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E.D.I., THE VALUATION PROCESS AND WHO OWNS WHAT.

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Abstract: This paper will investigate the ever-increasing role of technology in valuation/appraisal practice. The use of computers in receiving instructions, the collection of on-line sales data (through different sources) will be investigated. The parameters for initial sorting and collation of data will be analysed. Linked to this will be the overlaying of geographical information systems (GIS) mapping data, through other on-line systems. Access to local government data will be investigated to show the use of new computer plan technology overlay systems, together with the GIS data already accessed.
The input and collation of other on-line data, such as detailed sales records, combined with zoning (permitted land use codes) will be studied.
The use of lap-top computers in carrying out property inspections, together with drop-down menus and 'check listing' of necessary data to be entered at the time of inspection will also be investigated. Additional input of data for the comparable sales analysis and then the application of this data to subject property will be studied, as though it were taking place 'on-site' or 'on the road'.
The use of pro-forma reporting and non-standard reporting will be shown as well as the forwarding of the finished product by electronic means.
The use of quality control measures and the issue if privacy of information will also be covered.

1.0 Introduction.

Property has always been an essential commodity. It is one of the largest asset classes in the balance sheet of many major corporations. It is used as the principal security for many lenders. It is one of the main outlets for investment by super-annuation funds, property trusts (R.E.I.T's) and other savings institutions. Many Australians own, or are purchasing, their homes and to make a decision on a property purchase or on a loan an appraisal is usually required.
Martin (1994) sees property as a fundamental part of the economy, having a life cycle from land development through to eventual renovation and redevelopment. The role of the appraiser has always been important in this cycle, but has undergone rapid change over the last 5 years. For many years the process of appraisal involved the use of standard forms of letters of instruction, multi-page reports, (with attachments), paper invoices, then finally (and many times hopefully), payment by check. The use of computers, or should one say more correctly, the use of e-commerce, (of which electronic data interchange (EDI) is a part), has to a great extent automated the whole process. Overall in reviewing the use of computers in the appraisal process some 15+ points have been identified where EDI is playing an important role. (See comprehensive flow chart annexed to this paper). The issuing of instructions, collection of sales data, its analysis, overlaying of G.I.S., and subsequent building on the sales data base has opened a new area for the urban appraiser.
The rapid progress of computer technology may allow the appraiser to be more thorough and efficient in their investigation and subsequent data collection and analysis. (Rayburn & Tosh, 1995, p430).
The introduction of minimum standards for reporting, especially in relation to residential property, has meant that scope for electronic valuations has increased markedly.

Does this mean that the appraiser will be put out of work because computers can model the report once certain facts are known?
Surely it would be more cost effective to have a computer program that could 'evaluate' the appraisal figure, using artificial intelligence. Is an artificially generated computer value estimate an appraisal report?
It was stated in 1995, (p78), by Warren, that,
"In over 90% of cases, residential appraisal is a formality. The objective of the appraisal department is to perform the ritual 90% portion efficiently and to catch the problems concealed in the remaining 5% or 10% of the loan applications. The appraiser earns his pay by saying 'no' perhaps 5% of the time."
If 90% are a mere formality, why bother having the appraiser carry out the appraisal? Can the financier afford to take the risk, or is the appraiser the 'fall guy'? (Warren, 1995, p78).
In, 1997, Nye indicated that many in the lending industry believed that appraisals would not be required within 3 years. We now have opportunity to look at this hindsight and see that many lenders now want advice on the possible risks associated with the property. But this is another story.

2.0 Appraisal Instructions,

In Australia instructions to undertake a mortgage/loan appraisal can originate from different sources:

- Lending organization (bank, building society, insurance Co.)
- Mortgage originator,
- Mortgage broker (mortgage agent)

At this point the integrity of the electronic system is crucial. Although the request to appraise has been via the interent (or more correctly, e-commerce), it must be used in a closed system, with adequate passwords. This is sometimes referred to as a 'proprietary network'. (Rayburn &Tosh, 1995, p433).
All such instructions are of a similar structure and contain the same basic information. This allows for easy electronic transfer. A recent poll of major appraisers found that there are two main areas of concern.

1. Suitable contact details for access to the property to be appraised. (phone numbers of owner, tenant, selling agent, managing agent, and occupier).
2. Duplication of instructions.

The first area (access) has become crucial as most lenders (mortgagees) require (wherever possible) a seventy-two (72) hour turn around time. Clients now expect, no they are demanding, because of technological advances, faster turn around times, as stated by Rayburn and Tosh, (1995. p433). What is interesting to note here is that there has already been litigation over the interpretation of the time clause in supplying appraisal reports. Does the seventy-two hours operate on non-work days? Is it from the time it was sent (and theoretically received), or from the time it was read by the appraiser off the screen? Is it from the time access to the premises was physically obtained? (The case of the obstructive tenant/occupier!). This has become important in New South Wales (the most populous state in Australia), as the standard contract for the sale of residential property has a "five (5) day cooling off period" That is the vendor is locked to a prospective purchaser for five (5) business days so the purchaser can arrange inspections,

searches, finance etc. Whereas the purchaser can withdraw (after cooling off) in those five days. The solution that appears to cover this is a more than comprehensive set of access questions given to the person/s applying for the loan.

The second area is that of duplication (and in a few cases triplication) of the issuing of instructions. This may seem peculiar, but where a loan application passes through several sets of 'hands' it has been known for mistakes to occur. The proper numbering of such applications could eliminate this, and that becomes the 'tracer' to all action. Research has revealed that human error can and will still occur. For example. A second party as 565/99/-1 can input loan application No. 565/99/01, and the electronic system will read this as different instructions to the first. Sometimes, it is only when two reports are received that the error is detected.

The actual electronic transfer of instructions to the appraisal firm is carried out by modem and phone line, with the time of dispatch recorded.
Upon receipt of the instructions by the appraisal firm the 'job' can be allocated to the appropriate appraiser. This is where some of the greatest benefit of technology has occurred as jobs are allocated within minutes of receipt.

3.0 The Virtual Home-based Appraisal Office.

The appraiser of today can work from the 'virtual office or home based operation'.
The decentralization of staff and the cost savings that can be achieved have enabled the appraisal industry to become more competitive than ever. Costs of leasing large office areas, when appraisers used to be out of the office more than 50% of the time, the costs of support staff (word processing operators/secretaries/researchers etc.) have been reduced greatly. A recent case study of a medium sized firm in Sydney, showed leased space was reduced by 65%, support staff reduced by 60% and the actual location the main office could be anywhere, due to the use of computers. (Decentralization from a CBD location, lower actual rent).

The home based appraiser receives detailed instructions within minutes of receipt by the firm. This gives the appraiser the flexibility in scheduling work, day by day, and even parts day. It becomes obvious that the appraiser needs to be computer literate and have quality hardware, plus the necessary software (and training) to function at this level. Again research has revealed that the larger firms supply and install the necessary hardware and software, (thereby maintaining control of the system) so that standardization is ensured. It has been stated that the 'average appraiser' (if there is such a person) can be up and running within one week of the system coming on-line. Just what is required to run such a system?

- Pentium (or equivalent) PC
- At least 64 MB RAM
- Min 6 GB hard disc
- 15" monitor
- 56 KPS modem (built-in or external)
- Printer (optional only as all work electronically sent).

It can be seen that there is nothing unusual about the set-up. The firm also supplies all its appraisers with a mobile phone.
The flexibility of using such a system cannot be over-stressed. The appraiser partner (many times his/her spouse) could also access the system and organize the jobs as they come in. This could greatly increase turnover, reduce turn around time, save on mileage and enhance the efficiency of the operation.

4.0 Appraisal data everywhere, which batches do you use?

The collection of accurate data has become more important as real estate markets become more dynamic. The appraiser is expected to be fully informed of the state of play in the market and to that end, up to date data is important. Rabianski, (1995, p46), indicated that more appraisals and market study reports contained in them, now rely on demographic and economic information, (e.g., population, households, per capita income, mean and median household income, and the age composition of the population or household), obtained from many vendors of such data. He goes on to state that many clients (appraisers included), mistakenly believe that the companies that sell the data, understand real estate market analysis and specifically market (real estate) delineation. The question is, as always, with electronic data, just how reliable is the data? The old saying still applies, 'garbage in, garbage out'.
Data in New South Wales is available from three main commercial sources:

- RP Data (Real Property Data)
- Residex (Residential Index of Sales)
- CPM (Commercial Property Monitor & Australian Property Monitor).

All three databases have on-line access but differ in their capacity to sort and present results.
RP Data is the largest electronic database and relies on statutory information sent to the necessary State Government Departments when property is transferred (sold). This data, which has always been available for a fee, is packaged by the State Government Department and on-sold to the private provider. (RP Data). This information is then repackaged so that searching can be carried within certain parameters, such as price range, suburb, street, land size etc.

The main problem with this data is that it is approximately 8 weeks old when it is received and processed. If the market is moving rapidly, then this historical data is of limited use. The actual detail of the data is also limited. The improvements are in no way described, surrounding development detailed or location confirmed. It is up to the appraiser to investigate and report on the degree of comparability.
Residex is a similar system to RP data. but has an advantage in that additional data is entered from listing detail collected by real estate brokers. This allows for a fairly detailed description of the improvements, as well as those other features already mentioned. The quantity of data is limited to those brokers who participate in the scheme, and the quality of the data is dependent upon the accuracy of the brokers' description. (From experience it is sometimes quite imaginative!). As with all appraisal methodology

much of the detail has to be physically confirmed by the appraiser. Overall, however, it is approaching a comprehensive standard.
Commercial Property Monitor, as the name implies, mainly deals with commercial, industrial and retail premises. Some larger, (high class/price) residential property is also recorded, but it is of little use to the residential appraiser. The quality of the data, and the parameters for searching and sorting are excellent.

There are other types of data that have become available by on-line searching, and this has made the appraisers' task faster, and allowed for a greater degree of accuracy. Legal details of title, including encumbrances can now be accessed, as well local council (Government) zoning and building requirements. Of course the authority makes charges for the use of this data, but ease of access outweighs the cost by far. In one local government area the actual building plans (blue prints) have been digitally entered and it was proposed, that for a fee, access could be gained to those. However, under new privacy legislation this has now been stopped. It is interesting to note that if the appraiser approached the authority direct and pays a small fee, the plans can be physically viewed at the offices of the authority.
By now the appraiser has probably not left his/her virtual office and yet has collected and made preliminary analysis of much of the data. Why bother even inspecting the property?

5.0 Is G.I.S. of any real use to the appraiser?

Over the last five years Geographic Information Systems (G.I.S.), were heralded as the new font of information for the appraiser. It was thought that the appraiser would grasp the use of such an inter-related mapping tool and embrace it in all forms of reporting.
"Sales data for each year can be examined to document and describe the landscape through the use of thematic maps". (Bible, 1995, p441).
Fung, Kung and Barber, (1995, pp445-452), also describe this application of G.I.S. to mapping real estate values. They commented that this would provide members with an up-to-date information system and enhanced information retrieval, and plot trends in sales over the past decades.
A survey of some 24 appraisers, in the Sydney metropolitan area, revealed that virtually no one uses G.I.S. at all. The system was available through R.P. Data systems, in conjunction with the sales data. It could deliver a mapping based sales grid, indicating the subject property, then the sales extracted and plotted, using the collation parameters supplied. The only time such a system was used was in cases of specialist type properties. (Waterfront, corner lots etc.), for special instructions. (E.g., litigation, resumption). When queried, one of the reasons for not using the system was that appraisers felt the extra time and costs involved in using the system did not warrant its use. They, in reality, created their own G.I.S. sales database, in hard copy so that they could carry it with them for ease of use. It was ever expanding, as they collected up to the minute sales data, not yet available on the database.
The main use of G.I.S. was in creating hard copy locality maps, with accurate boundary definitions and legal descriptions, that could be used to record, by hand, new sales data. Final comment was made on possible future potential in relation to rural properties where land class/type could be shown. This was not viewed as an urgent consideration at the present time.

6.0 The appraiser rules supreme.

No matter how much technology is introduced or used, it is still the appraiser who has to inspect the subject property, check the accuracy of the sales and carry out the final analysis. They haven't invented a computer/robot, which can see the actual property, with all its faults and attributes and convert those into a meaningful/rational solution.
The appraiser however can be aided by the use of a laptop computer. It is becoming fairly common (approximately 25% of those questioned) for appraisers to use a standard inspection type program, that enable them to 'fill-in' the missing spaces/answer the necessary questions etc., so that nothing is missed. This is in form, a type of risk minimization process, or checklist of items that must be inspected. It is well known that many appraisers still use a standard paper inspection form, so what's the difference in using a computer? If a laptop is used, then the data can be electronically stored, worked on at a later time, then merged into the standard type report and then emailed to the necessary party. This process may save entering the data twice, once manually and then again into the final report.
The appraiser must also inspect those sales that form the basis of the analysis. The information collected here, has probably become the most valuable data. It is the skill of the appraiser in estimating/calculating the adjustments that have to be made, that reflect the degree of comparability, and this when entered into a data base is of great value to other appraisers and the lending organizations. Who owns the data?

7.0 Appraisal sales data, its repackaging, ownership, use and re-use. (EDI expanded).

Many times, as much of the on-line packaged sales data is relatively old, the appraiser is collecting real-time information from local real estate brokers, that is unavailable through any other source. This data when entered is again ahead of the other historical data sent through government departments and therefore has a good commercial value in being available to be on-sold. The big question, again, is who owns it?
At recent discussions and meeting in Australia, this area has become a stumbling block in the introduction of a full EDI appraisal system.
What has evolved, to this date, is that many of the valuation firms and financial institutions have agreed that:

- There is a definite need for an electronic system of residential appraisals between appraisers and financial institutions.
- A basic freedom of choice in the selection of the computer methodology adopted and adapted by individual practices must be maintained.
- At this stage only residential appraisals will be undertaken electronically.
- A comprehensive data base system can be designed as part of the delivery system, but not populated nor further utilized or distributed without the written agreement of the providers/owners of that data. (The appraisers and the appraisal firms, plus the suppliers of the original data).

Already it can be seen that there is data being drawn from various sources, used, manipulated, changed, added to or repackaged. Again, the big question is who owns it?

Initial investigations have established that once the data is amended in any form, it basically becomes ‘new data’, and the intellectual copyright (ownership) is vested in the person/firm that created the new data set. It must be remembered here that due acknowledgment of the original data source should be given. It is also pointed out here that the amendments must be substantial and not just one line or word. As stated above, where substantial data is added, for example, a full description of the improvements, adjustment figures, sale terms and conditions, the appraiser or firm that created it owns the new material.

8.0 The electronic appraisal report. (No paper but just as meaningful).

Today, with the use of standardized formats it has become easier and faster for the appraiser to complete the final report. Many financiers have agreed that there is certain information that must contained/shown in the report and other information that is only ‘filler’. What is interesting is that certain areas have taken on a more important function and made the role of the appraiser more crucial. Areas that have taken on such importance include:

- The use of a ‘flagging or warning’ section, where items that may be overlooked in a normal report are highlighted for the financier.
- Marketability of the premises to be assessed in the event of a mortgagee sale.
- Assessment of a ‘risk factor’ if the property is in any way out of the ordinary.

This has meant that the role of the appraiser has changed slightly and the skill and expertise required is now reflected in the style/type of report, and hopefully in the fee charged.

Naturally not all properties are the same, and not all reports are the same. The report format has to allow for specialized insertions, and this is where the major problems occur. Two purported standard systems allowed for only a minimum degree of input, so that the appraiser was restricted in making comments or explaining in detail, in a narrative fashion, the rationale behind the decision. Perhaps the key word is ‘flexibility’ of the system. Although the financial institutions would like a one or two page report, (for some reason they feel that if it can all fit onto a single page, both sides, the report must be better than a three page report), an appraiser may be ‘sounding the alarm’ with a detailed extra page.

This is of course linked to risk minimization procedures. Research has shown that at least two appraisal firms, run an electronic ‘check-list’ over reports submitted by their appraisers. They warn all employees that one or two reports in five will be ‘reviewed’. It is pointed out here that they are not concerned with the appraisal figure, but with the thoroughness of the actual report. The theory being that if the report is complete, the less the margin for error.

Another area of concern raised by appraisers was that the complete final report was hard to see on a computer screen. Only sections of the report could be viewed at a time, and the report, in its entirety, (the completed product), was hard to visualize. Many of the appraisers stated that they still printed the report after it was completed, but before it was sent off electronically, to edit the final draft. Other appraisers made the comment that it took them many months to gain confidence in the systems used, so that once the report was entered on the computer, it was checked from the screen and sent immediately.

Printing the report in a draft format may seem like double handling, but many appraisers still do this for at least 20% of their work to ensure quality is maintained. They also felt that this was a risk minimization procedure as well as ensuring that if a mistake was made it did not perpetuate it in all future reports.
Once the report is ready it is sent electronically by the appraiser back through the firm, ready to go to the instructing party. As already explained this is so that the report can be checked, and if necessary, bundled with other reports, and sent in bulk. Research has shown that there are no problems with reports not arriving at their destination. The security/privacy of the system does not appear to be of concern, as they run on closed Internet sites.

9.0 Mistakes, no appraisers never make them.

That's right, appraisers don't make mistakes, they make errors of judgment. But don't panic, all systems investigated allow for alterations to final reports from both ends before the final report is drawn-off or finally sent to the instructing party. That is, if the appraiser does realize that an item needs adjusting, the report can be drawn down, altered and resubmitted. During the reviewing/monitoring process of the appraisal firm the same thing can be done. The system is secured by the use a passwords and pin numbers. The report cannot be altered from outside or from the financier's end. Again, this is a risk minimization procedure, and ensures the integrity of the system.

10.0 Storage of appraisal data and reports.

All data can be stored electronically, either on the hard disk, on a floppy or zip disk. This however, does not mean the end of the paper war. Investigations have shown that all appraisers still maintained a paper file system, with copies of all relevant data.
As stated previously, there is a large amount of valuable sales data that is being accumulated by the firm, or at the EDI point. Research has shown that it is being downloaded onto separate computers for both storage and future analysis. Most appraisers for the firm do not need to draw on this data, however to have the data available and not use it to its fullest extent would be an economic fallacy. Again, with the property market being so dynamic, the question arises is it worthwhile keeping data that is older than, say three months?
The other question is that if the data is so good, couldn't/shouldn't it be on sold to other appraisers (for a fee)? Does this refined data belong to the firm or the appraiser? Should the appraiser receive a share in the sale of this data?

11.0 Conclusions. (Is technology replacing the appraiser?)

After reading all this it becomes quite obvious that the computer will not replace the appraiser. If the financier wishes to take the risk and use computer models to determine a range of values, and then lend against this, then there is nothing the appraiser can do. If however, the financier wished to minimize the risk, then the obvious solution is to have the property appraised. Can the financier afford to be wrong in 5% or 10% of their loans? Is it cost effective to have an appraiser inspect the premises and determine an accurate

figure? Is a three to five day turn around time unreasonable? As the volume of loans increases, interest charges and wages increase/decrease the possibility of loan defaults alter. The appraiser must still be seen as an ‘underwriter’ for the value of the property.

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