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Generic Software Packages: A Survey Of Property Fund Managers

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Abstract: Summarising the findings of a Construction Innovation research project, undertaken for and funded by the Cooperative Research Centre for Construction Innovation, the paper considers issues associated with the use by Australian property fund managers of generic software packages.

Based on a survey sample of 12 Australian organisations with over \$65 billion property funds under management, those generic software packages currently in use were specified and the practical importance of identified theoretical benefits and limitations ranked.

The survey also investigated the level of functionality required of generic software packages and the level used, together with the adequacy of reports generated for the purpose of decision-making by property fund managers.

Conclusions are then drawn regarding key issues concerning the use of generic software packages by property fund managers.

This paper comprises a summary of the findings of a Construction Innovation research project undertaken for and funded by the Cooperative Research Centre for Construction Innovation (CRC CI) in Australia (Parker (2003A)). The CRC CI is a national collaborative research and development centre, focussed on the needs of the property, design, construction and facility management sectors. Involving five Universities and twelve founding industry participants with \$64 million funding and a seven year programme involving over 150 researchers, the CRC CI is developing key technologies, tools and management systems to improve the effectiveness of the Australian property and construction industries.

The research focussed on property fund managers (rather than valuers, property managers or other service providers) and their use of generic software packages for property portfolio management (rather than facilities, property, asset or funds management).

Based on Parker (2003B), (informed by Nelson (2002)), property portfolio management was identified as one of five contributory elements to the property fund management business model, comprising the typical activities of valuation, forecasting, modelling, monitoring, measuring, benchmarking and market analysis at the property group level. Property fund managers are, accordingly, responsible for the management of groups of property portfolios.

In an Australian context, property fund management includes listed property trusts, unlisted wholesale property funds and unlisted retail funds or syndicates, an industry which, by 2003, had funds under management of approximately A\$163 billion (Wilmot (2003)).

The term, generic software package, is used to distinguish a software package produced by a vendor and which is widely available from a proprietary software package developed by a company for its own, sole use (Parker (2003B) informed by Parker and Robinson (2000))

Parker (2003B) further identified examples of generic software packages used for property portfolio management to include such products as Cougar, DYNA, Circle and Argus:

- www.therealm.com
- www.cougarsoftware.com
- www.circle-systems.co.uk
- www.argussoftware.com

Accordingly, therefore, property fund management is a significant industry involving a very large number of individual properties for which the use of generic software packages to perform valuation, forecasting, modelling, monitoring, measuring, benchmarking and market analysis are fundamental for effective property portfolio management.

Following a literature review to identify the theoretical benefits and limitations of generic software packages, a survey of property fund managers was conducted to identify:

- those generic software packages currently in use in Australia;
- the relative importance in practice of those benefits and limitations of generic software packages identified in theory;
- the level of functionality in generic software packages required by property fund managers;
- the level of functionality in generic software packages used by property fund managers; and
- the adequacy of reports generated for the purpose of decision-making by property fund managers.

Having regard to the findings of the survey of property fund managers concerning issues associated with the use of generic software packages, conclusions are then drawn concerning key issues arising.

Literature Review

Whilst the literature concerning the use of generic software packages for property portfolio management is limited, Fonteyn (2000) considers the role of IT in Australian property management generally, observing that:

“ . . . the 2000's will be about electronic commerce and the flow of digital information. These terms refer to the speed and volume of information that will be available to business and consumers, which will lead to rapid changes in business strategy” (page 112)

Fonteyn (2000) also notes that a “recent study” sponsored by NAREIT:

“found that US property companies spent between 0.3% and 0.9% of revenues on information technology.” “This compares to between 2%

and 5% for the banking, insurance and professional services and utility industries . . . “ (page 112-3)

Scott (2000) notes the increasing use globally of “end to end” software solutions for business (Enterprise Resource Planning solutions or ERP) with the development of integrated “property specific solutions” or generic software packages.

Parker (2001) considers the internationalisation of the property fund management industry in Australia, noting that:

“The requirement for consistency, accuracy and transparency in cash flow forecasting by increasingly large and global property funds management groups has driven the trend to greater use of generic software packages for property funds management”

though acknowledging that, with the multiplicity of software packages used by Australian property fund managers for facilities, property, asset, portfolio and fund management, efficient, electronic interfaces between packages may become essential for effective operation.

Further, the lack of capacity of some packages to address the requirements of more than a couple of such levels of management is a significant limitation as may be the lack of one, industry wide, commonly adopted solution.

Nelson (2002) identifies eight key trends in the Australian management industry including:

- service delivery technology and the elevation of software systems to allow the creation of a data warehouse containing accessible information about every aspect of each function; and
- the consolidation of service providers, with focus on compatibility of systems and outputs.

Greater use of “property specific solutions”, drawing on a data warehouse, by property fund managers should facilitate the benefits that come with the use of data base software generally, such as the ability to manipulate (“slice and dice”) data and to export data for reports and graphics.

Conversely, such greater use may exacerbate the limitations that come with the use of data base software generally, such as inflexibility, complexity, data entry quality control and the “black box” accusation concerning a lack of transparency of calculations within the software.

Accordingly, based on the above, the benefits and limitations of generic software packages used for portfolio management may, in theory, be contended to include:

- Benefits:
 - o accuracy;
 - o consistency;
 - o transparency;
 - o data warehouse;
 - o electronic transfer of data from other packages;
 - o compatibility of software systems allowing consolidation of service providers;
 - o transparency of calculations at report level;
 - o slicing and dicing data (by classifications, time periods, etc);
 - o exporting data for reports; and

- exporting data into graphics;
- Limitations:
 - Inflexibility;
 - quality control of data entry;
 - complexity;
 - lack of one commonly adopted package as industry standard;
 - black box;
 - lack of property management functionality; and
 - lack of fund management functionality.

Having identified the theoretical benefits and limitations from the literature reviewed, the relative importance of each in practice was determined by a survey of property fund managers.

Survey Sample

To test the theoretical findings of the literature review in practice and to collect that data required to identify those packages currently in use, the required functionality, the functionality used and adequacy of reports for decision-making purposes, a survey instrument was designed, tested and refined to limit ambiguity.

Given the size and complexity of generic software packages, it was proposed to limit the survey to the largest property fund managers in Australia, being those with property funds under management greater than A\$1.25 billion.

A population of eighteen such property fund managers for survey (with approximately A\$86.2 billion property funds under management) was collated from the listed property trust, unlisted wholesale property fund and unlisted retail fund or syndicate industries using PIR (2003A), PIR (2003B) and the author's industry knowledge. Those offshore funds managed by Australian property fund managers were excluded from the survey.

Each of the eighteen property fund managers was contacted by telephone, the business person (rather than the IT or accounting person) responsible for property portfolio management identified and, where possible, a convenient time agreed for a face to face meeting to conduct the survey.

Each survey took approximately one hour to complete in an interview environment, including sections completed by the respondent personally. The survey was conducted in confidence, on the basis that results would be aggregated and no individual results published.

Of the eighteen property fund managers contacted, twelve agreed to participate representing a response rate of 67% with funds under management of approximately A\$66.7 billion which represented 78% of the prospective sample.

To further qualify the sample, the survey investigated the number of properties managed and the number of tenants within the property portfolio, establishing that the survey sample's property portfolio comprised over 1,000 properties and over 21,000 tenants.

The survey respondents included listed property trusts, unlisted wholesale property funds and unlisted retail funds or syndicates such that the survey sample was considered both indicative and representative of the population.

Generic Software Packages Currently In Use

Having identified property portfolio management to be one of the five contributory elements to the property fund management business model, comprising the typical activities of valuation, forecasting, modelling, monitoring, measuring, benchmarking and market analysis at the property group level, respondents were asked to nominate which generic software package, proprietorial / in-house package or other package (or combination of packages) was used for such activities with the results given in Table 1.

	By Number	By FUM
DYNA	8%	24%
DYNA and Another	36%	36%
Cougar	30%	24%
Cougar and Another	18%	8%
Excel	8%	8%

Generic Software Packages Currently In Use

Table 1

Source: Author

Significantly, none of the property fund managers were using a proprietorial / in-house package for property portfolio management, none were using generic software packages other than DYNA and Cougar and only one manager was using software other than a generic package (being Excel).

Of the balance, when weighted by funds under management, 60% of the sample was found to use DYNA and 32% to use Cougar. Interestingly, 54% of the sample by number used a generic software package in association with a second software package that, in all cases but one, was Excel. Only 38% of the sample by number used a generic software package alone for property portfolio management. Significantly, the proportion by number of respondents using a second package in association with DYNA was notably greater than that in association with Cougar.

Accordingly, on the basis of funds under management, DYNA in association with a second package was found to be the dominant generic software package in use by Australian property fund managers for property portfolio management.

Importance Of Benefits And Limitations

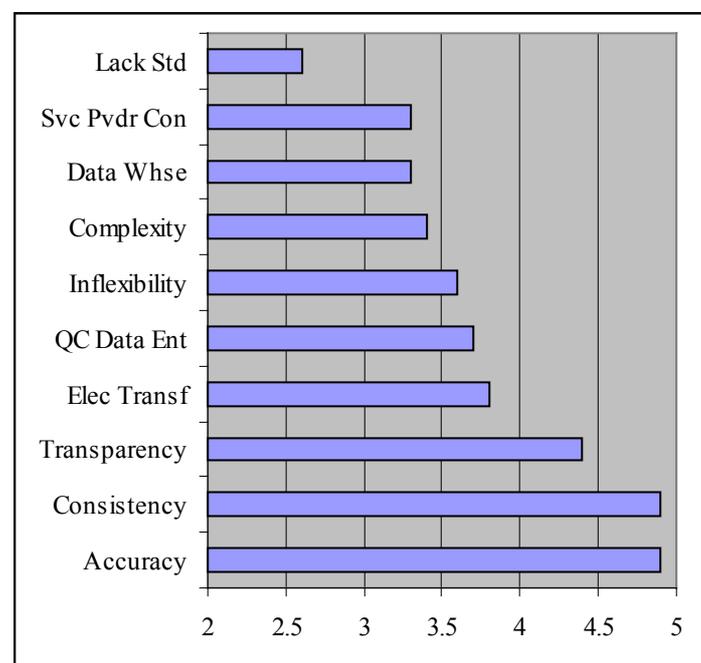
Based on that literature reviewed, the benefits and limitations of generic software packages used for portfolio management may, in theory, be contended to include:

- Generic Benefits – being common to all generic software packages:
 - o greater accuracy;
 - o greater consistency;
 - o greater transparency;
 - o data warehouse;
 - o electronic transfer of data from other packages; and
 - o compatibility of software systems allowing consolidation of service providers;

- Specific Benefits – being specific to individual generic software packages:
 - o transparency of calculations at report level;
 - o slicing and dicing data (by classifications, time periods, etc)
 - o easily export data for reports; and
 - o easily export data into graphics;
- Generic Limitations – being common to all generic software packages:
 - o inflexibility;
 - o constrained by quality control of data entry;
 - o complexity / too many options; and
 - o lack of one commonly adopted package as industry standard;
- Specific Limitations – being specific to individual generic software packages:
 - o black box – lack of transparency of calculations within software;
 - o lack of property management functionality; and
 - o lack of fund management functionality.

Respondents, when probed, did not add any additional benefits or limitations to the list derived from that literature reviewed suggesting, for the purposes of property fund management in Australia at the present time, that the list is comprehensive with theory and practice aligned.

The survey instrument sought to measure respondent's perceptions of the relative importance of such benefits and limitations using a Lickert scale of 1 (low) to 5 (high), with the results given in Figures 1 and 2.



Relative Importance of Generic Benefits and Limitations

Figure 1

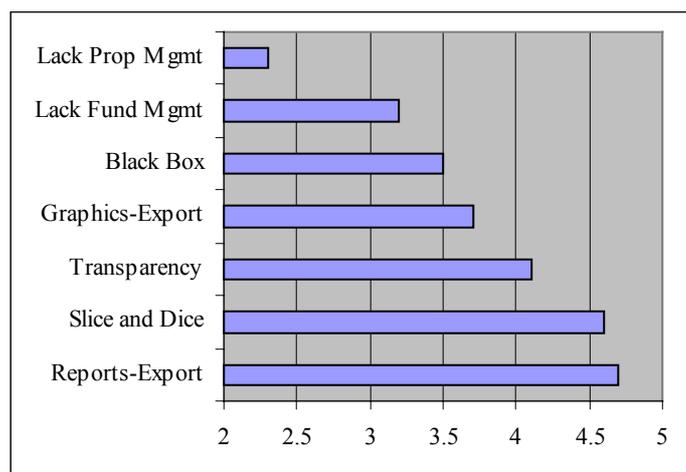
Source: Author

Interestingly, the generic benefits were generally perceived by respondents to be more important than the generic limitations. The generic benefits of accuracy, consistency and transparency were each perceived to be high in importance, with the constraint of quality control of data entry being perceived as the most important generic limitation and with inflexibility and complexity being perceived as marginally less important generic limitations.

The low level of perceived importance attributed to data warehouse and compatibility of software systems allowing consolidation of service providers is an interesting comment on the level of maturity of the perceived role of generic software packages in property fund management in Australia.

The results suggest that, locally, the use of generic software packages has not yet developed to the point where they have become the principal data repository for property fund managers, which may reflect the use of other packages for facilities, property, asset and fund management currently which provide a range of alternative data repositories.

Such immaturity would also be consistent with the currently low perceived importance of using software as a means of consolidating service providers. It will, therefore, be interesting to observe if, in the future, the global trend to one principal data warehouse drives a reduction in the number of service providers used by property fund managers.



Relative Importance of Specific Benefits and Limitations

Figure 2

Source: Author

In the context of those generic software packages currently in use by property fund managers in Australia, the perceived importance of specific benefits exceeded the perceived importance of specific limitations. Easy export of data for reports and the ability to slice and dice data (by classification, time periods, etc) were perceived as the two most important specific benefits.

Consistently, whilst respondents perceived transparency in the generic software packages being used to be an important specific benefit, they did not perceive a lack of transparency of calculations within the software ("black box") to be an important specific limitation. This is a particularly interesting finding given that each of the generic software packages currently in use has been criticised in the past for being an impenetrable "black box" but not, it appears, to those experienced in its use.

The perceived importance of each specific benefit and limitation by DYNA and Cougar users was broadly similar except for ease of data export into graphics (a specific benefit of greater perceived importance to DYNA users than to Cougar users) and “black box” (a specific limitation of a significantly greater perceived importance for Cougar users than for DYNA users).

Accordingly, the survey established that the list of benefits and limitations of generic software packages identified in theory from that literature reviewed was both complete for the current time and supported by practice.

In terms of ranking by relative importance, property fund managers perceive the generic benefits of accuracy, consistency and transparency and the specific benefits of transparency of calculations at report level, the ability to slice and dice data and the ability to easily export data for reports to be the most important features of generic software packages.

Functionality

The survey sought to determine the level of functionality of generic software packages required by property portfolio managers (through identifying the respondents view of functionality missing from such software) and the level of that functionality used.

When probed on missing functionality that would be useful, respondents did not provide any exactly identical answers, though all but one made up to three suggestions that may be classified into two principal groups as follows:

- generic software packages generally:
 - o capacity to read / be read by other packages; and
 - o accessing data not previously used;

- DYNA and Cougar specifically:
 - o greater flexibility in slicing and dicing data;
 - o reporting lacking adequate graphics;
 - o inability to store foot-traffic data;
 - o consolidation features;
 - o development features, such as:
 - a quick and simple residual analysis; and
 - calculation of incremental yield provided by development;
 - o greater portfolio level facilities;
 - o trust modelling;
 - o currency conversion; and
 - o “togglng”.

Respondents were, therefore, found to identify several elements for property portfolio management for which functionality was considered to be missing such that there was an apparent requirement for greater portfolio level functionality.

However, when questioned about the level of functionality used within the relevant generic software packages, the respondents provided an inconsistent result as given in Table 2.

	Range	Average
Sample - DYNA	50%-90%	73%
Sample - Cougar	50%-90%	62%
Sample - Total	50%-85%	68%

Proportion of Functionality Used

Table 2

Source: Author

Whilst respondents acknowledged that they did not use all the functionality available in generic software packages, the average of 68% usage was considered surprising.

Interestingly, between the generic software packages, users of DYNA estimated the proportion of functionality used to be significantly greater than that estimated by users of Cougar.

Generally, respondents commented that “property” functionality (ie: analysis at the individual property level) was used to a far greater extent than “portfolio” functionality (ie: combining individual properties into a group for analysis at the portfolio level). This is consistent with the finding on specific limitations, in Figure 2 (above), that lack of fund management functionality was of greater perceived importance than lack of property management functionality.

It is, therefore, curious that, given an average of 32% of functionality was not used and “portfolio” functionality was admitted to be less used, respondents should identify greater portfolio level functionality as a missing requirement for generic software packages.

It is also notable that the ability to slice and dice and the easy export of graphics for reporting were each identified, above, as perceived benefits of the specific packages currently in use in Australia but greater flexibility and adequacy, respectively, were also identified as missing functionality.

It could, potentially, be found by further research that some or all of such missing functionality already exists within the average 32% of generic software package functionality not estimated to be used by respondents. Similarly, further research may determine that such missing functionality as accessing data, slicing and dicing flexibility and adequacy of reporting graphics may actually be issues of user familiarity with the product and user training.

Reporting

To determine the adequacy of reports for decision-making purposes by property fund managers, the survey sought to:

- determine the extent of use of reports available within the generic software packages; and
- determine if standard reports from the generic software packages were used for decision making without manipulation or, if not, determine the extent of manipulation.

It is contended that if significant manipulation of standard reports from the generic software packages is required for decision-making purposes, then such reports are inadequate for decision-making purposes.

Estimated Proportion of Reports Used	Response
>50%	64%
50%	27%
<50%	9%

Extent Of Report Use

Table 3

Source: Author

As Table 3 shows, 91% of respondents used 50% or more of the reports available within the generic software packages, though none used all of the reports.

However, as Table 4 shows, only 9% of the sample (being one respondent) performed no manipulation of reports with almost three quarters of the sample (73%) performing either significant or moderate levels of manipulation of a standard report for the purposes of use in decision-making.

Level of Report Manipulation	Response
None	9%
Limited	18%
Moderate	27%
Significant	46%

Level Of Report Manipulation

Table 4

Source: Author

Interestingly, the level of significant manipulation was far greater for Cougar reports (80%) than for DYNA reports (17%).

Accordingly, whilst the extent of use of reports available within the generic software packages was found to be high, such reports were found to require manipulation by all but one respondent and are therefore contended to be inadequate for the decision-making purposes of Australian property fund managers.

Summary

The findings of the survey of Australian property fund managers concerning generic software packages may be summarised as follows:

- two generic software packages were found to predominate with DYNA in association with a second package found to be the

- dominant generic software package on the basis of funds under management;
- that the benefits and limitations identified in theory from that literature reviewed were both complete and supported in practice;
 - that the generic benefits of accuracy, consistency and transparency and the specific benefits of transparency of calculations at report level, the ability to slice and dice data and the ability to easily export data for reports were perceived by property fund managers to be the most important features of generic software packages;
 - respondents used an average of 68% of functionality;
 - the level of functionality of generic software packages was found to be relatively high and the extent of missing functionality found to be relatively low; and
 - the extent of use of reports available within the generic software packages was found to be high, though such reports were found to require manipulation by all but one respondent and are therefore contended to be inadequate for decision-making purposes.

Conclusions

The Australian property fund management industry appears to be moving towards the use of one predominant generic software package. Whilst such a move could be beneficial in aligning Australian property fund managers with their global counterparts, the monopolistic aspect of such a move may be disadvantageous.

As a best practice concept, the use of one generic software package would significantly simplify global property fund management and so further contribute to the attractiveness of property as an asset class.

Though the existing generic software packages in use by Australian property fund managers do not offer comprehensive functionality, they are very close to doing so with the positive features significantly outweighing the negative features. Limited further development of such generic software packages for the Australian property fund management industry could overcome the identified limitations in functionality.

From the conduct of the survey, it is observed that Australian property fund managers have evolved to include individuals or small teams whose principal role and focus is the administration of generic software packages. An apparently wide diversity of backgrounds, skill sets, experience and qualifications was also observed amongst this group together with a relative isolation from active involvement in the physical management of the properties being modelled, the property market and the property fund management industry.

Given the nature of the skill set required, the optimal form of education and training for those whose principal role and focus is the administration of generic software packages is worthy of further consideration and investigation. For example, the existence and/or extent of exposure to generic software packages in undergraduate property courses would be worthy of review.

Further, the associated issue of quality of outputs, where such a generic software package administration role is provided in-house by a property fund manager relative to where it is outsourced to an entity for whom such administration is a core business, could be worthy of significant further debate

The survey of property fund managers undertaken for and funded by the CRC CI clearly establishes that generic software packages are a significant element in the property portfolio

management process for the A\$163 billion Australian property fund management industry. The survey also clearly identifies a range of issues concerning generic software packages that are worthy of further research if the effectiveness of the Australian property industry is to be improved.

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