

Real Estate Transactions: Policy Considerations for Law, Technology and Globalization

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This essay explores a number of issues related to intellectual property and technology in real estate transactions. It examines these issues with reference to differences in property law concepts in a global context, looking at both civil law and common law ideas, for instance. The essay also discusses the integration of technology into real-estate development projects and the infrastructure requirements for promoting real estate markets in countries with emerging and transitional economies. A key observation of the essay involves the need to think about property law questions in an integrated manner. It is no longer possible to think in a compartmentalized way regarding real property and intellectual property – in modern real estate transactions these areas are fully integrated.

I. INTRODUCTION

In this essay I explore the changing nature of real estate transactions in a market context, and outline, from a policy perspective, some of the key concerns involving law, technology, and globalization. This involves an examination of the way in which technology is integrated in to the modern real-estate development project, and the role that technology plays in facilitating the legal infrastructure of development in countries with emerging and transitional economies.

An important aspect of this essay involves focusing attention on the connection between real estate development and technology in the context of globalization. All too often, discussions of law, technology, and globalization center on concerns over intellectual property, and ignore connections to more traditional areas of real property and real estate law. The attitude is frequently one of real property as yesterday's news – a product of ancient feudal relationships with little connection to the policy considerations of high-tech lawyers operating in the global economy of the twenty-first century. As a consequence, very little has been written about the relationship between real property and intellectual property. This is unfortunate in as

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much as real estate development plays a significant role in economic development – a role that is particularly important in countries with emerging and transitional economies because these countries tend to have between 40 and 80 percent of their potential asset value locked up in real estate (DeSoto 2000: 15–67). This essay, therefore, provides an introduction to the policy considerations of recognizing the various connections between technology and real estate development that might be of interest in the context of globalization. Moreover, since little has been written on this topic, the essay serves as an outline for further research.

The essay is divided into three major parts. First, it addresses the market context for understanding property and real estate transactions. This part provides background on basic concepts and functions of property in a market context. Second, it addresses issues related to the integration of technology into real estate development projects. This includes discussion of matters such as “smart buildings,” “green buildings,” and access and control over intellectual property assets in real estate projects, such as corporate names and logos, trademarks, copyrighted business plans, architectural drawings, and even restaurant menus. Third, it addresses technology concerns in facilitating the development of legal infrastructure for real estate markets in countries with emerging and transitional market economies.

Many of the issues raised in the second part also apply to developing and transitional countries. The real estate projects being built in countries with emerging and transitional economies raise similar intellectual property and technology integration issues. Often the greater problem in these developing countries, however, is technology for implementing a property system. Likewise, developed countries share similar problems of technical infrastructure as those addressed in the third part. New technology is expensive and difficult to manage, not only from a technical perspective, but also from the point of view of its implications for law. Technical infrastructure is less of a problem for developed countries, however, because they already have a strong and working property system in place, and because they have the wealth and institutional expertise to more readily integrate change.

At the end of this essay I offer some concluding thoughts on moving from this policy outline to a potential research agenda concerning these matters of real estate development, technology, and globalization.

II. REAL ESTATE AND PROPERTY LAW IN A MARKET CONTEXT

In this part of the essay, I discuss some basic background matters that are important to understanding real estate and property law in a market context (Malloy 2004; Malloy & Smith 2002: 3–44). In doing this, I proceed in several steps. First, I explore some of the complexity of dealing with competing legal systems in the global marketplace. Here, I briefly comment on

common law and civil law distinctions in addressing property.¹ Second, I outline some of the basic conceptual issues involved in thinking about property in a global and multicultural context. This involves a discussion of the characteristics of property, and the relationship between property law and the idea of *ownership*.

A. PROPERTY IN THE GLOBAL CONTEXT: COMMON AND CIVIL LAW TRADITIONS

One of the initial problems of dealing with property in a global context comes in recognizing the differences presented by legal systems in place in different countries. Americans often fail to appreciate the fact that most of the world does not live under a common law legal system. Much of the world is organized under the civil law, or under a combination of these two systems, or in other systems that have roots in socialist law.

Recognizing the difference in legal system is important, since each system tends to have a different conception of property and of the rights, obligations, and power associated with having certain legally recognized “property rights.” The common law tends to focus on the actions and rights of individuals who have, in the United States, constitutionally protected property rights (Allen 2000; Singer 2001). Traditionally, these rights rooted in English common law extend to the “heights of the heavens” and to the “center of the earth” (Burns 1985: 67). Modern technology (airplanes, satellites, radio waves, for instance) and urbanization (conflicting uses and externalities related to population density) have worked to revise this conception. Constraints and limits to the idea and extent of ownership have been necessitated so that important community objectives can be met (airline travel, and mass communication networks, for example).

The common law recognizes the possibility of multiple ownership interests in the same property. The metaphor for this state of affairs is that property is a *bundle of sticks*, with multiple sticks representing different estate interests that can be fully owned and dealt with as a property right (Allen 2000: 74–80). In contrast, the civil law speaks in a more limited sense about property rights. Many of the property “sticks” recognized under the common law are merely *use rights* under the civil law. The civil law speaks to the idea of one owner with a property right – with a property right protected in the sense of the American understanding of having a constitutionally protected status with respect to the Takings clause of the U.S. Constitution, a position that is similar to British and Commonwealth conceptions (Allen 2000). In contrast, the civil law recognizes one owner and other users who have *rights in property*, as distinguished from a property right. The point is that the common law tradition and the civil law tradition offer different conceptions and characterization of property. These differences have to be accounted for when addressing real estate development in a global context.

Socialist systems tend to ignore or reject the idea of extensive individual rights in property. While individuals might have some property that they own, most of the real property is owned by the state, or “held” by the state for the benefit of the people. Private ownership is usually connected to a lease or license arrangement rather than fee ownership (Pei 1998; Randolph & Jinabo 2000). In many emerging economies that are evolving from a socialist or communist past, the very idea and definition of private property is either absent or poorly developed in law. This raises questions of legal definition and of technology to support the definition, as well as the purposes to be served by private property.

In many countries, subsurface rights are held by the state, and differences exist in the treatment of surface and above surface rights. In addition, there are significant differences in the way in which property is organized in different countries. For instance, property records may be organized in two very different ways – by use of a *recording system* or by a *registration system*. The recording system is used in the United States, while much of the world uses a registration system. More will be said about this in the third part of the essay.

B. PROPERTY AND CHARACTERISTICS OF OWNERSHIP

Traditionally, in the common law, property has been thought of as a “bundle of sticks,” and the focus has been on identifying and clarifying the various sticks that can make up the bundle. In the civil law, the idea is of a unified owner and others with inferior use rights. In both systems property classifications constrain flexibility. Likewise, property is a legal concept that can involve a number of definitional problems – such as classifying something as being either property or non property, or of sub-classifying property into real, personal (intangible), fixtures, and intellectual property (Singer 2001: 741–70; Sparkling 2000: 8–9, 33–62, 73–77). Such classifications tend to be grounded in local custom and tradition, and make global thinking more difficult. As a result, we should think less about the classification of something *as property* and more about the characteristics of something *as expressing an ownership interest*.

Instead of simply trying to classify things as property and placing them into legal “boxes,” with certain “sticks” and uses related to each box, we need to look more closely at how something functions in the law to express a *characteristic* of property in terms of ownership. Ownership is different from property, as it expresses a cultural-interpretive and cognitive idea about things. Whereas property involves a legal reference to a thing, *ownership* involves an interpretation of one’s relationship to things. Ownership is relational, dynamic, and culturally situated.

The characteristics of ownership tend to be readily observable in relationships, whether or not these relationships are classified as “property.” The four primary characteristics of property each give an owner a certain status

in relation to others with respect to a particular interest. The four primary characteristics of ownership are: the right to use and possession, the right to exclude others, the right to transfer (including sale, gift, devise, and mortgage), and the right to enjoy the economic benefits derivable from the interest (Singer 2001: 6–9; Sparkling 2000: 4–6). We can find an expression of these characteristics in traditional claims to property ownership in land, and we can find them in claims to control over one's body and identity – not a traditional form of legally defined property (*Moore v Regents of the University of California*; Singer 2000: 772–77; Sparkling 2000: 56–63).

In modern property law, it is important to understand that a primary concern of property is its *exchange value* (the value of the property for purposes of market exchange). In earlier times the focus was on defining the “stick” and protecting one's *use value* with respect to that stick. (My home has use value in that it gives me shelter, and it has exchange value in that I can sell it, lease it, and mortgage it.) Now it is clear that a great deal of the value of property ownership is in the ability to exchange property – to transfer it, and capture the economic benefits of ownership. United States takings law presents an example of this transformation. The development of law in this area moves from protecting the use value of property (focused on the rights of use and possession and the ability to exclude) to the idea in regulatory takings of protecting the property owner's reasonable investment backed expectations (focusing on the right to transfer, and the right to enjoy the economic benefits of ownership) (*Lucas v South Carolina Coastal Council*).

In our increasingly integrated marketplace, with numerous types and forms of property, we need a new conception. Instead of spending so much time worrying about the classification of the human body as property, for example, we need to think in terms of the fluid and dynamic characteristics of “ownership.” We need to think outside the various “boxes” of property and appreciate common characteristics between property types. We need to focus on the characteristics that make the idea of property valuable. This means that it is not so important to know what kind of property classification is used in a given country or legal system as it is to understand how the subject of investigation functions with respect to the key characteristics of ownership. The presence and extent of these characteristics is what is important to creating a market for private ownership and exchange.

In this context, property can be understood as a representational *sign* referring to a particular set of underlying characteristics (DeSoto 2000: 1–67; Kevelson 1992; Malloy 2000, 2004: 56–113). These characteristics are connected to a web of expectation interests that facilitate exchange and influence social organization. This new understanding is important because property rights do not exist as independent sticks or objects of coherent investigation in the absence of an exchange community – in the absence of a market for the easy and efficient transfer and exchange of ownership interests in property.

III. INTEGRATING TECHNOLOGY INTO REAL ESTATE DEVELOPMENT

Real estate transactions are primarily about real property. Nonetheless, they involve a number of mixed property issues. For example, many commercial real estate projects such as office buildings, shopping centers, warehouses, industrial parks, and public buildings involve complex issues of real property along with personal property, intangibles, fixtures, and intellectual property, as well as non-property matters such as those related to contract, securities, corporate, and environmental law (Malloy & Smith 2000, 2002). Each of the above categories of property has different legal rules that apply to them and, thus, a commercial real estate project raises a number of issues with respect to ownership. Of particular interest is the fact that law typically treats real property issues in accordance with the law of the place where the project is located, but permits other types of property matters to be governed under the law of any jurisdiction with a reasonable connection to the transaction.

In this part of the essay, attention is focused on some of the major policy considerations present when various elements of intellectual property are integrated into a real estate project. This is of interest in the context of globalization because the intellectual property rights may be governed by the law of a jurisdiction (or by an international convention) other than that of the jurisdiction where the property is located. This means that real estate development projects in developing countries, and in countries with emerging market economies, may have important elements of ownership governed by non-local law. It is also important because the developed and developing country may have very different interests when it comes to protecting certain types of property such as intellectual property. Developed countries have a tremendous incentive to protect intellectual property because it is a major source of economic value and a key “product” for export. Developing countries, on the other hand, do not typically have intellectual property as a major source of economic activity. Developing countries need the intellectual property invented elsewhere, and often times have little incentive to prevent locals from pirating or misusing it. This creates tension in property law systems and fuels conflict between developed and developing countries.

In exploring the basic issues in this area, discussion addresses such matters as “smart buildings,” and “green buildings.” It will also address concerns regarding project names, corporate documents, logos, trademarks, copyrighted business plans, architectural drawings, security systems, and even restaurant menus. All of these add value to a project and are necessary to operating a project as a going concern. Discussion will include mention of third-party and creditor concerns.

A. INTEGRATING TECHNOLOGY INTO CONSTRUCTION

A number of policy considerations are raised by the integration of technology into real estate construction projects. In many developments

these integration projects are commonly referred to as “smart buildings,” and “green buildings.”

Smart buildings use technology to control heating and cooling systems to regulate lighting systems, and to provide elaborate communication and security systems. Sensors regulate the building environment and turn lights on and off based on the presence of people in a room. They also use technology to regulate water in the washrooms and elsewhere. Communication systems include a variety of computer and phone needs, as well as teleconferencing and networking systems. Security systems can control access to different parts of a building, protect computer systems and networks, identify people in a variety of ways for individual access, provide electronic “eyes” and supervision of spaces inside and outside of the building, and deliver information to inside and outside security personnel. In some developing countries smart buildings also include their own water purification systems and utility support mechanics.

Green buildings often contain many of the same features as smart buildings. They are known as green buildings, however, because they incorporate technology in a way that seeks to support the ideas of sustainable development and environmental awareness. Such buildings are designed to make the best use of sunlight in providing light and heat, and to incorporate building materials made from recycled materials. They generally incorporate technology that dramatically reduces the use of fossil fuels in the building, and they provide “on property” sewage treatment and purification systems, while blending in with the natural surroundings.

A number of these same technology features are integrated into residential construction and into public development projects. Residential buildings include a number of devices for controlling the environment of the home and for making the home accessible to a broad range of modern communication devices and systems. Public development projects such as airports, schools, water works, and power plants also integrate numerous technologies. Many public projects now require a high degree of security-related infrastructure.

In each of the above type of examples it is important to keep in mind that many of these technologies are built into the real estate project itself and serve as the technology infrastructure and platform for technology uses within the building environment. They are not the uses themselves. This technology-supporting infrastructure adds value to the real estate project. It also typically increases the energy and power consumption needs for the project. Consequently, unless renewable energy sources are employed, these buildings add to demand on public utility systems and energy uses.

These buildings also raise a number of legal problems. As technological infrastructure is integrated into the building there are issues concerning the status of ownership. For instance, when does a technology become so integrated into a building that it becomes a fixture (governed under the law of fixtures rather than that of personal, or intangible property law and having

different consequences for treatment under mortgage law and the law of secured transactions) or even part of the real property itself (governed under the law of real property and mortgage law). Ownership rights, and the rights of creditors of the “owner,” will vary with the classification of the technology in property terms. This can relate to all four characteristics of property ownership in terms of one’s right to use and possession of the technology, the right to exclude others from it, the right to transfer it including using it as collateral for the extension of credit, and the right to capture the economic benefits of the technology. These are complex issues, even in the context of a well-developed property law system such as that of the United States. The problems become even more acute in a developing country with a rudimentary or newly enacted property law system. Policy concerns are compounded when considering that property classification other than real property will generally permit issues of technology ownership to be governed by law other than the law of the local jurisdiction where the property is located. This is particularly significant when one considers the perspective of third-party lenders on these projects. In the event of a default on credit, they need to be sure that they will have rights to the technology, since that provides a significant element of value to the real estate. Securing these rights is important because of the significant role of credit financing in real estate development.

B. INTANGIBLES AND GOING CONCERN VALUE

Additional policy considerations arise when dealing with intangible intellectual property that forms an important part of the going concern value of a real-estate development project. Examples include corporate names, logos, trademarks, copyrighted business plans, architectural drawings, security systems, and restaurant menus.

As a simple example consider a large shopping mall. The mall has a name, sign, and investment in advertising its identity and location. These are valuable assets. It also has corporate documents and business-plan information. There are architectural plans and design features that the architect seeks to control, and legal documents governing the organization and operation of the mall that the lawyers may seek to control as special work products. These issues are also true of the major anchor stores in the mall. Within the mall a number of logos and trademarks are used for merchandise, and for store and brand identification. Questions arise with respect to the ownership and control of these valuable intellectual property assets.

Further consideration must be given to protected notions of “trade dress” for some of the tenants in the mall, and perhaps for the mall itself. For example, consider the unique value of the Hard Rock Café, the Rainforest restaurants, Johnny Rockets, and the layouts of different department stores that are identifiable from the moment one enters. All of these

valuable assets need to be protected from misappropriation. They give the real estate value, but they are not real property. Consider also the role of third-party lenders. A lender extends credit against the collateral. In the United States, if the collateral is real property it is covered under mortgage law, but if it is intangible or personal property it is governed by Article 9 of the Uniform Commercial Code (U.C.C.). If a lender has to take over the mall, or a business such as a restaurant or a pub within the mall, it will need rights in the defaulting entity's name, trademark, business plan, menu, liquor license, lease rights, service contracts, and other intangibles. These are not real property, but they are interests that add value to the real estate, and which involve intellectual property issues.

Again, it is important to appreciate the implications of these integrated ownership issues in the context of globalization. They raise complex definitional questions, conflicts of law issues in terms of applicable jurisdictional law, and control issues that effect not just the value and operation of a project, but also the cultural meanings and implications of the project.

IV. TECHNOLOGY FOR THE LEGAL INFRASTRUCTURE OF DEVELOPMENT

Hernando DeSoto suggests that 40–80 percent of the total potential asset value in many poor and developing countries is locked up in real estate (DeSoto 2000). Getting at and releasing this asset value requires both legal and technical infrastructure. Beyond dealing with the concerns discussed in the previous section of this essay, we need to address the policy considerations of the basic technology needs for real estate development – we need to consider the technical infrastructure necessary for the support of a modern property law system.

In this part of the essay, therefore, I briefly address four areas of concern. I follow this with a discussion of several examples of legal problems associated with the relationship between technology and real estate in the context of globalization.

A. FOUR AREAS OF CONCERN

Here, I briefly identify four key areas of concern when looking at the intersection of real estate transactions and technology in the global marketplace: securitization (Malloy & Smith 2002: 611–26), title registration (*ibid.*: 361–475), survey standards (*ibid.*: 317–60), and the division of ownership with respect to place, space, and time. Each of these areas is important to modern real estate transactions. Each raises important questions about the “fit” between legal and technical infrastructure. And each is of particular concern to the economic development of countries with emerging and transitional economies.

1. *Securitization*

Technology has made it possible to integrate and coordinate vast amounts of information with ease and at low costs. This technology has been critical to the integration of financial markets and the development of efficient secondary markets for real-estate mortgages – an important step in extracting value from real estate and transforming it into working capital involves mortgage law. Mortgage law transforms the real estate asset into collateral and provides the owner with capital. This capital can be used to support further economic activity. While basic mortgage law has been with us for centuries, the development of the secondary mortgage market in the United States took off in the 1980s and caused an explosion in the productive capacity of real estate. These markets have continued to expand, and have become increasingly global. They involve the pooling of millions of individual mortgage loans to form bundles of cash flow against which securities can be issued and sold into the general capital markets. By turning complex real estate mortgages into generally recognizable securities, investors can direct capital into markets that serve real estate interests. In the United States alone this amounts to billions of dollars in new capital and over a trillion dollars in annual economic activity.

Once initial or primary markets for real-estate ownership and mortgaging are developed, secondary market activity using securitization connects the local real estate market to global investment markets. This creates an opportunity to dramatically leverage the asset value of capital in the community. In the United States the explosion in capital related to using the secondary market has expanded access to real estate markets by lowering the cost of borrowing.

The development of stable, transparent, and predictable primary and secondary mortgage markets in developing countries is important because of its ability to release asset value into global capital markets and leverage the resources available for economic growth. Securitization, however, requires legal infrastructure for dealing with complex and abstract ownership interests, and suitable technical competence to manage the information related to millions of individualized owners and their respective interests. Developing countries need assistance on both fronts.

2. *Title Registration*

With respect to primary markets for ownership and mortgage financing, one must first develop a system of legal tools for recognizing ownership interests in property – such as deeds, leases, easements, or civil law usufructs, for example. Once these are developed there must be a system for keeping track of ownership interests held by different owners. This is important for fixing relationships between owners, and for providing a public information system that dramatically lowers transactions costs when dealing with these interests.

There are competing systems for keeping track of this information and they fall in to two general categories – recording systems and registration systems. Each requires its own particular level of technology and individual and administrative expertise. Recording systems are used in the United States, but most of the rest of the world uses a form of a registration system. Recording systems use government institutions as depositories for information about ownership interests in property. Recording is not necessary to create an ownership interest, but it does give a person who records certain legal advantages against other claimants. In this system deeds, leases, and other documents are collected and organized by reference to the legal description of property. This system does not assure title or ownership. Individuals must search these records and take on the risk of concluding the meaning of the documents and information available. This risk can be insured but it is the individual that bears the cost of the insurance and of the risk that ownership will be other than as concluded from these records. Such a system is easy to start and does not require high-level expertise on the part of the institutional employees.

A registration system differs from a recording system. It acts to assure the quality of ownership on the public record. In a registration system, an ownership interest is not created until it is registered in the public office and once registered it serves as proof of title. In this system, the institutional employees need a relatively high level of competence about interests in property. Individuals transacting in real estate markets can rely on the registration of the property, and the government generally takes on the risk of errors. Thus, the registration system puts the cost of risk and information on the public in general, whereas the recording system has much of the cost picked up by the individuals engaged in the transactions.

In both systems it is important to have appropriate technology to handle vast amounts of discrete information and make it readily available to the public in a reliable and easily accessible format. Without the technical infrastructure, the introduction of property law concepts into a developing or transitional economy will be of limited value in promoting economic development.

3. *Survey Standards*

Interests in real estate are defined in part by legal concepts related to quality of ownership. This includes the legal definition of different estate interest or uses recognizable in the law. These interests are also related to geographic location and place. In order to define a real estate interest, therefore, we need a set of markers and references. The survey identifies the specific place and quantity of land involved in the referenced real estate interest. Surveying requires skill and basic tools for organizing geographic reference points in a uniform and standardized manner. Moreover, there are a number of accepted ways to approach the process of surveying and

identifying a piece of property. Thus, professional standards need to be developed and universally employed within the given community. Traditional survey methods are now being enhanced by space-based global positioning systems. These systems have implications for the survey. They improve the possibility of land surveying in remote and difficult to reach places such as the Amazon, but they also raise issues when they generate information that conflicts with on the ground surveys and legal descriptions currently in use. Access to and control over such technology, and the relevant survey standards, is important. Once again, institutional expertise must integrate an understanding of legal concepts, the use of appropriate tools, and the application of technology. Tensions can arise over conflicting claimants within the country, and also when locally generated information conflicts with the interests of outside investors.

4. Divisions of Place, Space, and Time

This topic area relates to dividing land by boundary lines (place); by space related to those lines (subsurface, surface, air rights); and by time (different estates such as life estate and remainder interest; or time shares). Technology plays a role in this process. In the United States, there is a set of very complex and abstract rules for segmenting a single piece of real estate into numerous ownership interests. This includes the legal concept of separating above-surface and below-surface ownership from the land surface, and allowing exchanges of interests independent of the other surfaces. Thus, U.S. law permits the transfer of air rights from one property location to another, as if there was a physical ability to contain a specific area of air and move it. These concepts are behind transferable development rights (TDRs), wetlands banking, and emissions trading in the land use and environmental law area. The U.S. also has the legal concept of having absolute ownership of a block of air (as in the interior of a third-floor condominium unit) for one week out of each year (the time-share concept). The ability to deal with such abstract ownership interests, and to manage market information about it depends on well-developed legal doctrines and technology.

These segmentations are important because they reduce the size of the investment needed to gain access to an ownership interest. This opens the real estate market to more people. Lower-income people in developing countries might be able to take advantage of such concepts to transition from informal "ownership" status based on possession and use, to formally titled owners with asset values that can be readily borrowed against in an open market. In developed countries, these complex divisions of ownership have enhanced economic growth and development. Working to establish similar concepts and technology in countries with emerging and transitional economies could prove to be important for their economic development.

B. EXPORTING DEVELOPMENT: EXAMPLES TO CONSIDER

Globally, major real estate development is needed for economic growth. This development requires both technical and legal infrastructure, and includes a wide variety of real estate projects such as: housing, office buildings, warehouses, manufacturing facilities, schools, hospitals, airports, dams, power plants, oil refineries, water and sewage treatment plants, among others. It involves areas of law that go well beyond basic property and mortgage law, and it requires detailed consideration of the connection between real estate and technology, as well as the relationship among law, markets, and culture.

All of this development is expensive. The cost of the legal and technical infrastructure makes these projects extremely difficult in developing and transitional countries. There is also the problem, in countries with emerging and transitional market economies, of how to pay for the updates required by continuous changes in technology. If an emerging economy is set up with computerized land title records for instance, what happens as computer technology changes and they need ongoing assistance in upgrading and moving information? If the receiving country is a poor country, it may not be able to sustain its institutional competence without a long-term assistance plan in place. Thus, we must also consider the proper technology fit for any given country. An improper fit may cause economic disruption and lead to technical dependence from outside sources. Therefore, it is important to understand that globalization of real estate markets can bring economic growth, and at the same time it can also carry the risk of cultural, legal, and technological dependence.

C. EXAMPLES

As a way of making some of these policy considerations more concrete, I offer a few brief examples that illustrate some of the concerns that arise when considering real estate development in the context of globalization. These examples address: (1) the need to simultaneously establish interdependent infrastructure; (2) the need to focus on the characteristics of ownership rather than rigid categories of property definition; (3) the need to consider the expectations of third-party investors (lenders); and (4) the need to eliminate systemic corruption.

1. *Establishment of Interdependent Infrastructure*

In the early 1990s, the Chinese government became increasingly interested in developing markets for some form of private real-estate ownership (Hom & Malloy 1994; Pei 1998; Randolph & Jinabo 2000). I was fortunate enough to participate in several exchange workshops in China concerning this and other topics related to the transition to a market economy. With

respect to the development of a property law system, early legislation dealt with defining the idea of private property and establishing a right to own a real estate interest that could be bought and sold within certain defined constraints. Some of the early property law legislation was only a few paragraphs long. It failed to cover a number of important concerns such as what to do if a developer sells a home to X at 10:00 AM and then sells the same home to Y at 11:00 AM. By American standards this early legislation was greatly under-developed. It focused on definitions of property, but failed to account for information problems and for easy opportunities to commit fraud. It also lacked an understanding of the need to create a variety of institutions to support a market in real estate.

As legislation evolved it began to address these concerns. It became clear that building a property system required legal and technical infrastructure in a number of areas. First, there was a need to go from the idea of defining property to the creation of a system for actually identifying and describing property in a uniform and standardized way – such as by uniform survey standards or by reference to global positioning technology. Second, there was a need to address concerns about fraud and the risk of incomplete or erroneous information about property. This required the development of a title protection system using some form of public recording and registration. Today, such systems employ computer technology and require institutional competences in both law and technology.

Third, there were also needs related to dealing with credit. Since some of the potential unit buyers would need credit there was a need to address mortgage and lending markets. Up to this point in time most banks had been designed to lend to large state entities rather than make small loans to individual consumers. Therefore, it was necessary to develop new methods of initiating and tracking millions of individual loan schedules and payments. Thus, new consumer banking offices and practices were needed, as well as standardized mortgage forms. New methods were also needed for calculating and standardizing property valuation. This was particularly important since the market for property was being set up in a context in which there were no prior market values for easy reference.

Each of these concerns involved a need to integrate legal infrastructure and technology. Moreover, the successful functioning of the original goal, of developing a residential housing market, was interdependent upon the simultaneous development of the related infrastructure. All of these basic areas of concern had to be addressed at the same time, and this made the development of legal and technical infrastructure that much more complex and expensive.

2. Focusing on Characteristics of Ownership

The Chinese experience in the 1990s also provided additional insight on matters of real estate development. As the Chinese looked to both common

and civil law systems for ideas, there was a need to address the particular nature of the interest to be used in their developing market. Focusing on the specific “sticks” in the bundle of the common law notion of property was difficult. In part this was because the modern common law was grounded in a concept of “absolute” private ownership (the fee simple absolute). The Chinese wanted a less ambitious conception of property because of their commitment to the socialist idea of the people having collective ownership of the surface and subsurface of land. The government also wanted to control the transfer or property interests and regulate the economic profits derivable from ownership. This was to help avoid massive speculation in the newly approved real estate markets.

Several other concerns were also raised by the lack of legal infrastructure. Two important matters involved the lack of a mature mortgage law, including foreclosure procedures, and a lack of a well-developed land-use and zoning law. These two matters were of particular concern to lenders and investors. Lenders wanted to be certain that they would be able to realize on their collateral in the event of default, and they and other investors were concerned about the absence of land use and zoning because changing uses could undermine the value of a project.

These and other concerns were addressed by focusing on the primary characteristics of property, rather than the particular stick to be assigned as a property interest. Thus, the main concern was to develop a form of property ownership that would give people an incentive to work and that would develop a market approach to meeting consumer needs for residential housing. This meant that ownership could be in forms other than those of the traditional common law (focused on the fee simple). The ownership interest could be called just about anything as long as it provided some form of value in terms of the four primary characteristics of ownership. This includes the right to use and possession of a particular piece of real estate (even if limited to a term of years); a right to exclude (even if it is not fully applicable against the state); a right to transfer (mortgage, sell, devise, or gift, even if subject to various restrictions); and the right to enjoy the economic benefits of ownership (even if gains in equity appreciation and profits are limited or capped by government regulation).

Defining, controlling, and regulating these characteristics and their limitations required both legal and technical infrastructure. By focusing on the characteristics of ownership rather than the identification of particular property sticks, the task was made easier. The state could retain control of the land, for the benefit of all of the people, by positioning itself or a government related entity as a landlord on a lease. The real estate development could then be arranged as a lease with certain characteristics and limitations spelled out in the lease, without the need for extensive and detailed property legislation. Given a leased-based arrangement, the term of use and possession could be limited, and the ability to transfer or profit from an ownership interest could be restricted. It was also possible to provide for

events of default and for ejection procedures, as well as to clarify and restrict uses on the property. This addressed the lack of mortgage/foreclosure law and the absence of a comprehensive land-use and zoning law.

Thinking in terms of dealing with the characteristics of ownership rather than the numerous potential classification of a property interest allowed for a creative response to several problems. It also required less legal and less technological investment and infrastructure, and facilitated a quick, although case-by-case, ability to launch a new market in property.

3. *Third-party Investor Expectations*

In the above example I mentioned the need to address the concern for a lack of a well-defined foreclosure law in China. This type of concern involves a third-party expectation problem. It is a problem that is also illustrated by a situation in Russia after the dissolution of the former Soviet Union.²

After the collapse of the Soviet Union, the Russians were seeking an infusion of Western money for real estate development. There was a need to upgrade many buildings and facilities in order for Russia to be competitive in the post-Soviet Union era. Western lending institutions were sought as sources of capital, but these institutions were concerned about lending in Russia. One reason for this concern was that Western lending institutions were used to making mortgage money available against the security of the real estate. This required a stable, predictable, and advanced system of property identification and ownership records – in particular it required records of ownership with reference to legal description.

The Russian property system was not organized in a way that was familiar to many Western investors. In many instances there were no property records organized by legal description. Instead, the system had been developed with reference to records on land improvements and uses. This use-related system of record keeping comported with the Marxist and Soviet idea that land had no value until labor was added. As a consequence, property records were organized in accordance with improvements added to the property. The problem was that these earlier improvements were to be replaced with new development, and to secure mortgage financing, lenders wanted to have a clear record of title information on the underlying real estate. Meeting the expectational needs of Western investors required a new approach to record keeping and a new set of institutional competencies.

4. *Elimination of Systemic Corruption*

In the late 1990s, I participated in a Law and Economics conference in Mexico City.³ A key concern of some speakers from Mexico and from other Central and South American countries involved the need for law to address systemic corruption (Buscaglia 1999; Sen 1999: 275–79). The concern

raised an important set of issues related to the connection between legal and technical infrastructure. With systemic corruption as an identified problem the technology issues became more complicated. For example, it sounded good to American participants to suggest that title protection could be enhanced by more advanced use of technology in either a recording or registration system. Our Mexican, and Central and South American participants, however, wanted to know how the technology might inadvertently enhance the ability of a few people to further corrupt the system. The idea was expressed that Americans often make recommendations based on their own experience. In the United States, government corruption exists but not as a general rule. Thus, people take important property documents to the recording office everyday and the documents get processed properly. In some countries, however, many workers in the government institutions are corrupt. Documents may be taken to an office and not get recorded unless accompanied with a bribe, or they may be improperly dealt with as part of a corrupt favor to some other person or interest. In such a case, one must ask how certain technology might help reduce corruption, or in the alternative, how it might enhance it. A centralized computer system for paperless records on real estate ownership may be more efficient than some alternative, but it may also enhance the possibility that only one corrupt computer operator could easily change information on a system-wide basis.

The concerns raised at the Mexico City meeting are important. Real estate development requires significant technical infrastructure, but technology must be evaluated from a variety of perspectives. Technology that enhances efficiency in one setting may facilitate corruption in another.

V. CONCLUDING THOUGHTS

In this essay, I have outlined a number of policy issues that need to be addressed with respect to the connection between real estate development and technology in the process of globalization. These concerns relate to the integration of technology into real estate projects and to the technical infrastructure needed to develop property law systems in countries with emerging and transitional market economies. At this point, very little has been published on these issues related to globalization in real estate development. This essay provides an introduction and overview with respect to some of the topics that can be pursued in future study.

As the essay indicates, there are numerous topics to be addressed. Work needs to be done on the comparative law issues of property, on the application of intellectual property law in the real estate context, and on the implications of new technology for real estate development. The fact that there are currently few materials in this area makes it difficult to address a number of policy concerns regarding real estate development. With this essay as a starting point, we can begin the process of focusing more attention on the

often times neglected topic of the connection between real estate development, technology, and globalization.

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NOTES

1. Common law countries include England and her former colonies such as the U.S., Canada, and Australia. Civil law countries include much of Europe and former colonies of such countries as France, Germany, Spain, Italy, and Portugal. Most of the developing world is under a civil law or a hybrid system. For basic introductions to the civil and common law see Hogue (1996), Holmes (1991), Merryman (1985), and Watson (1981).
2. This example comes from a conversation with Dr. Ivan Velev of Land and Real Estate Initiative (LARI) Group of The World Bank, Washington, D.C. on 10 April 2001.
3. Annual meeting of the Mexican, Caribbean, and Latin American Law and Economics Association, Instituto Tecnológico De Mexico (ITAM), Mexico City, 26–28 October 2000.

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