LAND MARKETS IN A CHANGING WORLD
– OPPORTUNITIES FOR SURVEYORS

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ABSTRACT
Land surveyors, land registries and land information systems are primarily concerned with building and maintaining a land administration infrastructure. This includes cadastral surveys to identify and subdivide land, land registry systems to support simple land trading (buying, selling, mortgaging and leasing land) and land information systems to facilitate access to the relevant information.

We assume that a primary task of this infrastructure is to support the operation of an efficient and effective land market. But what is a land market? Since our land administration systems were invented, land commodities and trading patterns have undergone substantial changes: they have become complex, corporatised and international. Are our current land administration systems designed to support a modern land market which trades in complex commodities such as mortgage backed certificates, water rights, land information, time shares, unit and property trusts, financial instruments, insurance products, options, corporate development instruments and vertical villages? Modern land markets involve a complex and dynamic range of activities, processes and opportunities. They are continually evolving, primarily in response to economic energy and sustainable development objectives. They are also being facilitated by information and communications technologies.

This paper argues that modern land markets offer many business opportunities for land surveyors. It is important that cadastral survey practices, land registries and land information systems keep pace with, and preferably lead, these land market developments. It discusses the evolution of land administration systems and the land markets they support. It introduces the vision for a modern land administration system capable of supporting not only simple land trading but also trading in complex commodities. It describes the challenges facing surveyors if they are to think laterally, capitalise on their spatial and measurement skills, and apply them to the opportunities presented by the growth of complex land markets in a modern economy.

INTRODUCTION

Land surveyors are experts in designing, building and managing the spatial component of our land administration systems (LAS). They are experienced in creating, describing and defining land parcels and associated rights and restrictions. Historically, the primary reason that society requires these skills is to support an efficient and effective land market in which the rights in land are traded to promote economic development. By the middle nineteenth century, trading involved buying, selling, mortgaging and leasing of land. By the mid twentieth century, we as professionals, along with land administration officials and associated legal professionals, assumed that we understood land markets and that we had developed appropriate professional skills to serve the needs of those markets.

Unfortunately we were involved in supporting the land trading activities, not designing them. From our viewpoint, there is little documentation on how to design and build a land market or even on the development and growth of land markets.

It is ironic that surveyors pride themselves on working from the “whole to the part”, yet in the case of land markets there is little effort given to designing land markets and then designing the land administration system and supporting spatial skills to support them. Historically, we went the other way round: the market required commodified land parcels and we defined them.

Our current cadastral skills are appropriate for simple land markets where the focus is traditional land development and simple land trading; however land markets evolved
dramatically in the last 50 years and became very complex, with the major wealth creation mechanisms focused on the trading of complex commodities. As with simple commodities such as land parcels, all commodities require quantification and precise definition (de Soto, 2000). While land surveyors have not embraced the administration of complex commodities to a significant degree (although I wish to acknowledge and applaud those that have), these modern complex land markets offer many opportunities for surveyors if they are prepared to think laterally and capitalise on their traditional measurement and land management skills.

We want to acknowledge and applaud the ingenuity and creativeness of Malaysian in developing Qualified Titles (QTs) and the land administration systems supporting them. QTs should be regarded as one of the international success stories in developing appropriate land administration systems in an emerging economy. While they were not an ideal solution to the demands of a rapidly growing economy after Malaysia’s independence, QTs have been very successful in allowing a wide cross section of Malaysian society to have access to property rights and to trade those rights in an active land market.

While QTs have been successful in promoting access to land, security of tenure and an active land market, they do have significant limitations due to the difficulties in showing them spatially as QTs on the standard cadastral sheets, along with Final Titles and all government or state lands. We believe the creation of a complete cadastral map is one of the major challenges facing Malaysia. Simply without a complete cadastre, sustainable development objectives are difficult to achieve. On the other hand QTs are an example of thinking laterally to leverage off an existing land administration system to create a new product. As such they have some of the attributes of complex commodities.

This paper argues that the growth of markets in complex commodities is a logical evolution of our people to land relationship and the evolving cadastral and land administration systems. The paper concludes that the changing people to land relationships, the need to pursue sustainable development and the increasing need to administer complex commodities offer new opportunities for land surveyors.

**EVOLUTION OF LAND ADMINISTRATION SYSTEMS**

The cadastral concept shown in Figure 1 (FIG, 1995) is simple and clearly shows the textual and spatial components, which are the focus of land surveyors and land registry officials. However while the cadastral concept is simple, implementation is difficult and complex. While this model is still a useful depiction of a cadastre, it does not show the evolving and complex rights, restrictions and responsibilities that a modern society demands in order to deliver sustainable development objectives.
To understand this evolution it is worth considering the changing people to land relationship over the centuries. Even though Figure 2 depicts a Western example of this evolving relationship, a similar evolution can be plotted for all societies. This diagram highlights the evolution from feudal tenures, to individual ownership, the growth of land markets driven by the Industrial Revolution, the impact of a greater consciousness about managing land with land use planning being a key outcome, and in recent times the environmental dimension and more recently the social dimension in land (Ting and Williamson, 1999a). Historically an economic paradigm drove land markets however this has now been significantly tempered by an environmental and more recently a social paradigm. Simply the people to land relationship in any society is not stable but is continually evolving.

In turn most civilisations developed a land administration response to this evolving people to land relationship. Figure 3 depicts the evolution of these land administration responses over the last 300 years or so in a western context. The original focus on land taxation expanded to include support for land markets, then land use planning and over the last

FIGURE 2  Evolution of people to land relationship
(Ting and Williamson, 1999a)
decade or so has expanded to provide a multi-purpose role to support sustainable development objectives (Ting and Williamson, 1999b).

Current land administration systems were developed since the middle 19th century to define simple land commodities and to support simple trading patterns (buying, selling, leasing and mortgaging), particularly by providing a remarkably secure parcel titling system, an easy and relatively cheap conveyancing system, and reliable parcel definition through attainable surveying standards.

Arguably, Australia led the world in adapting their LAS to support land parcel marketing. Major innovations of the Torrens system of land registration and strata titles are copied in many other countries. However, because of the pace of change, the capacity of LAS to meet market needs has reduced. The land market of, say, 1940 is unrecognisable in today's modern market. After WW II new trading opportunities and new products were invented. Vertical villages, time shares, mortgage backed certificates used in the secondary mortgage market, insurance based products (including deposit bonds), land information, property and unit trusts and many more commodities now offer investment and participation opportunities to millions either directly or through investment or superannuation schemes. The controls and restrictions over land have become multi-purpose, and aim at ensuring safety standards, durable building structures, adequate service provision, business standards, social and land use planning, and sustainable development. The replication of land related systems in resource and water contexts is demanding new flexibilities in our approaches to administration (Wallace and Williamson, 2005).

Australian LAS that service parcel based trading and related market activities were overhauled in the 30 years commencing in 1970 to:

- comply with National Competition Policy
- reorganise the 19th century legislative structures establishing single office - single function administrations (Surveyor General, Registrar General, Valuer General) with modern management and performance enhanced organisational structures
- provide opportunities for more competitive professional services and private sector involvement, and
- capitalize on opportunities available from digital and web technologies.

The combination of new management styles, computerization of activities, creation of databanks containing a wealth of land information, and improved interoperability of valuation, planning, address, spatial and registration information allowed much more flexibility. However, Australian LAS remain creatures of their history of state and territory formation. They do not service national level trading and are especially inept in servicing trading in new commodities. The result is that modern societies, which are responding to the needs of sustainable development, are now required to administer a complex system of overlapping rights, restrictions and responsibilities relating to land.

Modern societies are also now

![FIGURE 5 Land Administration Arrangements](Enemark, Williamson and Wallace, 2005)

![FIGURE 4 Formalisation of tenures](Dalrymple, Wallace and Williamson, 2004)
realising that there are many rights, restrictions and responsibilities relating to land, which exist but have not been formalised by governments for various policy or political reasons. This does not mean these rights do not exist but that they simply have not been formalized in recognizable land administration frameworks. A good example is the recognition of indigenous aboriginal rights in land in Australia in the 1980s. Prior to the Mabo and Wik decisions and the resulting legislation in Australia, indigenous rights did not formally exist. Their existence was informal but strongly evidenced by song lines, cultural norms and other indigenous systems, a situation still familiar in the developing world where indigenous titles await more formal construction.

The process of formalising tenure and rights, restrictions and responsibilities in land is depicted in Figure 4. An understanding of both formal and informal rights is important as we move to develop land administration systems that are sensitive to sustainable development objectives. Additionally, we need to recognize that change management processes and adaptation of formal systems always lag behind reality: all mature systems will simultaneously sustain both informal and highly formalized rights because the systems are not yet ready for emerging interests. Frequently, some rights will be deliberately held in informal systems: one of the largest and most significant management tools in Australia, the trust, remains beyond the land administration infrastructure and involves utilization of paperwork generated by lawyers and accountants and held in their filing drawers.

Other rights involve minimal formalization for different reasons. Residential leases, too common and too short term to warrant much administrative action, are traditionally organized outside LAS. That these land rent-based distribution systems remain potentially within the purview of modern LAS policy makers and administrators is illustrated by Australia’s development of a geo-referenced national address file (GNAF). Indeed the development of spatial, as distinct from survey, information provides the timeliest reminder that information about land is potentially one of the most remarkable commodities in the modern land market. Certainly this commodity of information is of core interest to land surveyors.

An integrated model for a modern land administration system (Enemark et al., 2005) that draws on the above principles is shown in Figure 5. Even this can go further. Modern land markets have evolved from systems for simple land trading to trading complex commodities such as mortgage backed certificates, water rights and carbon credits. Our understanding of the evolution of land markets is limited but it must be developed if surveyors are going to maximise the potential of trading in complex commodities by developing appropriate land administration systems (Wallace and Williamson, 2004). Figure 6 shows the various stages in the
evolution of land markets from simple land trading to markets in complex commodities. The growth of a complex commodities market showing examples of complex commodities is presented diagrammatically in Figure 7.

BUSINESS OPPORTUNITIES FOR SURVEYORS

This brief review of the evolution of land administration systems and land markets shows that the traditional concept of cadastral parcels representing the built environmental landscape is being replaced by a complex arrangement overlapping tenures reflecting a wide range of rights, restrictions and responsibilities and that a new range of complex commodities building on this trend have emerged. To a large extent these developments are driven by the desire of societies to better meet sustainable development objectives. There is no reason to believe that this trend will not continue as all societies better appreciate the needs to manage the environment for future generations and deliver stable tenure and equity in land distribution.

Many surveyors are highly skilled in accommodating environmental considerations into land developments. But how many surveyors have moved outside the comfort zone of focusing on the boundaries of individual cadastral parcels and into the broader pictures created by spatial information, flexible tenures in crowded urban areas, and utility asset tracking?

While future markets of complex commodities will continue to rely on the underlying cadastre and land administration system, how many surveyors will embrace the definition and management of complex commodities that do not rely on the traditional cadastral boundaries and that require merging of value, building purpose, land use and personal owner information? How many surveyors are capable of seeing the international context of land information, and its importance to their national government in presentation of its investment face to the world?

CONCLUSION

In this paper we have attempted to show that the people to land relationship is dynamic with the result that the land administration response to managing this relationship is also dynamic and continually evolving. A central objective of the resulting land administration systems is to serve efficient and effective land markets. Because of sustainable development and technology drivers, modern land markets now trade in complex commodities, however our current land administration systems and the majority of the skills of land surveyors are focused on the more traditional processes supporting simple land trading. We believe the growth in complex commodities offers many opportunities for surveyors if they are prepared to think laterally and more strategically.
We don’t have all the answers or a road map for surveyors to play a greater role in the management of complex commodities markets, although we do believe it offers many opportunities and is a logical extension of their traditional measurement and land management skills.

The challenge is not only to surveyors but also land registry, land administration and land information officials to design and build modern land administration systems that will better support the creation, administration and trading of complex commodities. Unfortunately without these systems modern economies will have difficulty meeting sustainable development objectives and achieving their economic potential.

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