia, South Yemen, Soviet Union, Yugoslavia

2.5.2 *Administrative/Attributional Distance*

Geopolitics and local politics can be affected by attributional distance. Attributional distance is the measure of how distant or how near two countries are, owing to their political or cultural characteristics (Henrikson 2002). Different forms of government have different attributes in terms of democracy, state-society relationship, identity and ethnic policies, social movements, institutional make-up, political economies and foreign policies. Table 2.5 shows a list of communist countries, or countries with communist parties, or formerly communist countries before their change of regimes. It is apparent that the spread of communism was and is still, concentrated in a few parts of the world. Before the collapse of the Soviet Union and Eastern Europe's communist bloc, communism was wide-spread, from North Korea, to China, Cambodia, Mongolia, Afghanistan, Czechoslovakia, Romania, Poland, East Germany, Congo, Angola, Cuba and so on, so much so that its adversary, USA, the leader of nations who champions democracy and capitalism, had to apply the "containment strategy" to limit and prevent Soviet Union's expansionism.

"Global politics and local politics, though interlinked today by processes of globalization, remain separated by the phenomenon of distance. Sheer physical distance, with its associated geography, assumes mainly a causal importance (Henrikson 2002, p. 437)." Dwight Eisenhower once famously explained on the "falling domino" principle, saying "You have a row of dominoes set up, you knock over the first one, and what will happen to the last one is the certainty that it will go over very quickly. So you could have a beginning of a disintegration that would have the most profound influences." (Eisenhower 1954, p. 382). The Domino Effect set off by the bankruptcy of Soviet Union resulted in a chain reaction, causing its neighboring or nearby allies to fail as well, and this occurred in a linear sequence, as communist countries fell one by one, leaving China, North Korea, Laos, Vietnam and Cuba the only country-level survivors of the communism's ideology. The above development suggests that the administrative characteristics of a country may be influenced by its neighboring countries. Different forms of governments encourage different levels of capitalism, laissez-faire and state intervention. Countries therefore, vary in the level of openness to foreign direct investments – there are differences in foreign ownership restrictions, investment promotion, pre-establishment procedures, access to land, currency convertibility, expropriation and international arbitration. The ease of

Table 2.6 Country openness

Country	Government type	Country openness	Ease of doing business (ranking)	Investment risk ratings (2002)	Distance away from Singapore (km)
Singapore	Parliamentary republic	89.98	1	84.8	–
Malaysia	Constitutional monarchy	76.06	20	55.3	KL – 307
Vietnam	Communist state	38.07	83	29.3	HCM City – 1,085
Hong Kong	Limited democracy	83.95	4	66.5	HK – 2,588
China	Communist state	31.65	92	57.6	Shanghai – 3,796 Beijing – 4,457

conducting a business can also vary – there are differences in the ease of starting a business, dealing with licenses, employing workers, registering properties, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing of business. The host government plays a big role in creating an ambient environment for foreign direct investments. It is therefore no mere coincidence that Singapore, which is well-known to have an efficient and capable government, has a very high investment risk rating, whereas Vietnam, with a reputation of haphazard foreign-investment policies, has a much lower investment risk rating, as seen in Table 2.6.

The form of administration or government also affects the country's legal system. Generally, there are a few types of legal systems in the world today, namely: civil law, common law, customary law and religious law. Table 2.7 shows the various differences between these legal systems. For example, Singapore and Malaysia apply Common law; Vietnam draws on a mix of Civil law and Communist legal law; while China uses Communist legal law. An international firm might prefer to draw up a contract based on international law or in a law that it is familiar and comfortable with, or call for international arbitration when a conflict cannot be resolved.

2.5.3 Geographical Distance, Gravitational Distance and Topological Distance

Distance can be measured in its actual or functional sense. For example, actual geographical distance can be operationalized as the air distance in 1,000 km; while functional distance can take the form of driving or flight-time (Reid and OhUllachain 1997). It should be noted that distance need not always be a straight-forward measurement of separation between two points. Distance can take on new

Table 2.7 Major legal systems of the world (Neubauer and Meinhold 2007)

Source of law	Common law		Civil law		Socialist law		Islamic law	
	Judicial interpretation and legislation	Control courtroom	Code	Judges dominate trials	Code	Judges dominate trials	Sacred religious document	Secondary role
Lawyers	Former practicing lawyers			Career bureaucrats		Career bureaucrats, Party members		Religious as well as legal training
Judges' qualifications								
Degree of judicial independence	High			Insulated from regime	Very limited		Very limited	
Juries	Often available at trial level			Mixed tribunals in serious cases	Often used at lowest level		Not allowed	
Policy-making role	Courts share in balancing power			Courts have equal but separate powers	Courts are subordinate to the legislature		Courts and other government branches are subordinates to the Shari'a	
Examples	Australia, England, USA, Canada, India, Singapore			France, Germany, Mexico, Japan	Russia		Saudi Arabia	

dimensions, especially when there are barriers or a lack of facilitation. An instance would be how a taxi-driver in Manhattan, New York, would have to drive his car around the surrounding blocks instead of going straight from point A to point B. Similarly, a business traveler might have to go to his local airport, take a plane from country A to country B, and then board a shuttle-bus from airport B to get to his destination in the city to meet his business partner. Transportation infrastructure like airports, sea-ports, water-channels and highways are important to bridge distances between places or to improve the accessibility of a location, and has been the emphasis of governments in order to attract more FDIs.

The desire of a market is dependent on its market size and geographical proximity (Johanson and Vahlne 1977). A transnational firm's internationalization often follows a proximate to distant sequential pattern. This shows that distance affects the relationship of two entities. The interaction between two locations can decrease because of intervening opportunities between them. Indeed, the First Law of Geography suggests that, "Everything is related to everything else, but near things are more related than distant things" (Tobler 1970, p. 234). Spatial interaction between a pair of locations decreases when the intervening distance increases. Spatial interaction, the realized movement of people, freight or information between two places underlines that the costs incurred by a spatial interaction is less significant than the benefits gained from it. There are basically three types of interaction model – the gravity model, the potential model and the retail model. The gravity model measures the interaction between any possible pair of location. The potential model measures interaction between one location and every other location. The retail model measures the boundary of the market areas between two locations competing over the same market. The Gravity model follows Issac Newton's Law of Gravity, which states that: "Any two bodies attract one another with a force that is proportional to the product of their masses and inversely proportional to the square of the distance between them". Therefore, the spatial interaction between two locations is dependent on their market sizes and intervening distance.

Topological distance suggests how two countries may seem more remote from one another if there are other countries or seas located in between them. The configuration of the number and arrangement of these intervening country-spaces is the key variable. For example, Switzerland is like the melting pot of the many cultures of Europe because it is located centrally in the continent; ancient China was much sheltered from the influence of other civilizations because of its natural barriers of mountainous plateaus in the west and seas in the east; Japan was able to isolate itself to stay as a closed economy and country because of its Sakoku (locked) policy and the distortion factor of oceans or seas (Beckmann 1999) until the arrival of Commodore Matthew Perry to force the opening of Japan to foreign traders; landlocked countries like Austria, Serbia, Afghanistan, and Bhutan or doubly-land-locked countries like Liechtenstein and Uzbekistan may have disadvantages in transportation and trade; while enclaves like San Marino in Italy and the Vatican City in Rome may become reliant on the countries surrounding them et cetera. Demand is more likely to be similar in geographically proximate markets (Burenstam-Linder 1961; Luostarinen 1979).

2.5.4 *Economic Distance*

Economic distance refers to the disparities between countries in terms of living standards and development of infrastructure (Reid and O'Hallachain 1997). Geography and wealth has long been perceived as correlated attributes of nations. In fact, it has been observed that nations furthest away from the equator are the wealthiest, e.g. Canada and Nordic countries (Low 1990). Even within wealthy continents and large countries, wealth increases with distance away from the equator, e.g. southern Europe and south USA are relatively poorer than their northern neighbours. This global North–south divide is called the Brandt line (Mackinnon and Cumbers 2007). The CID also found that only three tropical economies were high-income – Hong Kong, Taiwan and Singapore while all countries within temperate zones have either middle or high income industries with few exceptions.

Strictly put, economic distance is defined as the distance a commodity may travel before transportation costs exceed the value of the freight. Hence, countries try to improve their road, railways, in-land waterways in order to reduce their economic distance to transnational firms or potential investors.

From NASA's satellite photographs on earth, the concentration of the night-lights appears to be around North America, Western Europe and East Asia. Upon closer scrutiny on the maps of Europe and USA, there appears to be brighter and bigger nodal points at the whereabouts of London, Paris, Milan in Europe, and New York-Boston in the eastern coast, Chicago in the middle and San Francisco-Los Angeles in the western coast of USA. Night-lights are useful tools that transcend national borders to indicate economic development and the presence of commercial activities. From the images, we can be informed of economic and wealth-disparities around the world. The shiniest nodes represent the cities that possess the highest concentration of commercial activities while the less bright or dark patches reveal relative inactivity. Affluence inequality can have a stratification effect – people who are already well-to-do can benefit from wealth-condensation to get richer, but for the less privileged, opportunities are limited and they find it hard to elevate themselves out of poverty. International inequality is the economic differences between countries. Advanced developed countries enjoying high Gross Domestic Product in Purchasing Power Parity (GDP-PPP) while severely under-developed countries only have meager Gross Domestic Product in PPP (GDP-PPP). The G-20 also have a disproportionately 85% of the world's Gross National Product (GNP), consistent with the Pareto 20-80 rule. Wealth is geographically determined and wealth of a country has spillover effects on its neighboring countries.

Let's take Canada as an example. Canada's partners of free-trade agreements are mostly countries in close geographical proximity to itself. Having a free-trade agreement allows easier imports and exports, or other transfers between the countries in such a concord, and this relationship may bridge the two countries in terms of economic development and progress.

Table 2.8 highlights several countries and their top exporting markets. Similarly, Germany's 15 largest export markets are namely France, USA, UK, Italy, Netherlands, Belgium, Austria, Switzerland, Spain, Poland, Sweden, Czech Republic,

Table 2.8 Top exporting markets

Top exporting markets					
Singapore	Malaysia	Vietnam	China	Japan	USA
Malaysia	USA	USA	USA	USA	Canada
USA	Singapore	Japan	HK	China	China
China	Japan	Australia	Japan	South Korea	Mexico
Indonesia	China	China	South Korea	Taiwan	Japan
Japan	Thailand	Singapore	Germany	Hong Kong	Germany

Source: CIA website

Japan, Denmark and Hungary. These include all eight German neighbours, the majority of which are rather small countries. It shows that countries tend to export to countries in closer geographical proximity to themselves, barring the exception of strong economic power-houses like USA and Japan. It definitely seems that countries enjoy more intimate economic ties with countries nearby.

2.5.5 *Technological Distance*

Moore's law has suggested that computer power roughly double every 18 months. This has smoothed the progress of digitization and has radically lowered the cost and raising the speed of moving data and information, dramatically favouring geographic dispersion (Barkema et al. 2002). However, there is still much technological disparity between developed and developing countries.

Technological distance between two countries is the difference in their technical, industrial, scientific and managerial knowledge. According to the Economic Intelligence Unit (EIU 2008), the top ten technologically advanced countries in terms of e-readiness are namely Denmark, USA, Sweden, Hong Kong, Switzerland, Singapore, UK, Netherlands, Australia and Finland. Japan is at 22nd, Malaysia is 36th, China is 56th, and Vietnam is 65th; whereas in applied technology, USA, Japan and Germany would be the leaders.

Akamatsu's (1962) Flying Geese Paradigm seek to explain the spread of growth in the East-Asia-ASEAN region and the spillover effects of technology transfer, the process of sharing of skills and knowledge of Japan's applied technology to intermediately advanced countries like Korea, Singapore, Taiwan and Hong Kong, which in turn transferred these technologies to third-tiered countries like Indonesia, Malaysia, Thailand and Philippines. Similarly, Canada and Mexico benefitted from USA while Belgium and Switzerland benefitted from Germany. These suggest that learning, knowledge and innovation spillover are influenced by geographical distance and technological distance (Asheim and Gertler 2005).

2.5.6 *Socio-demographical Distance*

Demography measures a population's size, structure and distribution. Demography includes the study of age, gender, marital status, education and literacy, language, employment status and occupation, nationality or citizenship, religion, ethnic, et cetera. According to Huntington (1996), several cultures are inherently disagreeable while others are agreeable with each other. For example, the Sinic civilization is close to Japanese civilization, but it is distant from Western civilization; and Western civilization is close to Japanese and Latin civilization, but it is distant from Sinic and Islamic civilization. As the first law of geography suggests, every country influences or has an effect on its adjacent countries. The Bogardus Social Distance Scale (Bogardus 1926), a psychological test to empirically measure people's willingness to interact with others from a specific group type, has also shown that people are more willing to intermingle, inter-relate, communicate and cooperate with those who are more socio-demographically similar to themselves.

2.5.7 *Relational/Affinity Distance*

Ravenstein's (1885) law of migration proposes that (i) every migration flow generates a counter migration; (ii) the majority of migrants move a short distance; (iii) migrants who move longer distance tend to choose big-city destinations; (iv) urban residents are less migratory than inhabitants of rural areas; and (v) families are less likely to make international moves than young adults. Migration could be due to push factors such as lack of opportunities as well as pull factors such as better opportunities, living conditions, education, security, et cetera.

History has recorded great migrations during the Roman Empire Period due to "barbarian invasions" and the Transatlantic Migration of poor Europeans to the Americas et cetera. There have also been many Diasporas since recorded history, such as the Jewish Diaspora during biblical times and Chinese Exodus which drove 50 million Chinese worldwide during its civil war in the 1950s, mainly to countries such as Thailand, Malaysia, Indonesia, Singapore, Philippines, Vietnam, Myanmar, USA and Canada. Singapore is a multi-racial and multi-religious country, with many immigrants from China, Arab Peninsula, Malaysia, Indonesia, India, et cetera, and thus inherits much relationship and affinity with these countries. Colonial ties can also pass down legacies in law, culture, traditions, et cetera. Many Commonwealth countries that used to be colonies of Great Britain stay influenced by England.

The theory of intervening opportunity suggests that "the number of persons going a given distance is directly proportional to the number of opportunities at that distance and inversely proportional to the number of intervening opportunities (Stouffer 1940, p. 846)." Zipf's (1946) Inverse distance law, on the other hand, suggests that movement or interaction across space is inversely proportional to distance. Nonetheless, both imply that people and firms tend to re-locate themselves to proximate places (Stouffer 1940).

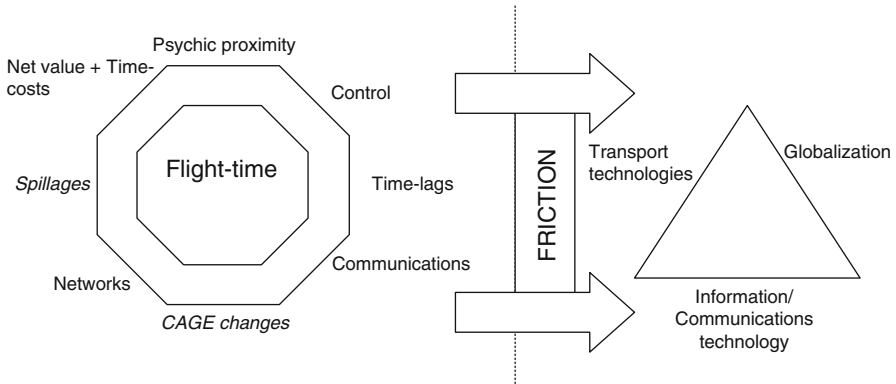


Fig. 2.2 Time-space compression, friction and fission effect of distance

2.5.8 Organizational Distance

Organizational distance includes changes, spillages, time-lags, psychic distance, networks, communications, net cost-benefit, control and friction between globalization, improvement of communications and transportation technologies. Out of these factors, changes and spillages are external factors while the others are internal factors. Figure 2.2 shows the influences and friction of distance on a firm and its organization design despite the time-space compression and bridging forces of information and communications technologies, transport technologies and globalization. The study therefore, seeks to investigate how flight-time affects these relationships, which will in turn influence the business strategies and organization designs of an internationalizing A/E firm.

2.5.8.1 Distance and Changes

Jared Diamond (1997)'s *Guns, Germs and Steel* proposed that Eurasian civilizations' hegemony is not due to intellectual, moral or inherent genetic superiority, but rather due to environmental differences and endowments, which were able to provide a positive feedback loop. Masters and McMillan (2001) agreed that there is better soil fertility and more resources in temperate regions, and propounded that people are more vigorous in cold climate, thus creating a positive and reinforcing loop that enhances the development of the colder regions.

Flight-time also dealt internationalising firms with Cultural, Administrative, Geographical, Economical, Technological, Socio-demographic and Relational changes. Some examples are the differences in workdays and work-hours, time zones, and climatic changes that would necessitate assimilation training on the part of the firms. The functions of buildings – to provide shelter from the weather and a comfortable living and working environment are essentially the same worldwide,

but there are very significant differences in the requirements for buildings in the hot and temperate climates (Seeley 1995). For instance, designs for thermal capacity (expansion and contraction) and insulation may have to differ for energy savings and comfort while materials used may have to differ due to agents like moisture and solar radiation.

2.5.8.2 Distance and Spill-Over

State failure and the resulting chaos of a neighbouring country can underline a country's stability as well, as refugees, armed conflicts, and diseases spill across borders (Bremmer 2006). Distance also affects migration, inter-city movement, bilateral trade, human interaction et cetera (Rosenberg 2004). Neighbouring countries or cities influence one another's macro, industry and task environment in the socio-cultural, political, economical, and technological spheres. Countries or cities, which are geographically positioned near to each other, interact and assimilate to each other's influence more than countries that are spaced apart. An example of an economical spill-over would be the Sijori Growth Triangle partnership arrangement between Singapore, Johor of Malaysia and Riau Islands of Indonesia. Conley and Ligon (2002) also highlighted that the rates of long-run economic growth are not independent across countries, and found that there are often significant spill-over that account for the spatial covariance in growth rates of neighbouring countries.

2.5.8.3 Distance and Time Lag

In this Digital Age, time is becoming more important (Lojeski and Reilly 2007). Evans and Harrigan (2003) emphasized that timely delivery may be more critical in some industries than others. For instance, instantaneous communication would be paramount for financial services like foreign exchange trading but less so for others. Tolerance of time lags may vary for different industries as illustrated in Fig. 2.3. Generally, services are non-storable, non-transferrable and non-standard, and involve more complicated contacts, negotiations, and monitoring. Therefore, the consideration of having an overseas office, which may affect the time-lag of communications between the clients, work-partners and the organization, is important for transnational firms.

2.5.8.4 Distance and Psychic Distance

Psychic distance may often be misunderstood as cultural distance but it is actually a measure of understanding and ability to adapt to a host environment. For example, China, Taiwan, Hong Kong, Japan, Korea, Vietnam and Singapore could be categorized in the Sinic civilization because of their common Confucianism values,

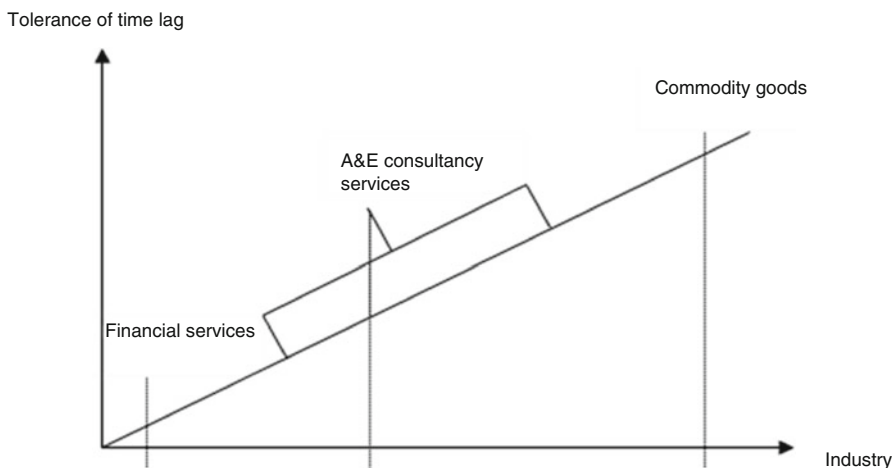


Fig. 2.3 Time-lag tolerance of different industries

traits and virtues (Huntington 1996). A firm or its employees should be able to adapt faster and better when venturing or re-locating into a new environment with prior understanding or trained adaptability. Cultural distance is different from psychic distance because there can be psychic distance asymmetries between two countries (Ellis 2008). An USA firm in Japan and a Japanese firm in USA would have similar cultural distances, but Japanese firms may have less psychic distance of the American market than Americans have of the Japanese market. American and European investors used to hold a mono-centric mind-set, assuming that what is being accepted in their home markets would be equally accepted in Asia to their own detriment. Now, these firms have acknowledged that every market has its own peculiarities and preferences, and have customized their solutions for each market.

2.5.8.5 Distance and Networks

The small world experiment conducted by Stanley Milgram (1967) suggested that human society is a small world and that people in USA seemed to be interconnected by three friendship links; while the “six degree of separation” suggests that the whole world could be interconnected by six friendship links. Social network portals like Friendster, MySpace and Facebook have become hugely popular because users are able to keep in touch with pals and also get to know one another’s friends.

Networks are very important in business – an overseas office seeks to be connected and integrated with its home-office/ head-quarters and other branch-offices to share information and resources; a firm seeks business networks to get in touch with business opportunities. Singapore’s Minister Mentor, Mr Lee Kuan Yew

once said in 1988, that East Asia share many characteristics derived from a common cultural base which is Chinese in origin (Barr 2000). This is why communities or cartels like the Singapore Chinese Chamber of Commerce and Industry have been formed, to link Singaporean Chinese up with fellow Chinese businessmen in the region who prefer to network and collaborate with Chinese counterparts that share common Sinic culture and values. Networks are probably more important in Asia than other parts of the world, and this can be exemplified by the prominences of Chaebols in Korea, Keiretsu in Japan, and “Guan-Xi” or “bamboo networks” in China. Like how distance between collaborators affects the efficiency of Just-in-time (JIT) techniques, e.g. co-manufacturing of automobiles and their parts by car manufacturer Toyota and its suppliers, distance affects a firm’s networks, the fluidity and efficiency of its work processes, and how a firm can leverage on its partners’ resources and strengths.

2.5.8.6 Distance and Communications

Brown and Duguid (2000) suggested that there is a social life of information. Information is best transferred or understood when there is spatial proximity and face-to-face interaction. In fact, it was proven statistically that there is a significant relationship between a country’s physical location and language similarities and the structure of global communication networks – telecommunications, written or face-to-face, represented by telephone, mail, trade and transportation networks (Ro and Gu 1995).

Furthermore, Allen (1977) found that communications are adversely affected with increased distance. Collocated and synchronous interaction provides advantages like rapid feedback, multiple and flexible channels, personal and nuance information, shared context, informal time for bonding, co-reference, individual control, implicit cues and the spatiality of reference (Olson and Olson 2000). Olson and Olson (2000) also found that participants working face-to-face encounter less confusion and misunderstanding and feel less disoriented or without context. This is because communications can be distorted by noise, barriers and filters as they go through the process of idea generation and encoding, transmitting through the channels, receiving, decoding, understanding and response. Hence although people recognize the greater flexibility and access enabled by technology, they still prefer face-to-face interactions for most purposes as these new technologies have their limitations as well as the need for operational protocol. Being near instead of away from the point of demand also allows for the flexibility in communications which is vital to understand about the market, practise due diligence and implement market strategies strategically to appeal to the right clientele, get businesses, deliver the project and be sustainable in the market. It seems that codified knowledge has become increasingly global in organizational reach, while tacit knowledge remains local, relying on geographical proximity to foster communication and interaction between firms (Maskell and Malmberg 1999).

2.5.8.7 Distance, Costs and Benefits

Luostarinen (1979) and Ghemawat (2001) highlighted the importance of benefits, costs, and risks evaluation using frameworks that consider socio-cultural, administrative and political, geographical, physical and economical factors. An internationalising A/E firm would have to evaluate the benefits and costs of different entry modes, organization structure and communication, and rewarding systems in the target-market. Entry modes would in turn affect organization structures and systems. Hu and Chen (1993) suggested that there are three factors which may affect the transaction costs of services: (1) geographical distance; (2) difference in culture, business customs and economic systems; and (3) government policies and possible political risks. Setting up a wholly-owned subsidiary incurs higher costs and requires more commitment, though it also gives the firm a higher level of control than exporting.

Distance matters because telecommunication and commuting costs significantly depend upon distance, whereas geographical proximity provides greater convenience for communication and transportation that facilitates more business opportunities and promotes the convergence of cultural and business customs.

2.5.8.8 Distance and Control

Globally dispersed organizational processes require teams to make effective time pacing and synchronization (Barkema et al. 2002). However, this is made complicated by the work-days and work-hours of cities around the world that may be different. For example, Arab countries may have a Friday to Wednesday work-week; some European countries, like Germany, have a four and a half day work-week, from Monday to Friday noon; whereas most other countries have a Monday to Friday work-week. Some countries also stipulate maximum working hours. Countries and cities may also have contrasting normal working-hours – some from 8 to 6, some 9 to 5, or 9 to 6. Some have short lunch-breaks; others may be entitled to longer lunch-breaks plus morning and afternoon teas, or reading newspapers and chit-chatting before real-work. Some cultures may “force” employees to stay back at least by an hour after the official working-hours or to leave only after their superior has left; while some can leave on the dot or even before the end of the day. Countries and cities may have different public holidays. Some companies allow their employees to bring work home or work else-where without turning up for work at the office as long as they fulfil their responsibilities and complete their tasks. Different regions may have different time zones too. Furthermore, time zones may change with seasons, making coordination even more complicated. Distance away from a home-market may also bring about climatic changes. The northern and southern hemispheres have opposite climates during the year. It can be spring time in February, summer in May, autumn in September and winter in November in Europe and North America but the exact

reverse in Australia and South America. The international manager would have to manage all these diversities and misfits (Drucker 1973).

Digitization might have revolutionized inter-city communications, but an organization that ventures overseas has to put the above-mentioned into consideration to decide on the appropriate level of control for the head-quarters to rein over the overseas office (Barkema et al. 2002). Firms would have to search for the fit between dominant strategic requirements of its business and the firm's dominant strategic capability to streamline itself away from the organizational quagmire (Barlett and Ghoshal 1998).

2.5.8.9 Friction

There would be friction due to distance incurred and friction due to the interaction between proximity and distance. Both Sun Tzu (sixth century BC) and von Clausewitz (1832) wrote much about how friction would affect warfare. Only practice and experience could enable the commander to make the right decisions for major and minor matters in the pulse-beat of war (Clausewitz 1832).

The same principle should also apply to international business management. Friction separates real war from war on paper. Every element has its potential of friction, and the effects each brings cannot be accurately measured, as suggested by the Black Swan phenomenon and Butterfly Effect. Thus, friction is the force that makes the apparently easy difficult. Friction of distance postulates that distance requires efforts, money and time to overcome. Friction covers factors such as temporal distance when team members are separated by work schedule differences and considerations such as team size, distribution asymmetry and face-to-face interaction which affects team-work; whether or not the team member has been multi-tasking; and technical skills and support provided by other team members.

2.6 Summary

This chapter debates on whether globalization and technologies have made distance and geography irrelevant or have exacerbated their importance. Figure 2.4 shows the dynamic relationship of flight-time, distance, environmental factors, and how firms organize themselves in overseas markets. Flight-distance is postulated to be a causal factor that affects Cultural distance, Administrative distance, Topographical distance, Gravitational distance, Economical distance, Technological distance, Socio-demographic distance, Relational distance and Organizational distance. To an internationalizing business entity, increasing flight-time implies changes in the physical environment, transportation, communications and opportunity costs, control of resources, extensiveness of useful networks, time-lags, physical, political, economic,

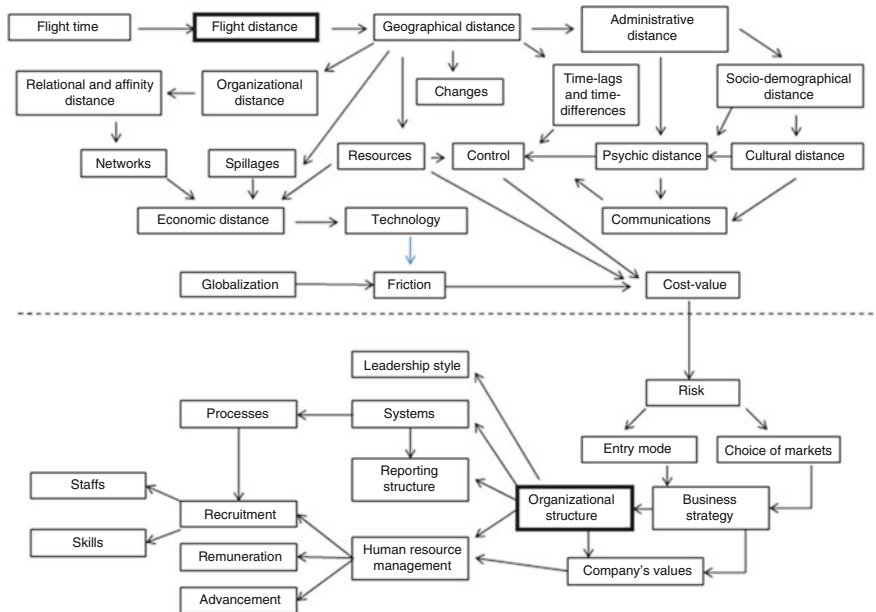


Fig. 2.4 Model of flight-distance and organization structure relationship

social and technological environment, spillages of influences and the resulting value-costs evaluation. A firm would then have to internalize these distance- rooted factors, by means of choice of markets, entry modes, business strategies and organization design.

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