Land Privatization and Operational Gaming

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ABSTRACT This paper focuses on the use of gaming to educate local government officials and land planners in Russia about the workings of market economies and the practice of land development. The research is based on extensive use of the Community Land Use Game as a learning tool for both planning students and practitioners. It relates the experience of one run of the game with land economists in the Institute of USA and Canada Studies of the Russian Academy of Science and describes how various activities of play were applicable to the privatization work they were currently doing.

Introduction

This paper focuses upon the practical matter of communicating the ideas and concepts of land privatization to state and local officials and urban administrators unfamiliar with its purpose and potential in the development of cities and towns. As urban centres in Eastern Europe, Russia, and the NIS move into market economies, the issue of private land as an essential factor of production becomes more important and critical. The establishment of land markets, the development of a real estate industry, and, in general, the building of wealth (capital pools) through mortgage banking is all very new to most of them (Major, 1993). Indeed, the notion of ‘land’ as having an intrinsic value at all is unique to many eastern European entrepreneurs who previously worked wholly within socialist or communist political systems where all land was state owned (Rumyantsev, 1997).

Having run the Community Land Use Game (CLUG) with some success at the Institute of USA and Canada Studies of the Russian Academy of Science in the summer of 1993 and in the US in 1997–2000, there is reason to believe that it could become an effective pedagogical tool for understanding the need for private land in urban development. This notion was even further supported after discussing many current land privatization issues with various US AID (Agency for International Development) consultants in Moscow during the summer of 1997. Among those contacted were planners and land economists from PADCO, Arthur Andersen, the Urban Institute, and the Russian Privatization Center. In the run of the Community Land Use Game in the summer of 1993 players gained an immediate understanding of how land markets become established, how monopolistic property holdings either impede or inhibit the extension of urban infrastructure, and how transport costs severely influence the location of non-residential land use activities. Gaming exercises such as CLUG
not only provide a rudimentary understanding of individual urban processes and land markets, but also illustrate the critical connections and interdependence between them (Feldt, 1995). According to former Professor Victor I. Rybalskiy of Kiev Civil Engineering Institute: “... it is imperative to quickly create for or adapt to the conditions of the CIS [Commonwealth of Independent States: former USSR countries] business games that simulate the modern market economy” (Rybalskiy, 1995, p. 255).

Dr Victor Supyan of the Institute of USA and Canada Studies, believes that CLUG could have continual utility for Russian officials to understand land markets as they are still not operational across Russia (Supyan, 2000). In addition, many of the city or rayon (county) officials that create land registration systems are unfamiliar with how land markets work, and having such knowledge in cities could be of great use in the development of cities in Russia. In fact, the disjointed and problem-riddled land registration systems in Russia have hindered the World Bank in providing funding for housing (Rumyantsev, 2000).

**Perceived Problems and Issues of Land Privatization**

In general, appointed and elected officials in many cities of the former Soviet Union view the concept of private land as inimical to planning and development (Major, 1993). This attitude is due in part to the historical absence of a land market, and the limited operation of the current land market. This situation proffers several profound concerns for potential urban planners and developers. First and foremost is the fact that most policy makers are presently forced to make development decisions while they are totally unfamiliar with the workings of land markets. Their lack of knowledge in turn creates a plethora of second tier problems since inadequate comprehension of market mechanisms often leads to faulty land development policies. Poor decisions frequently become manifest in the establishment of ineffective or unenforceable land use regulations, the gross under or over valuation of land, and at times, the creation of unintended tax loopholes for opportunistic investors. Finally, it should be pointed out that the complexity of the problems and issues themselves could become so overwhelming that policy makers simply give up and postpone the privatization of land indefinitely. Lost in a sea of unknown consequences they fear a substantial loss of control and the possibility of immutable damage to their city’s development. This, in fact, has already happened in several cities in Russia including Moscow in which Moscow’s mayor refused to privatize land (Moscow Times, 27 May 1994, p. 1)

The limited knowledge that many municipal officials have of land markets and their operations has become a primary concern of most donor organizations such as the United States Agency for International Development (USAID), the World Bank, and other international funding groups (ABD and Associates Ltd, 1993). For this reason most of these agencies have focused their initial aid to the NIS on the instruction and development of land information systems (LIS) or a real estate registration system. An LIS is essential to the buying, selling and mortgaging of real estate. Its utilization can locate and describe any parcel of land within the system, reveal its ownership and any possible encumbrances that might restrict its sale or development. According to the UN Center for Human Settlements, “Land markets can only function effectively if they are characterized by ease of entry and ease of buying and selling—which in turn,
depend on a good information system about land, including who owns the rights to each plot, secure tenure arrangements, and appropriate registration and recording mechanisms” (UN Center for Human Settlements, 1996 p. 252).

To be an effective development tool, an LIS has to be framed within a set of policies and procedures to guide its operation. This provides city officials and staff members with a clear understanding of its potential utility in privatization work. Thus, knowledge of land markets is required for the establishment and operation of an LIS, which, in turn, is required for land privatization activities to proceed.

In addition to the fundamental problems posed by inadequate knowledge of land markets, land privatization is also hindered by the perceived fears and concerns of local policy makers. Many mention the loss of revenue presently garnered through land rents, potential nuisances emanating from a lack of land use controls, increased demands for local government services, and possible hegemony of foreign interests over local politics. However, the greater publicly stated concern is the foreign ownership of land, a concern that continually hinders privatization initiatives under Russian Presidents Putin and Yeltsin (Supyan, 2000). Added to this is the further concern of civic leaders in older cities that their cultural heritage could be severely attenuated should any historic buildings be replaced by new land development (Patterson, 1997). Real estate privatization is also strongly opposed by the communists and many local government bureaucrats (chinovniki) who fear the loss of the state’s control over land and the loss of many bribes taken in the current, disjointed procedures for real estate registration.

The Law on Cooperatives enacted in 1988 marked an abrupt change in economic development for the Soviet Union (Smith, 1990). This legislation was the first legal charter for private business and essentially replaced the New Economic Policy (NEP) of 1921 brought forth by Lenin that originally recognized the need for private cooperatives in the economic recovery of Russia after the First World War (Smith, 1990). Under the 1988 law private cooperatives were granted fairly extensive rights. They could establish banks, sell stocks and bonds, engage in foreign trade, and secure raw materials from any available source. The one right omitted in this new bundle, however, was the right for private cooperatives to own land. Thus, since the advent of perestroika most business enterprises have focused on the acquisition of Western dealerships and franchises, the rental of remodelled commercial and residential space, or general entrepreneurial activities that do not require the use of fee simple property (Campbell, 1994). In the ever expanding private sector the activities of private entrepreneurs now constitute 70% of total Gross National Product (GNP) (Current Digest, 1997b).

Today there is considerable interest in Russia in the National Land Use Code, which supposedly will allow for the privatization of urban land (Current Digest, 1997a). President Putin announced at the beginning of his presidency of his desire to encourage land reform (Supyan, 2000). In January 2000, the State Duma (House of Representatives) passed a cadastral law that was to become law in July 2000. However, there is no funding provided for its implementation (Rumyantsev, 2000). Consequently, there is no unifying federal law on real estate privatization and registration, so oblasts (states), cities and rayons (counties) have each devised their own systems. Often these local legal frameworks reflect local feelings about land reform (pro or con), and more importantly, the power
of local organizations. In some areas, city governments that may be more pro reform override local government land committees that tend to be anti-reform or visa-versa. (Land committees are extensions of the federal Russian Committee on Land that grew from the Ministry of Agriculture.) The Ministry of Agricultural has often reflected the concerns of the communist party and has often obstructed land privatization). The final results of this situation are numerous and different (disjointed) legal land privatization and real estate registration systems. This has been the situation since the inception of the Russian Federation in 1991 through to 2000, and it is the fundamental reason why more instruction and information on the operation of land markets is needed by Russian local governments. Knowledge about land markets should enable Russian officials to create market responsive land privatization systems to aid in housing and economic development.

Gaming Simulations

Gaming simulations such as the Community Land Use Game incorporate three significant concepts relative to the problems of land privatization: (1) parsimonious modelling of complex systems; (2) the pedagogical utility of experimental learning (simulations) as opposed to say lectures; and (3) economic game theory. In the first concept, parsimonious modelling, simulations are used to simplify a dynamic situation or complex decision-making process down to essential ‘rules’. Of course over simplification may lead to errors of specification, however, a simulation is an attempt to ‘model’ real world dynamics or decision-making processes. Indeed, surveys of US business programmes reveal that simulations are a common component of business education programmes to teach students how enterprises or markets work, and the decision-making processes that affect them (Faria, 1987).

Urban planning, land markets and municipal administration form a complex interaction that Russians and others engaged in land privation must learn in order to implement effective land privatization policy. Many, if not most, of the officials charged with the task of land privation have not had the benefit of an extensive education in land markets, macroeconomics, urban political science or other disciplines required for study of the urban system. Thus, a simulation simplifying those complex interactions and illuminating essential rules or principles of land development would be very appropriate for them.

The use of simulation as a teaching device raises a second concept of some import: the pedagogical utility of experimental learning (simulations) as opposed to other methods such as lectures. Previous pedagogical research identifies three important parts to learning: (1) cognition; (2) behaviour; and (3) personal attitude (Burns et al., 1990). Cognitive learning refers to the learning of facts or the recollection of information. Behavioral learning occurs when individual behaviour is modified. Attitude learning is similar to behavioural learning in that new attitudes are learned, internalized, and used. A review of numerous studies focusing on the subject of experiential learning versus traditional teaching techniques indicates that there is no significant difference between the two. However, when it comes to cognitive learning, experiential learning (simulation) appears to be a superior method. (Gosenpud, 1990).

Teaching land market concepts to Russians, and others who grew up in communist cultures, has two related problems. The first is a poor understanding
of market concepts. The second is a lack of terminology within the language itself for important private sector actors and concepts. For example, there is no Russian word for ‘businessman’ nor the activities associated with the concept. Therefore Russians use the English phonetic ‘businessman’ to express the role of people engaged in commercial transactions. In addition, decades of communist propaganda and education have come to associate extremely negative connotations with this term, likening it to such words as ‘shyster’, ‘hustler’, or even ‘carpet bagger’. Thus, the activity of gaming can adjudicate misconceptions or maligned perceptions of business terminology, making teaching more effective and considerably easier.

In the words of Sophocles: “One must learn by doing the thing, for though you think you know it—you have no certainty, until you try”. Gaming certainly accommodates the thrust of this age-old statement (400 BC) for as an act of ‘doing’ it often transcends the benefits of ‘learning’ derived from lectures or related classroom teaching techniques. Given the complexity of land market concepts and the critical need to understand terminology associated with them, simulation exercises such as CLUG hold an enormous pedagogical potential for Russian officials working in the field. As Wolfe (1995, p. 270) states:

Although the most effective management development techniques are of the interactive variety that obtain attitude and behavior change by encouraging involvement, accountability, initiative, and risk taking and emphasizing problem solving and an action orientation, these qualities were discouraged during the communist period, thereby justifying the use of passive, centrally-controlled lecture techniques.

Economic game theory is a third significant concept incorporated in the Community Land Use Game. Economic game theory emphasizes the unique dynamics of multi-lateral decision making that often elude traditional econometric modelling techniques (Maskin, 1999). Western urban policy making commonly employs participatory decision-making structures such as democratically elected bodies to represent the public and hold hearings on civic issues. In the former Soviet Union cities were centrally planned, and governed by a very strong national executive branch that was further controlled by the communist party. Even though there were ostensibly elected city soviets (councils), in reality the city mayor always took instructions and orders from a Governor who simply relayed commands from the President. The municipal soviets were simply ‘rubber stamp’ bodies. Therefore, citizen participation and pluralist decision making has been slow to advance in Russian urban affairs. It was simply not done. In regard to previous attempts of the Supreme Soviet and/or Gosplan to utilize gaming in Russian urban development Rybalskiy (1995) states the following:

It was clear that these games propagated and reflected, in both nuance and detail, the principles of a planned economy. In accordance with these principles, all major economic questions were decided from above. Moscow gave out all the assignments and allocations, and the nation’s factories had to obediently fulfill these assignments. Accordingly, these games dealt with the tactical problems of logistics and production scheduling rather than creative entrepreneurship. (p. 251)

Gaming simulations require pluralist decision making which in turn demonstrates the importance of community welfare and benefits as they relate to
strategies for accruing private wealth. Besides the general beneficial attribute of having officials make pluralist (democratic) decisions, the exercise can readily demonstrate the possibility of different outcomes emerging as economic game theory would postulate.

In summary, using a gaming simulation could invoke additional beneficial concepts that may improve urban planning, policy making, and land privatization in Russia, or for that matter, any former communist urban government.

Community Land Use Game Simulation

The Community Land Use Game (CLUG) developed by Allen Feldt at the University of Michigan is well suited for elucidating many inherent complexities of the land privatization process that is now underway in many Eastern European nations as well as Russia and the NIS (Dandekar & Feldt, 1994). It is played on a board, and uses tangible gaming materials, e.g. cash; bid forms; representational pieces such as different shapes and colours of blocks of wood that represent different land uses: low and high density residential, low and high density commercial, small and large industrial, a utility plant, and transport terminal; and strips of 1/8 inch wide tape to represent utility line extensions. As shown in Figure 1, the CLUG game board is overlaid with a grid and has three major community facilities located upon it by the game operator—the major highway network, a set of transport terminals, and a central utility plant.

It is relatively easy to learn, is highly interactive, and fully represents the process of urban land development, i.e. the interrelationships between changes in land use, transport, and utility extensions, and the need for public or community support (coalition formation) for securing funding for maintenance and capital improvements. (Feldt, 1966). After several rounds of play, the exercise presents a definite ‘gaming image’, yet covers the essential steps of land development quite thoroughly.

In playing the game participants develop lots served with utilities from the central plant. They make journeys to work or the shops or get goods to market by utilizing the transport system, which is established in the game parameters as both the major highway network (heavy 1/4 inch lines connected to terminals) or secondary routes (the remaining grid lines). The transport terminals serve as points of direct access to export markets, and, thus, have important location benefits for players acquiring land near them. Private land is identified directly by the set of grid coordinates along the perimeter of the game board. Either teams or individuals can play as individual land developers as well as citizens in the model or game. Most importantly, it should be noted that CLUG does not require computer assistance or other mechanical technology for its operation, making it an extremely portable and dependable simulation exercise.

Although the Community Land Use Game is one of the oldest urban simulation models, it has many advantages as a teaching exercise that newer computer based models do not. The first is that it collapses and/or reduces the essential dynamics of urban relationships into steps of play that are executed directly by the game participants, i.e., there is no sub-routine in a piece of software that comes into play to demonstrate the consequences of particular choices as might be found in more elaborate simulation models, e.g. Simcity 2000. Players’ actions transfer directly to each other. There are other urban gaming simulations such as Metropolis, however, compared to Metropolis, CLUG
Figure 1. Example of part of a Community Land Use Game board and pieces.

is considerably less complex in operation and focuses directly on the operation of land markets.

Second, participants must confront and address each other directly to effect community changes as opposed to taking unilateral action allowed in most computer simulations. Thus, urban growth and change can only occur through ‘face-to-face’ bargaining, coalition formation and perceptions of joint gain, which is also the case in the ‘real world’ of urban development. A third advantage is that CLUG focuses directly on land as an independent element in urban development which is essentially what the land privatization issue in Russia and the NIS is all about.

Applying CLUG for Land Privatization in Russia

Gaming has long been recognized as an important heuristic device to clarify the process, stakes, and roles of actors in city planning. Most often it has been used in graduate city planning programmes in North America and Western Europe to supplement planning studio work that focuses on the development of a compre-
hensive plan. In addition, it has also been a helpful device for public planning agencies endeavouring to train new personnel about the intricacies of community decision making (Duke, 1981). The gaming experience emphasizes the dynamic aspects of city development that are often downplayed or simply ignored in the general literature of urban development, i.e. the notion that urban systems are continually changing and evolving while the city plan is being either formulated or up-dated, or that many of the actors in the process have different values or tend to work towards different goals (Duke, 1981).

We used CLUG to teach Russian public policy experts about urban land markets, and what follows is a step-by-step description of our observations and assessments of the use of CLUG to teach land market dynamics to Russians. For those unfamiliar with the Community Land Use Game, it is played in iterations that go through the following steps of play:

1. Assess real property
2. Receive income for industries
3. Pay employed residents
4. Pay stores and offices
5. Pay transportation costs
6. Pay taxes
7. Set tax rate
8. Buy and sell land
9. Extend utilities (infrastructure)
10. Throw dice on buildings (executed every 5th round)
11. Construct, move, or remove buildings
12. Designate places of employment
13. Set prices in stores and offices
14. Sign trade agreements
15. Receive income for cash in hand

At the start of play the exercise begins in step 8, Buy and sell land. At the completion of step 15 it continues right on through beginning the next round in Step 1.

The Community Land Use Game can be played through any number of iterations, but usually five or six are sufficient to illustrate the critical points of private land development and its ties and relationships to the public sector. This amount of play could be accomplished in five or six hours. Other than calculating an individual’s or team’s worth or cash flow at the end of play, there are no winners or losers in the exercise. The model simply serves to demonstrate how a community develops given the parameters established and the particular decisions made by the players. Evaluation of play can be determined by such criteria as the efficiency of land use patterns, levels of revenue achieved to defray public costs, and perhaps evidence of manifest public-regarding (community) attitudes, e.g. willingness of players to accept less profit to maintain public open space, achievement of balanced growth, and/or the extent of cooperative actions (trade and employment contracts) that could reflect an increasing spirit of community (Anderson, 1991).

There are several critical phases of land privatization work where CLUG would be helpful for understanding the ways in which the land development process relates to a market economy. The first would be the clarification of a free land market itself (Campbell, 1994). In the very beginning of play (step 8 of round
one) players are instructed to submit a sealed bid on a single piece of land. The only data available to them for determining a bid price are the location of the public facilities on the board. Thus, the prices offered are reflected in the potential profit or return that the players feel particular properties might generate, and the amount of money they are willing to spend to secure them. In the run of CLUG at the Institute of USA and Canada Studies the Russian players were utterly baffled at the initiation of play because there were no guidelines for setting prices for land. It was only after each had spent considerable time examining the board parameters (and submitting wildly divergent bids) that they understood the importance of this part of the simulation.

As soon as the initial part of step 8 was completed (opening the sealed bids to establish the land market), the game participants were informed of the prices offered and given the opportunity to bid competitively on additional pieces of land. At this point a market paradigm began to materialize. Once they were aware of market prices (amounts that competitive bidders were willing to pay) individual teams presented bids for additional pieces of property. In completing step 8 successful bidders are revealed and their newly acquired lots marked on the board; however, the amounts of their bids are not revealed. The only information the unsuccessful bidders have is the knowledge that their bids were too low.

Municipal officials and administrators in Russia do not always favourably perceive the benefits of private land holdings. In fact, ‘private property’ is still a term which is anathema to many of them (Smith, 1990; Rumyantsev, 1997). Thus, steps 1, 6, 7 and 9 are particularly useful in explaining the way in which private land holdings are key to successful urban land development. Step 1, Assess real property, introduces several important concepts. The first is that private property is evaluated (assessed) by a municipal agency relative to its location and surrounding development irrespective of political influence or what its owners feel it to be worth. The second point is that once players understand the concept and the purpose for determining the assessed value, they see how it is utilized in levying property taxes (collected in step 6). Finally, the assessment process demonstrates the notion of equity and fair treatment since the evaluation criteria is applied uniformly across the board. Under the Soviet system political patronage, discrimination, and selective enforcement of regulations often substituted for equal treatment in the dispensing of government largess to individual households (Smith, 1990).

Step 6 requires the game participants to pay taxes. For most Russians the idea of paying money for the receipt of public services is new (Rumyantsev, 1997). Until the dissolution of the Soviet Union the extent and levels of municipal services were determined, administered, and funded through GOSPLAN. Thus, local initiatives were never required nor applicable for the provision or payment of local services (Decker, 1997). In CLUG the amount of property tax owed is determined by multiplying the total assessed property value of individual or team’s holdings by the tax rate. In the first round this rate is already set within the game parameters, but in the following ones, players are asked to examine the fiscal needs of the community (costs of construction and maintenance of utilities) themselves and to set a tax rate for the following round of play that will meet this financial need. This task is addressed in step 7 (Set tax rate). Illustration of the way in which payment for local services is tied directly to the collection of local money (i.e. public funds) is critical for the players to understand because
at this juncture they immediately realize that they have a second role in the simulation, which is that of citizen or member of the community. In Russia and the NIS the idea that individual local citizens could discuss, debate, and eventually vote on matters of public revenue is entirely new.

In Step 9 (Extend utilities) the players are asked to decide among themselves where their community (city) should extend utility lines. In the simulation utility lines represent public services. A requirement of the game is that only properties having access to utilities (public services) can be developed. In executing this step the two roles of land developer and citizen come together. The game board reveals not only the established game parameters, e.g. the location of the utility plant, major highway system, and transportation terminals, but also the location of privately held land. Thus, players are constrained to effect development strategies which would further their own interests (profits) while simultaneously acting in a way that they feel would be in the best interests of the public or their community. The understanding of this concept is crucial in land privatization work, for it clearly demonstrates how land development is controlled through public decisions at the local level. In the capitalist system the quest for profit always has to operate within a framework of public oversight and regulation. In the case of the CLUG exercise decisions regarding the location and amount of services is adjudicated through public debate, bargaining, and coalition building. Thus, a majority of the players (who in this step now represent the local citizens) have to agree where services should be extended. In the play of the game extensions are usually made into those areas of the community (the board) where several of the players have land holdings (and therefore would jointly profit from their extension) or into areas where there are no private holdings, but where the players (as public stewards) feel the city should develop. In the simulation model each grid length of utility (side of one square) costs $2000 to construct, and $1000 to maintain. Costs for construction and maintenance are of course borne by the community or city through its tax base.

The activities in step 11, construction, demolition, or moving of buildings, is fairly straightforward and representative of the work of entrepreneurs or private developers. In the execution of this step players individual development decisions are tempered by the cost of particular land use activities, the potential for profit (defined in the game rules), special requirements for establishing particular activities, and related costs associated with various building types identified in the game parameters—transportation, taxes, payments to employed residents, and so forth. In this step play proceeds in turn from one individual or team to the next. Because play proceeds in this manner another element of gaming is introduced since the decisions of preceding players can affect those of players that follow (Friedman, 1991). This introduces the notion of urban dynamics that occurs once development decisions take effect, i.e. buildings or land use activities are constructed. Once this happens, the city is then changed to the extent that new opportunities might arise while others might be precluded. Thus, this part of the exercise well replicates the economic situation in many Russian cities where venture capital is now changing the urban environment at a dizzying pace.

In step 12 players that have developed housing are asked to decide where they would like to have their households employed. Opportunities for employment occur in blocks where industries, offices, and commercial activities have been developed. All employed residents are paid the same regardless of where they
are employed. However, journeys to work can vary considerably so location becomes a key variable in making these decisions, as Location Theory’s notion of the least-cost site would suggest. As new (land extensive) employment centres arise on the periphery of Russian metropolitan areas, replacing central city ‘smoke stack’ industries’ location, benefits for potential employees will become increasingly important making this aspect of CLUG extremely relevant. In working out their agreements with potential employers, players are free to choose any ‘where to work’ arrangements they wish.

The activities in step 13 are highly reflective of economic circumstances in all Russian cities, namely the workings of a market economy through intra-regional competition. In the simulation those players that have chosen to build stores or offices are asked to establish prices for their goods and services. Guidelines (maximum charges) are given in the game parameters; however, the owners of these activities are free to set lower prices to compete for potential business. This is often done when players note possible location advantages they might have should they lower their prices. Once prices are set players are then asked to sign trade agreements (step 14) that will take effect in the next round of play. Market competition is only regulated in that owners of commercial facilities must charge the same prices to all players.

Step 15, Receive income, replicates the notion of a ‘wait and see’ philosophy regarding investment decisions. Should players decide against investing all of their cash in new development they could collect interest on the amount they have reserved.

At the beginning of the next round of play, step 1, the game operator calculates the assessed value for each of the player’s or team holdings. As noted earlier this step replicates the assessment process for determining taxes to be paid in step 6. In step 2, Receive income, individuals or teams, which have chosen to build industries, collect income for goods produced. In step 3, Pay employed residents, individuals or teams, which have constructed housing, receive income for their employed households. In step 4, Pay stores and offices, individuals or teams which have constructed commercial facilities receive income from those individuals or teams that trade with them in accordance with their signed agreements.

Step 5, Pay transportation, illustrates the notion of location benefits associated with various types of land use activities. Transportation costs are determined through a system of associated weights and distances, which are pre-calculated in the CLUG parameters. In Russia as in many of the newly independent states public infrastructure is largely underdeveloped impeding intra-urban transport as well as isolating most production centres from potential market areas. Since transport costs are borne by entrepreneurs in the simulation, players work towards developing land use configurations that reduce frictions of space or minimize transport costs. Thus they focus on development strategies that utilize as much of the major highway network as possible and try to locate industrial properties in close proximity to transportation terminals. Again, this is what Location Theory suggests what would happen.

Concluding Remarks

To make the switch from publicly owned and controlled land to that of private ownership will be no small task in either Russia or the NIS. Not only will it take
substantial blocks of time, training and capital to accomplish, but a major effort in public relations to communicate its need and purpose as well. Simulation and gaming exercises have been used in many instances to solve various social problems for nations as well as state and local governments (Duke, 1981; Dandekar & Feldt, 1994). Perhaps more than anything else they provide opportunity for individuals in leadership positions to understand the web of relationships (changes and consequences) linked to their decisions and to formulate strategies to achieve goals through legitimate means. The CLUG model approximates the workings of land markets very closely and demonstrates how private actions and public control operate within the land development/planning process or arena. The resultant patterns of land use, public costs and revenues, and potential for community development all become manifest in the city that has been formed. Unlike the parlour game of *Monopoly* that is a zero-sum gaming model, there are no winners or losers in CLUG. Some land use configurations might proffer better planning principles than others or reflect sounder public investment. But, beyond that there is little value in making normative judgements about the city. What is important is to note the efficacy of players strategies to achieve personal ends (private wealth) in relation to important joint gains (community benefits) for the city at large, and to understand how they have been accomplished through legitimate means.

In general, play was much more ragged in the run of the Community Land Use Game at the Institute of USA and Canada Studies than it had been in American universities. The Russian players had difficulty effecting consistent land development strategies, and often did not perceive the benefits of planned public actions (utility extensions) as generating community-shared benefits. Americans and Western Europeans usually tend to have lengthier discussions regarding the community consequences of utility extensions. Differences in land investments were also noticeable. In the earlier rounds the Russian players purchased large chunks of land that proved to be non-developable as there were no proximate owners who would agree on required utility extensions to serve them. In most CLUG runs in the US players anticipate this problem fairly early in the exercise. For the most part the CLUG run in Moscow served more to show the way in which private land investment related to the operations of local municipal governments than it did to demonstrate the practice or efficacy of city planning. But overall many critical points of urban development (actions and consequences) in a market economy were well understood at the end of the run, which indeed underscores the importance of gaming exercises as pedagogical tools.

The authors see the need for further research in using gaming simulations for broader issues of urban development such as economic development or the provision of social welfare such as public health or urban sustainable development. In addition, gaming simulations for the NIS need to illuminate liberal democratic processes and constraints such as pluralist participation, coalitions, conflict resolution, and urban political relationships to land speculators: urban regimes.

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