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Taking a Systems View

We can experience globalization as a process that is all around us. It affects us through the products we consume, when we travel, and in our work life. However, it can also feel overwhelming and too complex when we try to understand it comprehensively. The number of players involved, such as national governments, organizations, and institutions that play a role, seem numerous and have varied objectives. The scope of events seems beyond anybody's control. At the same time, it is important that we attempt to analyze the process in order to translate events around us in a manner that can guide our behavior and decision making.

The influences and features that we attribute to globalization are a part of the "environment" that affects both individuals and organizations. We saw in the previous chapter how colonization reaches out from our history to influence societies even today. A systematic identification of such factors and trends and a study of how they interact to affect us positively or negatively can be useful. In this chapter, we will develop a systems framework that will provide such a structure for analysis. The subject can be dry, but the concepts come in quite handy and enable us to use the perspective through the chapters that follow.

Organizations and the Environment

Organizations are groups of individuals working toward some set of objectives. These organizations, whether commercial or not, dominate every aspect of our lives. It is difficult to conceive of daily life today without at least one organization playing a part in it. We work in organizations from which we earn a salary, we buy goods and services produced by organizations, and we are governed by another organization we call the government.

Organizations operate within a space often referred to as the environment. This environment therefore comprises of all the external influences that affect

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the organization's decisions and performance. Some of these influences have a direct effect, such as the actions of competitors seeking to draw customers to their products and the activities of vendors who supply the materials required for manufacture. For a commercial organization, these influences define the part of the environment that is their industry. Firms will have to monitor trends and events within their industry closely, as they have an immediate impact on the firm's performance.

Other influences have a more indirect effect on the organization. These may include broad demographic trends in society that will ultimately affect the people available for the firm to hire, the actions of the monetary authorities that may affect the interest rates banks charge, or political events that determine who governs the country. They set in motion decisions and actions that may not immediately affect the organization but will do so at some point. This set of influences is a part of the societal environment that also requires examination.

Both the industry and societal environments that circumscribe our organizations are embedded in, and affected, by globalization. An understanding of globalization in a manner that helps us make the linkages to our personal and organizational lives will be useful.

The Systems Approach

Our discussion of globalization as a complex phenomenon and our definition in the previous chapter suggest that we need to take a multidisciplinary view. The sociologists, anthropologists, political scientists, climatologists, economists, technologists, and others are all looking at how globalization affects nations and the lives of the people who live in them. Each discipline defines the nature of the problem and the solution in its own image and uses its own lens to view and interpret events. Similarly, each nation attempts to define a problem in the manner that affects its own citizens and proposes a solution with national interests in mind.

This makes it almost natural that one would want to look at globalization as a multidisciplinary system. Ervin Laszlo defines a system as "a collection of parts conserving some identifiable set of (internal relations), with the summed relations (i.e., the system itself) conserving some identifiable set of (external) relations to other entities (systems)." In other words, there are various parts to a system, they have identifiable relations amongst them, and together they relate to other systems. When all the relevant variables are determined and their linkages are known, then it is a closed system. The nature of globalization makes it, instead, an open system comprised of fluid boundaries, leading to entry and exit and the building of new linkages. A systems approach would allow one to understand these linkages and derive implications.

The academic literature describes different ways of viewing a system. Although early theorists aimed at developing a “general” theory that could explain all systems, this was not to happen. Several system approaches have emerged over the years, and they share common principles. Let us review three system-based approaches that have been used to look at global issues—namely, the general systems view, the world-system view, and autopoietic systems.

GENERAL SYSTEMS VIEW

The methodology of general systems analysis began around the time of World War II and was built to a significant level as a multidisciplinary problem-solving activity by Ludwig von Bertalanffy, an Austrian theoretical biologist, in an article first published in 1951. General systems analysis has been applied to problems in society, government, and enterprises.

A system in a generic sense comprises three components: inputs, conversion/process, and outputs. A feedback loop allows the output of the system to provide information to enhance inputs and improve process in subsequent rounds. Thus, if we think of an automobile factory as a system, then the inputs would include the raw materials such as steel and paint, components that are purchased from suppliers, equipment for manufacture and assembly, labor, and capital. The conversion process involves the manufacturing and processing utilizing the inputs and the managerial decisions that are involved, and the output would be the car that rolls out. If the cars are not selling well, that information is fed back into the system, initiating changes in, for example, the product range that will be produced in the future, as well as changes in the kind of inputs (such as better quality or style) that are introduced in the system.

The technique of systems analysis focuses on a problem in the system. This focus could be at an operational level in terms of efficiency, for instance, improving the number of cars assembled per hour. At a policy level, the focus would be on effectiveness, such as whether gasoline-fueled autos negatively affect the environment. General systems theory looks at how a phenomenon is organized by examining the structure and the function (or behavior) of the phenomenon. The system is defined, data are gathered to study the interrelationships in quantitative or qualitative terms, consequences are evaluated, and recommendations are made for decision makers.

Application of the systems approach to global issues led to the Global Systems Paradigm used by the Club of Rome in the 1960s to build a mathematical model to examine problems arising from population growth, widespread malnutrition, accelerating industrialization, deteriorating environment, and consumption of nonrenewable resources in the world. This group of experts argued that there were limits to growth suggested by the interactions in their model, and humankind would need to act to avoid that result. Other scholars,

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such as Laszlo, looking for stability in a new world order, used the perspective of systems analysis to make prescriptions for the future. Robert Clark (2002), in his book *Global Awareness*, viewed globalization as perceiving the world as a single place and saw the global system as comprising a set of nine domains or interconnected systems:

1. The nonliving physical system (e.g., minerals)
2. The living but nonhuman physical system (e.g., plants and animals)
3. The technology system
4. The social system
5. The cultural system
6. The economic system
7. The political system
8. The paradigm system (i.e., the metaphors and models that we use to make sense of what we perceive)
9. A connecting domain of networks or linking systems

The general systems approach studies the common properties across all systems. This explains how events are related to each other and therefore how lives are affected by globalization. It provides a methodology to understand the fundamentals of a problem, to look at it holistically, and to recognize patterns.

WORLD SYSTEM

Immanuel Wallerstein, a sociologist, pioneered an approach to viewing the world as a social organization involving interactions among social units that exhibited patterns. This approach, called a “world-system,” saw the world beginning from the 16th century taking the form of a capitalist economy. The production and exchange of basic goods and raw materials leads to a territorial division of labor, which is necessary for the everyday life of its inhabitants, and links different societies culturally. Such a world system evolves around a set of powerful (Western) states that belong to the core and other weaker (non-Western) dependent states that exist on the periphery.

The entire world system is the unit of analysis, instead of the nation-state, and the world economy is viewed in terms of a single division of labor, with multiple state structures and multiple cultures within an interstate system. The basic institutions of such a system include the markets, households, firms, states, classes, and status groups. The world market exists as a reality, and it influences all decision making, although it never functions fully nor freely (i.e., without interference). The modern capitalist system is an integral part of the

world system and is driven by an endless accumulation of capital, which in turn drives constant technological change and the expansion of geographical, psychological, intellectual, and scientific frontiers. The economic factors are seen to override the political, and modernization leads to a continuing dominance of the core over the others rather than progress for all.

In such a system, an underlying logic is that the core exploits the periphery in order to progress. Thus, this model seems to fit the realities of colonization and its effects, such as structuring the policies of the colony to suit the needs of the colonizer. The world-system approach also lends itself for use by those who see the present free market–capitalist system as being exploitative and merely replacing the colonial empires without dismantling the basic purpose. World-system theorists see the imbalance of power in the world as a major problem, which needs to be solved through democratic socialism. The core–periphery analogy can even extend to industry analysis, where the core is occupied by quasi-monopolies, and true free market exists only in the periphery. Similarly, commodities such as minerals and plantation crops, which are consumed in the core areas, exist in the periphery.

Thus, the world system is conceived as a set of networks of primarily economic activities that further drive political, social, and cultural relations that overlap and link individual, groups, and nations. The focus of this approach has been to examine the interrelationships between nation-states in order to understand and make predictions about social change.

AUTOPOIETIC SYSTEMS

Autopoiesis, meaning “self-producing,” was coined by biologists Maturana and Varela in the 1970s. They first proposed it as an explanation for the nature of living systems, and it has since been extended to various fields, such as social theory, cognitive science, and law. Systems that do not produce themselves, such as the general systems discussed above, are referred to as allopoietic, or “other producing.” The output of such systems (e.g., a chemical factory) is used elsewhere, and the systems themselves are produced or maintained by other systems.

The characteristics of autopoietic systems are that they must have a clearly defined boundary, have identifiable constituents, and follow clear laws that guide their interactions and transformations. Autopoietic systems are organizationally closed systems, and they have neither an input nor an output, except in that they are reproducing themselves, such as a cell does. Yet, they are interactively open, and the structure of the system changes in response to changes in its environment. For example, although cells are closed, they take in energy, and excrete waste. A system may have varying degrees of interaction with its environment—that is, outside its boundaries—as well as contain within it several subsystems possessing system structures of their own.

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Applying autopoiesis, Niklas Luhmann, a sociologist, viewed the global system as a society that is increasingly becoming differentiated on functional lines, such as economic, political, legal, scientific, and so on. He argued that in social systems, “communicative events” are continually produced. These events comprise information, utterance (communication and action), and understanding (comprehension). Society encompasses all the communications of its subsystems. Inside the system is the self-referring and recursive network of communications. Everything else, including humans, are outside the system. He sees a single world society made up of functionally independent subsystems that are autopoietic in nature. To survive, society must match its own variety to that of the environment.

As an example, once a communication—e.g., a foreign investment decision—is issued, it is based on and may include information about the where, the why, and the extent of the investment. It is received and understood in a particular manner and may provoke further communication about the investment. Thus, the whole system may be visualized as a network of self-referring and interacting communications of various types and as being independent of the people involved, who may change.

Globalization as a System

System, as seen in the three perspectives above, is a powerful metaphor. It enables us to view several components together in a comprehensive manner. Ideally, applying systems analysis to our world should produce a “general theory” that can explain everything and give us an “if x , then y ” relationship, which is the hallmark of good theories. However, globalization deals with both natural and manmade phenomena, as well as scientific and social phenomena. Instead of striving for a comprehensive theory, we can use the systems approach to build a comprehensive model, or an ordered set of assumptions, about our complex system. These would serve as guidelines for analysis and help understand the process of globalization.

The objective of each of the three approaches for taking a systemic view was different. The general systems paradigm examined effectiveness and efficiency issues, with a focus on the operational aspects of a system. The objective of “world systems” was to conceptualize the world as a society with winners and losers driven by a capitalist market ideology, and it took a political perspective. The autopoietic system view was to focus on the self-referential nature of the social system built around communicative events. Each system methodology comes with a set of assumptions and restrictions based on the objectives and circumstances under which it was developed.

The world-systems and autopoietic system models were trying to conceptualize the world as a society and examine world society as a system. Our objective

is to use the systems approach as a tool to understand and analyze globalization. Hence, we will borrow from these approaches to construct our systems framework. The premises on which we will base our framework are as below.

- a. Globalization, as defined in Chapter 2, is the continuing effort by the peoples of the world to interact and share transnationally in the pursuit of their objectives. This effort is revealed through communications between the peoples and the actions that they undertake to give effect to their interactions and sharing.
- b. We can reduce the nine domains identified by Clark in the general systems paradigm to five domains. This is a more manageable number and yet is enough to maintain sufficient differences between groups and reduce the differences within a group. Looking at the macro-environment from the perspective of an industry, Narayanan and Fahey identified four categories: social, economic, political, and technological. Adding the business domain into this list would give us five domains for the globalization system. Thus, these domains are *social* (including cultural), *political*, *economic*, *business*, and *physical* (natural and technological). The communications and actions take place in and across these domains, and across nations, and not in any particular sequence but randomly. Such interactions between them vary between situations, with some domains more dominant in one and less in another.
- c. Globalization is not a state of affairs but an ongoing process. The boundary between the globalization system and everything else (the rest of the world society) is constantly changing as globalization expands to incorporate more of society within its scope. It could also contract as events and activities opt out of globalization. As the process continues, some trends suggest a convergence while others may suggest a divergence across nations.
- d. There is no overall coordination of the globalization process, which appears to be self-producing as an autopoietic system. The process of globalization leads to various outcomes in each domain, and they continue to be a part of the globalization system. Several disaggregated interactions incrementally influence the next set of thoughts, words, and actions, constantly changing the nature of globalization.

Thus, globalization is embedded in a larger environment that comprises all nations and societies. Communications and actions take place around regions of the world that may be excluded from, although affected by, globalization. The constant self-production of the communications and actions further the process of globalization. Globalization does not produce an output; instead it constantly tries to expand its sphere of influence to encompass more activities within society.

The structure of the globalization system comprises elements and agents within the five domains (or subsystems) that interact with each other for a purpose. These elements may be human or nonhuman (such as machines, natural resources, and organizations). Some of the interactions may be formal and specified, while others may be informal and ad hoc. If the interaction is formal,

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there would be an underlying logic or purpose to it. If informal, or even with some formal relations, this logic may not be apparent and may require subjective judgments about the nature of the interaction. The nature of interrelatedness or interdependence of elements in and between the subsystems means that if any one element or interaction changes, there are resulting changes elsewhere in the system.

The Domains Within the Globalization System

The domains within the globalization system are meant to serve as broad classifications of communications and actions that cause interactions and create trends of convergences and divergences. They are not meant to represent mutually exclusive categories. These domains represent the areas in our society that play important roles in the lives of people and thus give cause to generate the communications and actions. A brief discussion of each follows, with indications of how other domains affect each.

SOCIAL

The structure of society represents how humans organize themselves to conduct intragroup and intergroup relations. The existence and size of ethnic groups, migration patterns, class divisions, families, kin groups, and tribal and racial distinctions all describe and constitute the structure.

Very few nations in the world have a homogenous ethnic group or a single language spoken in the country. China, Germany, and Japan come close. The United States is a nation built from immigration and was considered for many years to be a melting pot of different cultures arriving at a new concoction. More recently, as immigrants try to preserve their identities, some observers feel that the metaphor of a salad bowl with distinct identifiable elements is perhaps more appropriate than a melting pot. Immigrants have compensated for slowing birth rates and have supplied the skills and consumption demand needed for growth. Organizations make several adjustments to respond to these trends; for example, new bilingual Spanish/English magazines cater to the second-generation immigrants familiar with both languages. Some countries in Europe have reacted differently to increasing immigration from erstwhile colonies in Africa, with demands for restrictions on immigration. When populations of different religious groups in a country grow at different rates, it creates concern about how the changing balance of society will affect the way people interact.

Culture is the software that emerges from the hardware of society's structure. Culture encompasses attitudes, values, and beliefs. These are learned norms in a society. Basic value systems deal with concepts such as good versus evil,

acceptable and unacceptable behavior, and rational versus irrational. Value systems may also change over time, as societies mature and people interact with others who are different and have life experiences from which they derive meaning. Apart from values and attitudes, this domain will encompass religion, language, and belief systems, feelings of nationalism and ethnic identities, and so on.

Various aspects of culture differ significantly across a nation's borders and quite often vary between people of different regions, religions, or ethnic origins even within a nation. Beliefs and value systems are communicated through religion, within the family one grows up and through the rituals that are performed. Religion is one important source of value systems. For example, Hindus revere the cow and therefore McDonald restaurants known the world over for their hamburger offer an alternative to the beef patty in India. Islam abjures interest, and banks in Islamic societies instead of charging interest calculate a profit-sharing formula that is applied to their transactions. External motivations, such as missionary activity and colonization, cause people to adopt a different religion, which results in changes in their value systems. We will examine aspects of this domain in Chapters 4 and 5.

POLITICAL

A political system in a country determines how the country is governed and seeks to integrate various parts of the society into a whole. Thus, this domain would cover the practices that deal with how power is generated and distributed through society.

Historical factors often determine the nature of the political system. Internally, the groups in society who wield power are a strong determinant of the kind of political process that is followed. The nature of the political system determines the freedoms that people enjoy in the country, the legal/court system, the freedom of the press, and so on. The political domain also encompasses rules and structures within which people solve public conflicts and problems and guides how they exercise power. The constitution, how laws are framed and enforced, the political parties and how they operate, and the nature of bureaucracy that administers public functions all influence the nature of the political domain.

The political systems that countries follow range from democracy to totalitarianism, with military dictatorships, theocracies, and monarchies falling within the range. They vary primarily on the different levels of public participation in the political process, resulting in different forms of communications and actions. Political trends that are important to watch include the formal and the informal systems. The formal system would include the institutions of government such as the executive and the legislature, their functioning and decisions. The nature of the electoral process, the political parties that

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participate, and their espoused policies can indicate the nature of governmental decisions if they come to power. The informal system would include the political aspirations of groups of people and how they are expressed, such as through rallies, protests, and demands made on the government for changes to existing formal systems.

Legal systems followed in countries are usually of three forms: (1) Under common law, courts rely on tradition, precedents, and interpretation of legislation. The United Kingdom is an example. (2) Some countries, such as France and Germany, follow the civil law system, which is based on a detailed set of laws that are organized into a code. Under common law, the court interprets the events, while civil law relates to how the law is applied to the facts. Many countries have shades of both. (3) The third system is theocratic law, which is based on religious principles. The most common is Islamic law, or the *sharia* around which Saudi Arabia is organized. Some Islamic countries have parallel legal systems, the common law and the sharia, and on some matters give their citizens a choice as to which court they would prefer to go to for justice. We will examine aspects of this domain in Chapters 5 and 10.

ECONOMIC

Many view the economic domain as the primary driving force of globalization. Newspapers of most countries, almost on a daily basis, report on the impact of trade issues on the economy and the external economic pressures on governmental policymaking. International trade is seen as the vehicle to develop poor economies, and countries look for ways by which their citizens can participate in global economic activities.

The economic domain encompasses factors related to the production and consumption of goods and services and their exchange. Economic systems can theoretically range from central planning, where the government or a planning commission decides on national goals, what is to be produced and how it should be priced, to market oriented where the forces of demand and supply are allowed to guide the allocation of resources. While there are few countries at either extreme, most developed economies, such as those of the United States, Japan, and Western Europe, fall at the market economy end of the continuum, and a few, like North Korea and Cuba, would be examples at the other end. China and Russia are examples of societies in transition from central planning to a greater reliance on market forces. The choice of the economic system is also closely tied to the political ideology subscribed to by a large section of society, whether capitalist, where ownership of property resides in private hands, or communist, where the state owns all means of production. In reality, all economies are regulated to varying degrees, and there is a constant debate in society about the extent of regulation versus liberalization that is required in different sectors of the economy.

The structure of the economy changes over time as the share of agriculture goes down, giving way to manufacturing and service sectors. Governments monitor and prod the economy through policy instruments such as interest rates to maintain desired levels of employment and inflation and attempt to provide the right environment for businesses to function. Economic treaties and arrangements follow as nations formalize their economic relationships. Free trade agreements have significantly facilitated commercial activity, resulting in the formation of the WTO as an apex body overseeing the process. We will examine aspects of this domain in Chapter 6.

BUSINESS

The role of business as a key component driving globalization comes from the fact that it is closely related to the economic domain, and we constantly deal with business organizations as employees, customers, or suppliers. We cannot possibly avoid commercial enterprises unless we plan to lead our lives as hermits in the Himalayas!

Commercial enterprises lead the charge of globalization as they explore various nations seeking a market for their goods and services and as sources of inputs. A vast number of such enterprises in every nation are small and focus on their local communities, while the larger enterprises are professionally run and often extend their reach to many nations. The developments in technology, which have facilitated travel and communication by reducing cost and increasing speed, have provided a global reach that was previously reserved for large to small enterprises. Some of the large multinational corporations in the world command more resources than many nations. The size and influence of these multinationals keep them at the forefront of globalization.

While on the one hand corporations are accused of driving standardization through providing the same product or service, they also seek to vary and adapt their offerings to suit the needs of each market and can thus play converging and diverging roles. As these companies, rooted in nations, transact business with each other, they compete and collaborate across the world and provide myriad opportunities for interactions. We will examine aspects of this domain in Chapters 7 and 8.

PHYSICAL

The physical environment includes both the natural and the technological environments. The natural environment comprises both the nonliving and the living (but nonhuman) aspects. Under the nonliving would be the landmasses, the geological resources (oil, minerals), water, atmosphere, and so on. The living but nonhuman would include plants, animals, and insects.

The concern for overexploitation of the physical environment has led to calls for “sustainable” development—i.e., how do we continue living on this

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planet while replenishing resources, and not putting future generations in jeopardy? Several problems that have concerned the physical environment have led to calls for moving away from fossil fuels for energy and for better controlling pollution, loss of biodiversity, global warming leading to climate change, and disposable hazardous waste. Factories that are located along the U.S.–Canada border exude pollutants through their chimneys while staying within the U.S. regulations. Yet, these pollutants are carried by winds and settle on the Canadian side, where communities complain that the “acid rain” is damaging their environment and pitting their cars.

The technological environment includes the knowledge and procedures that explain how things are done. Thus, it would encompass the development of fundamental knowledge or basic research that leads to invention. This basic research is then often used to develop goods and services of use to people and deals with the practical application of the knowledge. Another area is innovation—improving existing processes and things or finding new and better ways of doing them.

Changes in technology have far-reaching implications for organizations. Development of computers and information technology has significantly changed industries such as telecommunications and entertainment and has significantly aided the productivity of almost all organizations. New products and services create new organizations, create new customer needs, and result in enhanced competition. Trends in areas of research and development and allocation of resources for these purposes by organizations or by the government are important indicators that one needs to keep track of.

Pharmaceutical companies in the developed countries have often taken a lead in the discovery of new drugs and treatments. Although they are then made available globally, divergences arise because of pricing. For example, companies have patented the drugs used in the treatment of AIDS, but the cost often makes them unaffordable for victims in poorer nations. Pharmaceutical companies in Brazil and India have developed other processes to manufacture the same drugs at a lower cost, but they are seen as violating patent laws. We will examine aspects of this domain in Chapter 9.

The ACE Framework

Figure 3.1 provides a visual image of the systems perspective to globalization that we have been examining. The five domains described above are shown as being embedded in the comity of nations. Constant interactions take place within and between the domains and nations. These interactions also set off trends of convergences and divergences through the nations, as we saw in the discussion of the domains.

The power of the systems approach to globalization will enable us to understand issues or events that arise within globalization holistically and

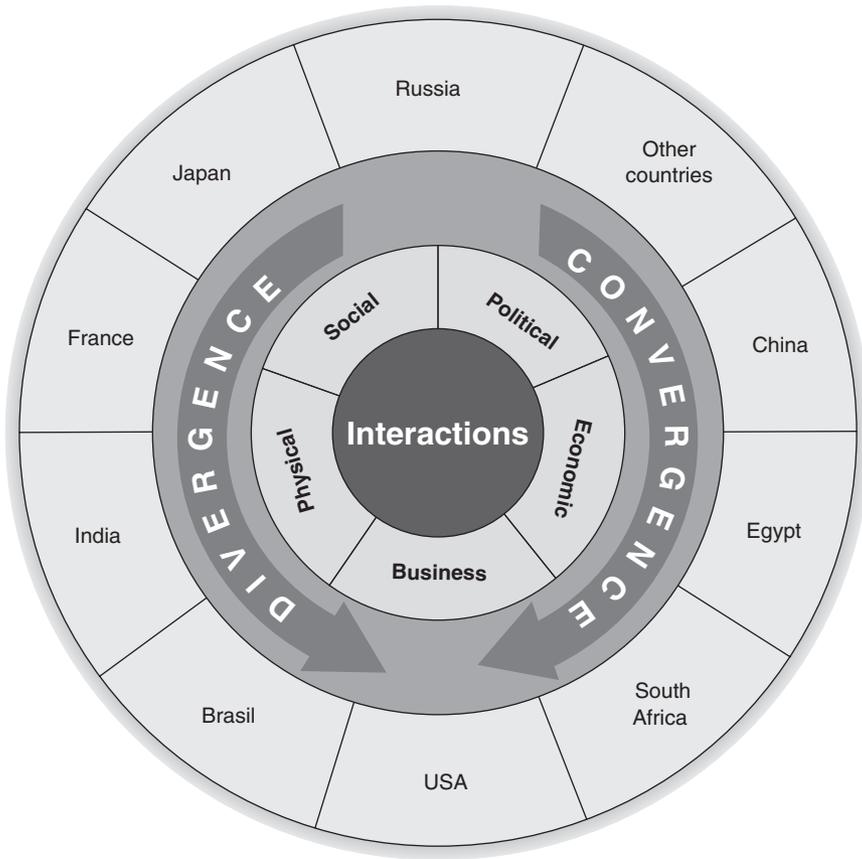


Figure 3.1 A System View of Globalization

thereby lead to better decision making. The systems approach can be translated into a framework in order to provide a guided process for gathering data, considering the interactions between the domains, and arriving at meaningful conclusions. The ACE framework, described below, comprises three steps.

ARTICULATION

Articulation requires clarification and exposition. Thus, to start the process, we must first:

1. Spell out the issue or the problem that is our focus for analysis.
2. Gather the information (data and opinions) related to the domains that affect the issue both directly and indirectly.

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Thus, in this step, we bring the multidisciplinary system perspective to focus on the issue through collection of data in all the domains.

COGITATION

Cogitation involves pondering or meditating on the problem. To do this, it would be useful to think along two lines of inquiry:

1. What interactions result between the domains, within and across countries, due to this issue?
2. What trends of convergence (integrating the world as one place) or divergence (maintaining societies as distinct entities) do we see across the nations as a result of all these interactions?

Examining the interactions introduces the dynamic nature of the systems analysis. Communications and actions evoke a response from interested parties that are connected to the issue at hand. They bring out the respective objectives of all those involved and help examine the new trends that may be initiated.

EVALUATION

The result of our cogitation would lead us to insights that we can use in our decision making. Evaluation helps to bring out the consequences of the analysis. This should be along two lines:

1. Who benefits or loses in the globalization process as a result of the interactions that have been set in motion? What scenarios emerge for the future? Do the scenarios have differential impacts on the individual, groups, and the nation?
2. What can I/we do now that would enable us to benefit or prevent loss as a result of this process?

When looking at the benefits and harm, it is important to be clear about the unit of analysis. Individuals, social classes, and even segments of the economy can be winners and losers in the way an event interacts across the domains. A company may benefit because globalization has removed an obstruction, enabling it to move operations overseas, while employees lose because globalization has removed an advantage they had.

Sometimes, the same unit may benefit from some aspect and lose from another. When the Multi-Fibre Arrangement that prescribed quotas for import of apparel into the United States was lifted in January 2005, firms in developing countries that produced products gained while firms in the United States

lost. At the individual level, the employees of the firms in the United States were hurt by the loss of business, leading to a loss of jobs, but the same employees benefited from the cheap imported goods they were able to buy from the stores. The differential impact can spread across domains. Thus, the loss of jobs (economy) hurt the employees' ability to provide for the education of their children (social), and in the next election they voted for the candidate (political) who promised to work toward import restrictions. Their employer, while laying off workers, was installing labor-saving equipment (technology) and diverting some production overseas.

An effective way of deriving implications and using the analysis for decision making would be to write scenarios, which is a powerful method of dealing with uncertainty by suggesting alternative paths for the future. We would be able to attach different probabilities to the uncertain trends we observe as part of the cogitation. By developing at least a couple of different scenarios (e.g., a more likely and a less likely one based on the different probabilities we attribute), one can conceive of different visions of the future. The scenarios can help us identify milestone events over time that would indicate which scenario is unfolding so that we can collect data and constantly evaluate the decision we have made. This would also enable mid-course corrections.

The globalization process is a complex one generating vast interrelationships. There is a great chance that the data and analysis may seem incomplete. Nevertheless, that should not prevent an attempt to analyze the situation. One should remain open to receiving and considering new information within the ACE framework on a regular basis and perhaps revise the scenario as one goes along. (See the Appendix at the end of the book for an illustration of the framework on the DP World case.)

Measuring Globalization

The debates on globalization revolve around its positive or negative implications for people and societies. The ACE framework will provide us with a way to examine both the positive and negative consequences of the process and help in directing action. The debates also assume that globalization is increasing. That, in turn, assumes an ability to measure the phenomenon.

How do we measure globalization? Various attempts to measure globalization have focused on economic measures alone, especially trade. Consulting firm A.T. Kearney, in collaboration with *Foreign Policy* magazine, has been attempting this for a few years. Their annual globalization index covering 62 countries is based on 12 measures, including technological connectivity (number of Internet users, Internet hosts, and secure servers), political engagement (memberships in international organizations, participation in UN security council

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missions, hosting of foreign embassies), personal contact (international travel, international telephone traffic, cross-border transfers), and economic integration (trade, foreign direct investment, and portfolio investments). Singapore and Switzerland topped the 2006 ranking as the most globalized nations. India and Iran brought up the rear. While this ranking is not perfect, and several scholars have problems with the criteria—the statistics used and methods of analysis—it is a pioneering attempt to be multidisciplinary, and it would be of interest to see how nations perform on these criteria over time.

What is of relevance for our definition of globalization is whether there is more sharing and integration between all the nations of the world, rather than an individual country's rank within a limited group being studied. Keeping the ACE framework in mind, examples of measures in each domain that would be of interest would include the following:

- Exports and imports between nations, investment flows (economic)
- Migration, languages spoken (social)
- Communication and travel linkages (physical)
- Attitude toward foreignness (social)
- Nations' impact on global environmental sustainability (physical)

It may well be an impossible task to put all these measures into one index and to track that over time. In the pages that follow, several issues that arise in different domains, and that would highlight the interactions among the domains, are examined from the systems perspective.

Discussion Questions

1. If a group, or a nation, opts out of globalization, will it still affect the system?
2. If the interactions of globalization are considered to be spiral in nature, would that explain why some issues are resolved and others seem to spin out of control?
3. What is the difficulty in devising a comprehensive measure of globalization?