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Examining the potential for the development of computerised mass appraisal in Thailand

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Abstract: This paper examines the potential for the development of an expert system to value residential properties in Thailand. With some 27 million land titles and less than 100 professionally qualified valuers in the valuation authority, the task of valuing property for taxation purposes in Thailand is a major problem. This problem has long been recognized and as a part of the Thailand land titling project measures have been underway since 1975 to address the problem. Over the last quarter of a century, significant developments have been made in Thailand while at the same time there have been major advances in mass appraisal around the world based mainly on greater computerisation. This paper examines the scope of the problem in Thailand and the history of the development of the valuation authority in Thailand. The paper also examines the current situation in terms of the level and volumes of professional qualified personnel, access to property data and some of the methodologies that have been proposed to automate the mass appraisal process. Research into different methodologies for mass appraisal in Thailand is critically examined and some suggestions for future development are proposed.

Introduction:

Like most countries, Thailand has used real property as a tax base for many decades. Prior to 1932 there were a range of local taxes on market buildings, market stalls, boats and rafts. The House and Land Tax Act (1932) was the first broad based property tax legislation and involved the tax being levied against the owners of land and housing. The tax was originally only levied in Bangkok, but by 1956 it was extended to all municipalities. The House and Land Tax was an annual tax with the amount being assessed every four years based on a return from the owner return and a further estimate from an assessor. The tax was based on 12.5% of the annual rental where the rental was the actual or estimated rent based on a comparison to similar properties in the same area but also considered general rent levels. The tax assessor could revise the rental if it was considered to be too low or understated (Lewchalermwong, 1971). Lewchalermwong (1971) suggests that the system was somewhat defeated by a change to the practice of rentals. Large amounts of key money were generally accepted with low weekly or monthly rentals. As this practice was very widespread, the actual and comparable rentals would all appear to be low. Also since the tax assessors were lowly paid there was widespread corruption and the tax base was highly arbitrary and inequitable. The tax assessors were (logically) against any review or revision of the system.

The land development tax (also called a local development tax and applied only to vacant land) was based on the average ("medium") price of land and applied at regressive tax rates. It was calculated from the evidence of three pieces of land sold within a year in a tambol, a Tambol being the tax unit. If they could not find three pieces of evidence then they could take adjoining Tambol's or use some other averages.

In addition to these taxes there are transfer fees and stamp duties. The transferring fee is 2% of the CVA's assessed value and stamp duty is based on .5% of the value. Until recently they were based on the higher of the assessed price and declared sale price that encouraged people to under declare the price.

A business tax of 3.3% is payable annually based on the higher of the assessed price and declared sale price. This tax is waived for land that is held for no profit.

By the early 1970's people were beginning to question the system. In a paper on tax reform, Lewchalermwong (1971) recommended that

> *"the construction cost of houses and buildings be made the tax base for the house and land tax. The construction cost can be adjusted to give allowable deductions for depreciation of houses and buildings according to the number of years they will last. The base of the house and land tax as suggested would also include the land which is used in conjunction with houses and buildings".*

They went on to suggest that if annual rental was still to be used then this could be derived by dividing the total value of the buildings by the prevalent interest rate, (presumably a rate for government bonds or similar) since this must reflect a reasonable return otherwise investors would invest elsewhere! Such suggestions demonstrate a lack of basic understanding of property markets and valuation.

Some reform did occur in Thailand in the 1980's. This was largely due to a major project incorporating land titling and valuation funded through the Royal Thai Government, the World Bank and other agencies. Many of the changes to valuation were based in reports from International Monetary Funds advisors. Major structural changes occurred in the valuation industry and the profession, which have led to its current position. The development through the 1980's will be examined in order to understand why valuation in Thailand is where it is today. Parts of this development place major impediments on the development of modern valuation systems in Thailand.

The scope of the problem in Thailand

Thailand is a country of some 514,000 square kilometres with an estimated population of 61,661,701 people. (Thailand Department of Legislation Administration, Ministry of Interior at the end of 1999). The majority of these people live in rural areas. The Central Valuation Authority (CVA) is the rating authority in Thailand. They are required to value each property every four years. There is a complex arrangement of titles. Table 1 indicates the numbers of titles for land parcels in Thailand. In addition to these, there were a further 381,109 condominium titles. The rating authority has over 27 million parcels to value, or nearly 7 million per annum in order to meet the requirement of a valuation every four years. Of these about 2 million parcels are in the city of Bangkok. Large numbers of valuations or appraisals are also required for other purposes such as to support finance and for sale and purchase.

Table 1 - Number and area of land parcels in Thailand by parcel type - September 1999

Type	**Title Deeds (#)**	Rai	Ngan	Sq Wah	**Hectares**
Chanode[1]	16,748,352	64,340,016	1	62	10,294,402.62
Certificate of Utilization NS.3 K[2]	7,841,932	42,678,523	2	21	6,828,563.77
Certificate of Utilization NS.3[3]	2,009,812	17,932,861	3	29	2,869,257.89
Chanode Trachong[4]	369,338	3,781,886	0	39	605,101.78
Total	**26,969,434**	128,733,287	3	51	**20,597,326.06**

1 Sq Wah=4 sq metres. 100 sq wah = I Ngan. 4 Ngan =1 Rai. 1 Rai = 1600 sq metres or .16 hectares.

Source Department of Lands Thailand

[1] Chanode is issued by survey. If the parcel is listed on the Department of lands sub-district base map then this can issue. If not, DOL will issue NS 3 instead. Owners have to present supporting documents for issuing Chanode such as certificate of owner (SK1), pre-emptive certificates (NS 2), certificates of utilization (NS 3, NS 3 k), old land title deed (Rama V).

[2] NS 3K is issues under the Land Act 1972, based on Department of lands base maps and aerial photography. Because of inefficient links between the base maps it is possible for some titles to be double issued.

[3] NS 3 was issued under The Land Act 1954 to the owners who use that land to earn a living. Before issue the owner must have a Certificate of Ownership (SK 1) It is based on aerial photography.

[4] Chanode Trachong(old land title deed) was issued under the Land Act 1906. They were issues in only in 5 provinces of Thailand, Phisanuloke, Pichit, Utaradit, Sukhothai, and some parts of Nakornsawan. Because there was no proper survey and only limited base maps were used it is possible that some parcels are fully or partly double issued.

One of the major problems that face Thailand in the development of an effective and efficient valuation system is the lack of suitably qualified and trained staff. In its last Strategic Plan the Central Valuation Authority (1998) suggested that it would need as many as 4,800 staff to complete all the necessary valuations by a manual system. They had at that stage roughly 200 staff. This is supported by a recent report by the RICS (1998) who stated that

> *"The Central Valuation Authority (CVA) employs over 200 staff, five with degrees and 49 with diplomas in valuation, to handle a task comparable to that of the national valuation service in the UK, which employs about 5,000 staff, including 2,000 qualified valuers"*

This situation is being remedied to some extent with the launch of a Graduate Diploma in Property Valuation at Thammasat University and a two-year diploma in valuation at the Bangkok Technical College. But the numbers of graduate are still small, and until there is the introduction of larger undergraduate courses, it is unlikely that the numbers of qualified valuers will reach a satisfactory level. The problem is just as large in the private sector where there is a lack of qualified professionals.. Supornchai (1998) studied the ethics and business standard of professional appraisers in Bangkok. He concludes that there were six major problems

1. There is no required education level in the appraisal field, no continuing valuation training courses and no standard of working process.
2. Valuation companies lack coordination and cooperation among the firms, have poor internal control and often accept more jobs than the staff can adequately cope with.
3. There is a serious data problem due to the lack of consist estate databases, and very little genuine market prices.
4. Users of valuation services tend to pressure valuers to complete valuations in an unreasonable period of time and may try to influence the valuation figure. Generally the users have difficulty in interpreting the results.
5. The lack of valuation standards and ethics means that firms have no guidelines for valuation and reporting.
6. The valuation professional societies lack strength, support and effective control of members.

The scope of the problem suggests that a simple solution such as increasing numbers in the profession through education is simply not going to solve any problems in the foreseeable future. The most logical solution is to rapidly develop an effective computerised mass appraisal system that could be used by both the CVA, other public sector utilities and also by the private sector. The CVA themselves (1998) suggest that such a system would have significant flow through effects with an organized data base and appraisal system leading to (pp 24)

> *"Higher standard valuations, less reliance on speculation, more consistency between valuers and a better informed real estate market"*

With the large numbers of valuations and small numbers of professional staff the development of a compterised mass appraisal system would seem to be a viable solution if it is practical at a reasonable price. The experience in other countries such as in the USA, Europe, Australia and the some Asian countries would suggest that such systems for residential properties are both possible and viable. However where such systems have been established in the past, there has normally been a log history of reliable data and sound valuation methodologies. While there is clearly a problem to solve in Thailand, it must first be established if there is a property market that can be modelled given suitable data and if this can be automated through the use of computers. The starting point is to examine the current valuation practices in Thailand that are involved with manual valuations to establish if these can be computerised or automated using existing data. If this is not possible then there needs to be a much broader investigation involving suitable valuation methods and the data that is necessary to support any proposed system.

A critical evaluation of the development of mass appraisal in Thailand

The basis for the valuation method used in the CVA and hence the practice for many private and corporate valuers in Thailand is the methodology suggested by Robertson (1978) as a part of the original IMF recommendations. He concluded (amongst other things) that "Neither capital value or annual value is a satisfactory local property tax in Thailand". Instead he suggested a rigid approach based on depreciated replacement cost where the depreciation was based on a simple straight line accounting approach. His reasons for this seem quite fragile.

He suggests that (op sic)

"There are three basic valuation approaches to arriving at an estimate of capital value, namely, sales comparison, income capitalisation (actual or projected), and cost of replacement.

In Thailand sales information is suspect because of the requirement of the Land Code that a transfer duty be paid on the value of the property. This causes purchasers to under-declare the prices paid. Likewise, the income capitalisation approach, besides calling for considerable expertise and judgement on the part of the valuer because of the many assumptions requiring to be made, is also subject to the hazard that businessmen are reluctant to make public the true state of affairs of their enterprises. If the valuation is to be made for taxation purposes and is high enough to cause the owner to object, and has been made on the basis of sales comparison or income capitalisation, an inexperienced valuer is likely to find himself quite unable to sustain his figures.

This leaves only the replacement value approach, based on the estimated cost to the owner of buying a similar piece of land and placing upon it a similar type of building. In countries where trained valuers are available this replacement cost approach is the one most widely adopted. But in Thailand given the great variability of buildings, officials without specialised valuer training who are required to estimate capital values to be used for taxation purposes (or for any reason where the pocket of the owner is going to be affected) are likely to find themselves quite unable to substantiate their figures when called upon to do so."

Then later in the report, Robertson (1978) goes further to say (op sic)

"The cost of replacement approach already discussed in connection with the capital value is a particularly appropriate one for determining value of improvements – ourrent costs of similar building (op sic) and structures being analysed to arrive at construction costs per unit of area. These unit costs are applied to the items to be valued, with appropriate allowances being made for differences in size and age."

And then he produces the following example of a typical valuation approach to calculate the capital value.

CV=AxCxD+LV

CV = capital Value

A = floor area of building

C= Cost per sq metre

D = depreciation factor (using straight line method)

AxCxD=Replacement value of building

LV = land value.

This traditional method has not been widely used in most countries for many years, because it has a series of fundamental theoretical flaws as well as being difficult to calculate because of the need for accuracy in all of the components. In Thailand these components are applied as follows:

A (floor Area)	The building area is relatively easy to calculate accurately if there are suitably trained people to collect the data. However in a study of buildings in Bangkok, Chanrujipat and Sukpong (1998) found that there was often significant differences between the declared constructions area and that actual area of the buildings. This is a particular problem for large multistory buildings where valuers usually rely upon construction plans to estimate building areas.
C (cost / sq metre)	Is a comparative unit cost (as suggested by Whipple, p474, 1995) and would normally be based on reliable published figures such as Rawlinsons and Cordell's in Australia. Surprisingly given the predominance of the cost approach method in Thailand, there are no such published costs. In fact even established valuation firms seem to rely on very generalized figures based on recently completed constructions. Experienced valuers with reliable published figures will often have significant variations in cost estimates. It is not surprising that in Thailand very large variations occur.
D (depreciation)	The depreciation factor used in the method has no validity in market terms. It is simply not market derived. Using the straightline method the amount of depreciation is a factor of the building age and the buildings life. In recent year studies (such as Dotzour, 1990, quoted in Whipple, 1995) have shown the straight-line method to be both unreliable and non-reflective of market value.
LV (land value)	In traditional valuation theory (Rost and Collins (1993), Whipple (1995) p464, the estimate of the value of the land is normally based on an inferential (sales comparison) approach. Remarkably the method used in Thailand seems to be a reverse cost approach! Block values[5] (land values at a Baht/sq. wah and applied for a block of parcels) are estimated by taking the reverse of the formula above i.e. LV=CV-(AxCxD) and is estimated from improved sales. Thus the land values are also a function of the unreliable cost factors and questionable depreciation method.

[5] Block values for all urban areas in Thailand such as the Bangkok metropolitan area and a suburbs and the regional cities such as Chiengmai and Phuket are based on individual parcel valuations on a per sq wah basis. In other locations land values are estimated at a single rate for the whole block. Each block being 40 metres from the main road. These block values are then published in a book called the Assess Value Book that is published by CVAand made available for use by valuers etc. These are published in the Government Appraisal Value in Bangkok.

It seems odd that in 1978, when the cost approaches were rapidly loosing favour world wide, that they were recommended for wide scale implementation in Thailand, particularly given the lack of suitable data and also in the absence of any research to establish if the approach would actually proved estimates anywhere near market value.

Similarly it is strange that at a time when rating authorities in US (Jensen, 1984) and Australia (Lockwood) were having significant success using established sales data bases and basic computer assisted methods of sales comparison, that such a method was so quickly dismissed on somewhat insubstantial grounds.

Attempts at investigating the potential for mass appraisal in Thailand

There have been some pilot studies to establish if systems based on existing data sets might prove suitable.

The work done in the Booz-Allen Hamilton project is of little assistance. The methodologies used are at best strange and seem to derive as much from conventional accounting rather than reference to market valuation methods. This is supported by Cooper (1999) who concludes that

> *"It is quite clear that none of the Booz-Allen team had any practical background in valuation either in the private sector or in government areas. (page 6)*

And that the project

> *"was designed on the assumption that the overall method of carrying out valuation would be basic and constant irrespective of the type of property involved" (page 6).*

This seems a reasonable conclusion since it is clear the Booz-Allen methodology requires valuers to supply valuation adjustments, the very process that is widely considered to be the most difficult aspect of practical valuation, without any indication of how they were to do this.

The CVA under leadership of Cooper (1999) did a pilot project in the Khet of Lad Praow, one of the Bangkok districts. This project is the most recent in a series of such project but seems to be the most serious attempt to consider issues of data collection, data reliability and data analysis. One of the most important conclusions was that

> *"it is possible to report that the overall results of the project lend considerable weight to the proposition that computer assisted valuation is a viable methodology for use, at least in urban areas of Thailand, in particular, within the Bangkok Metropolitan area." (Page 14)*

Cooper (1999) also highlighted significant problems with the data. In particular he was critical of the practice in Thailand of using asking prices rather than achieved prices as evidence if value. This practice was widespread because of the difficulty of using declared prices[6]. Cooper concludes that some of these problems would be overcome by the averaging effect of the modeling (because some would over declare and some would under declare) but that there were other significant problems where multiple parcels ere involved in a sale. While Cooper's work is very worthwhile there would appear to be some methodological issues that could be debated. The use of a simple additive model (that uses simple adjustments based on a Baht figure) rather than the traditional log-linear model (which makes percentage adjustments) would be worthy of consideration and the use of the Mean Percentage Error (MPE) to compare the models is a strange choice since it is generally accepted that an absolute error term (such as the mean absolute percentage error or MAPE) is needed to properly compare results. Examination of the results suggested that absolute terms might in fact have been used however this is not clear. Overall the results of this study are a little disappointing in terms of the explanatory power of the underlying regression models. This is most likely due to data problems.

Pacharavanich et al (2000) investigated the use of case based reasoning as the basis of an expert system for housing in Bangkok. This paper evaluated a system that used existing data from the Government Housing Bank (GHB). While valuers found the system to be useful and it was concluded that the system would assist inexperienced valuers, it is clear about the reliability or accuracy of the system or the underlying data.

Significant further research has been completed that examines the opportunities for modelling data in Bangkok. Kalayamaneekorn et al (1999) modeled the offering price of rural and agricultural land in the Sampaolom, Ayuttaya province. They used the offering price because the market price is could not be established and declare prices were no considered to reflect the market price. They used a multiple regression model based on 100 observations with R squared 0.75 to conclude that there were four main factors affecting the value of agriculture land. These were the distance of land to the river, the land rights, the distance of the land to the nearest main road and the available water supply.

[6] This is the price that the purchaser "declares" was paid for the property and is used for registration and taxation purposes

In a study involving townhouses in the Bangbuathong suburb area of Bangkok, Rodchakpai Et at (1998) used multiple regression with some 300 observations and used both the offer price and sale price as dependent variables. They discovered that the major factors affecting the offer price of townhouse are the number of bedrooms, building area, building age, corner allotment, distance from main road and sub cities and land area with R square 0.7. For sales price, the results include three more independent variables as clubhouse, swimming pool and tennis court. Moreover, the sale price is 97.5% of offer price with R Square 0.95 however they do point out that this is based on data prior to the Thai economic crisis and that this may not be repeated in more turbulent times. They also state that it is possible to use multiple regression models for townhouse valuations with small locations and that the models need to be updated frequently to allow for market variations over time. Offer prices for vacant land valuation were modelled by Pichayarat and Siriwesmas (1998) in a study of 100 properties in the Huamark and Suanluang district of Bangkok. They found that the offer price depends mainly on area, width of road in front of land, distance from main road and concrete road surface (dummy variable) with an R squared of 0.80. Prices of land over 100,000 Baht per unit were also found to be highly variable.

Overall these studies show that there is potential for the development of compterised mass appraisal systems but also highlight a number of issues that need to be dealt with before an effective system can be established. Two main issues seem to have emerged that must be examined before any significant further work can continue these are

- how to deal with the problem of an accurate price measure and if either the two currently used values, asking and declared price, can be used effectively.
- The need for an organized property data base that is accurate and accessible

The declared price – asking price issue

One of the most fundamental requirements for any robust valuation is clear evidence of the value of similar properties. Generally valuations based on direct price inference are always considered superior to all other estimates of value. Academics, practitioners and the courts support this theoretically and practically. It follows that the most important information that can be collected about a property transaction is the transfer price. Unfortunately this information is not accurately recorded in Thailand. In dismissing the use of a direct method Robertson states that sales information in Thailand is suspect because a duty is paid upon transfer. However this practice is common in many countries where sales information is considered to be reliable. If we consider the situation in South Australia where the Torrens Title System[7] was first officially used, a duty has always been paid on the transfer of property, but the information collected about price is considered to be very accurate except in some circumstances that can be easily identified.

Clearly this cannot be the reason for the inaccuracy. It is more likely that the problem arises due the transfer process. In Thailand the property transaction is not supervised and may take place in private. The price paid must then be “declared” and duty paid on this declared price. If the declared price is not consistent with the appraised value from the CVA then duty is paid on the basis of the appraisal. It is a common belief in Thailand that the declared price and the actual transfer price are often considerably different. As a result it has become a common practice to use the asking price of the property as an indication of value, despite the fact that this is considered to be unsound in the majority of the literature and by the courts in most countries.

There has been some investigation of the validity of the declared and asking prices. Veerakul et al (1998) used the A/S ratio to study the relationship between appraised and declared prices for 40 Bangkok residential condominiums buildings totaling 1040 condominium units. They compared the difference between assessed value by CVA and the declare value. They found that in 81% of the cases the appraisal value exceeded the declare price. They suggest that this could be due to the fact that appraised values may relate to the period prior to the economic downturn in Thailand and go on to state that the owners of condominiums usually declared the market price a little bit higher or equal to market price to avoiding paying transferring fee and related tax. They also conclude that the government should collect and analysis A/S ratio for each condominium to make simple adjustments to appraised values.

There is no doubt that the establishment of an accurate transaction price estimate is fundamental to the development of an effective mass appraisal system as well as the advance of the valuation industry. Regardless of the quality of other data, there is no methodology that will overcome inaccuracies in this most vital piece of data.

[7] Now widely used

The Data Base issue

The need for a standardised property data set in Thailand has long been discussed and identified as a priority. The CVA (1998) discussed this in their strategic plan where they suggest that such a data base is not only critical to the CVA but that a suitable data set would have wide commercial application and would therefore generate significant income. The cost to develop and maintain such a database would be considerable and is probably why no such database exists. Given the large number of properties involved it s paramount that any formal data base be very carefully designed to ensure that is will have the widest possible application at the lowest possible price. This will require significant research and organization by the various stakeholders. There are three existing databases that might provide a valuable starting point. The CVA has some data for properties as a result of the title system and the block valuation system. There is also data collected for the various pilot studies such as the Lad Praow project. The Government Housing Bank (GHB), and private bank loan also has a large database that has been derived from security valuations. Similarly the Bangkok Housing Authority has data. These datasets could be used to establish broad modelling parameters that would provide valuable insight into exactly which variables need to be collected and in what format. It is hoped that the new National Real Estate Information Center funded by the World Bank, will assist in the development of a robust and reliable database.

It cannot be emphasised enough that the development of such a database is paramount to future development of the valuation industry in Thailand and that all major stakeholders must have the opportunity to be involved with its development.

Conclusions and Recommendations

This paper examines the opportunities for the development of computerised mass appraisal in Thailand. It seems clear that there is significant scope for the development of computerised systems and that a system may be technically possible. There seems little point however in pursuing valuation methodology issues until some of the basic data problems have been resolved. In particular the problems of inaccurate transfer price estimates and of a suitable format and design for a property database. It is recommended that research and development be focused in these areas as a matter of priority as they form the basis of the future development of valuation in Thailand.

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Table 2 - Significant events in the development of valuation in Thailand in the last 25 years

Year	Events
2518 (1975)	S.H. Robertson as a representative from the International Monetary Fund suggests the setting up of the Valuation Section in the Ministry of Finance.
2519 (1976)	First University valuation subject is established in the Master Degree of Housing development, Faculty of Architecture, Chulalongkorn University.
2521 (1978)	Valuation Section in Department of Land at Ministry of Interior is established to study how to market valuation of land and property in Thailand.
2524 (1981)	Cabinet agrees to set up Central Valuation section at Department of Land (DOL) on November 17, 2524 to establish the market values of land and building.
2527 (1984)	The Central Valuation Authority (CVA) is established as a department at the DOL on February 3, 2527 as the government authority to estimate land and building values for use as a tax base and as an estimate of value for duty when transferring and registering land.
2529 (1986)	The Valuers Association of Thailand (VAT) is established as a professional organization to coordinate government and private sectors valuation including banking and education. The aim was to assist in the education of people in the valuation field and to establish standards and practices for valuers.
	ASEAN Valuers Associations including the VAT, found the ASEAN Valuers Association Council (AVA). The president of the associations congress to be rotated between the presidents of each country.
2530 (1987)	Rajamangala Institute of Technology, Bangkok Technical Campus opens a 2-year course in appraisal. The curriculum is considered to be similar to that offered by the Department of Technical and Further Education (TAFE) in Australia.
	The Government Housing Bank decide to use valuation companies to value the land and building as collateral. Previously all banks used internal extimates to establish the appropriate level for loans.
2532 (1989)	Ramkhamheang University begins an appraisal subject in Bachelor degree at Real Estate major, department of industrial, business school.
2534 (1991)	The DOL in cooperation with the VAT, host the ASEAN Valuers Congress in Bangkok
2536 (1993)	VAT decides to develop appraisal standards and practice in Thailand.
	Security Exchange Commission (SEC) requires that after April 28th valuers and valuation companies that value properties for public companies will require their approval.
2538 (1995)	VAT and SEC select only 15 valuation companies to value for public purposes. They also establish standards for valuation involving property funds.
	VAT print all government appraisal value in Bangkok (2539-2542) This contains the block values for vacant land in Bangkok.
	Thai Valuers Association (TVA) is established by 13 valuation companies on September 24.
2539 (1996)	Thammasat University opens the Graduate Diploma in Property Valuation.
	DOL and VAT organise the ASEAN Valuers Association conference. (November 7-8)

	VAT establishes new standards and practices for valuers.
2540 (1997)	SEC announces the regulation of valuers of involved in property fund valuations.
	VAT approves the valuation companies who will value for public purpose and property funds then pass through SEC acknowledgement.
	TVA establishes the standards and practices. (January 1)
	BOT, Bank of Thailand, accept the use of standards and practices from both VAT and TVA for appraisal in Thailand.
2541 (1998)	The Bank of Thailand (BOT) announces different regulations for financial institutions. This regulation makes the financial institutions use outside external (not their own) professional valuers every year to assess the collateral for the loans over 25 million Baht if the financial institutions has capital of less than 8,000 million Baht and for loans over 50 million Baht if the financial institutions has capital of over 8,000 million Baht. It is expected that this will lead to improved valuations and the impetus to establish standard and practices
	SEC asks the Royal Institution of Chartered Surveyors (RICS) to study and suggestion to improve the valuation in Thailand.
	Assumption Business School (ABAC) open real estate major at undergraduate level.
	TVA was approved to be Member state of International Valuation Standards Committee (IVSC) on October 7.
2542 (1999)	Both VAT and TVA establish and run monthly continuing professional development programs.
	A new five year development plan is enacted for the whole country
	CVA, Department of Land, Ministry of Interior announces the new appraised value lasting 4 years from 2000 to 2003 for all of Thailand.
2543 (2000)	VAT releases a set of the standard building construction costs (baht per sqm). For 30 different types of building.
	World bank funded loan US$800,000 to set up National Real Estate Information Center. Basic policy and research have just been established.