

THE FUTURE OF QUANTITY SURVEYING IN NEW ZEALAND: LIKELY CHANGES, THREATS AND OPPORTUNITIES

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ABSTRACT

Every profession evolves in response to the ever-increasing changes in the global business environment. In order to remain relevant, globally competitive and successful, New Zealand Quantity Surveyors need to constantly scan their business landscape to discern new directions and to adapt to imminent changes in their professional practice. This study aims to investigate the current areas of, and future directions in, quantity surveying practice in the New Zealand construction industry; imminent opportunities and threats; and ways to proactively maximise the opportunities and minimise the threats.

The descriptive survey method was used, which involved pilot interviews and structured questionnaire surveys. Investigations were limited to the views expressed by Quantity Surveyors who were members of the New Zealand Institute of Quantity Surveyors, although the views of members of the New Zealand Institute of Building and consultants with no professional affiliations were also sought. Content analysis, descriptive statistics, multi-attribute techniques and rank correlation tests were used in the analysis of the research data.

Results showed that the five services currently performed by New Zealand Quantity Surveyors, in order of popularity are procurement, tendering, contract administration, cost management and cost advice. Future directions in quantity surveying practice were perceived to be largely in the areas of contract administration, project budgeting and cash flow forecasting, cost planning and feasibility studies, client pre-contract representation in the traditional lump sum bidding, and contract and construction advice. Key areas of rapid growth include advice on feasibility and cost impacts of ESD initiatives, life cycle costing, dispute resolution, asset and facilities management. The five most serious threats to the profession were perceived as acute shortage of skills, lack of recognition of the role of the Quantity Surveyor, market down-turn, use of non-traditional procurement systems and unrealistic expectations by clients. Opportunities exist in the areas of strategic marketing, involvement in alternative procurement, diversification into associated fields, multi-disciplinary collaborations and adaptation to the related industries. A conceptual framework was developed and recommended for use by Quantity Surveyors in mapping a strategic pathway between the current state of affairs and the desired future growth.

Keywords: Construction industry, New Zealand, opportunities and threats, quantity surveying.

1. INTRODUCTION

Every profession must evolve in response to the ever increasing changes in the global business environment. Change has been a global exhortation within the construction industry in the last decade following Sir John Egan's (1998) seminal *Rethinking Construction* report. The need for Quantity Surveyors to remain at the forefront of this change has not been forgotten by more recent commentators (Smith, 2004; Harun & Abdullah, 2006; Davis, Watson and Man, 2007), and remains a relevant and topical issue. Quantity Surveyors in New Zealand are not isolated from imminent changes in the global business landscape. Without scanning and discerning future directions and actively preparing for any impending changes, Quantity Surveyors stand at a risk of receiving changes as threats, rather than opportunities. By prompting practitioners to reflect on their current practices, future directions and desired future states, feedback for this research could be obtained, not only on the likely perceived changes, opportunities and threats, but also on the potential strategies for competitive re-positioning and re-engineering of the profession's status to maximise the opportunities and minimise the imminent threats.

Whilst the original study included views from Quantity Surveyors outside of the NZIQS for data triangulation purposes, in the interest of brevity and relevance, the discussion is limited to the findings obtained from the NZIQS sample (which contributed around 87% of the survey responses).

An extensive literature review yielded very few New Zealand sources on the topic. This research will help to fill some of the gaps in the literature by strengthening the existing body of knowledge internationally and bolstering the small body of local literature. The findings will be of particular interest to the New Zealand Institute of Quantity Surveyors (NZIQS) whose approval of the research extended to a willingness to encourage the active participation in this research amongst its members. Construction industry training organisations and tertiary education providers will benefit from the insight into the likely future developments in the profession, enabling the tailoring of training to emerging and growing areas of educational demand. Organisations with quantity surveying functions will benefit from understanding the general views of their contemporaries allowing better strategic business decision-making regarding future direction. Individual Quantity Surveyors will benefit from an awareness of which aspects of the profession are likely to grow, thereby enabled to make informed decisions regarding career planning and development.

The objectives of the research were to:

1. identify the areas of quantity surveying practice currently prevalent in the New Zealand construction industry,
2. establish the nature and magnitude of likely changes and growth areas in quantity surveying practice in New Zealand,
3. identify the likely opportunities for quantity surveying practice in New Zealand, and to
4. identify the potential threats to quantity surveying practice in New Zealand.

2. LITERATURE REVIEW

2.1 Current and future directions in quantity surveying practice in the New Zealand construction industry

The traditional role of a Quantity Surveyor is often divided into two main areas. Firstly, pre-contract work, mostly understood to include: design advice, preliminary cost planning, advising on the cost of design options, analysis and scheduling of work, measuring work to defined standards, preparing cost estimates, preparing tender documents, drafting contracts, assembling frameworks, benchmarking and value management, and mergers and acquisitions' due diligence. Secondly, post-contract work, mostly understood to include: general contractual advice, contract administration, settling capital allowance calculations, alternative dispute resolution (ADR) services, and risk management (Haron and Abdullah, 2006; Jagun, 2006). Recently however, new emergent areas of non-traditional services have also evolved. These include: facilities management, development management, supply chain management, strategic development and portfolio advice, insurance valuations and building surveying, construction law, and construction and project management (Haron and Abdullah, 2006; Jagun, 2006). In New Zealand, the size and capital structure of practices has fluctuated in response to economic conditions; practices are tending toward offering a more professional and diversified range of property based services and general project financial advice (Wilkinson, 1995; Boon, 1996), and have begun to strengthen associations with international organisations (Boon, 2001).

Overall, the literature indicates that the trend away from the traditional technical aspects of quantity surveying toward the newer more innovative and management type functions will continue (Burnside and Westcott, 1999). Specific predictions include: the intensification of global competition (Low and Tan, 2002 citing Buttle, 1996); the expansion of the independent consultancy role (Smith, 2004); the forming of multi-disciplinary practices with other professions; a strengthening and maximising of the use of information, and information communication technology (IT and ICT); the presence of fewer but larger organisations; the continued diversification into related sectors and other nations (Abdullah and Haron, 2007; Goodman and Schaps, 2008), and the continued movement away from traditional procurement (Birnie and Yates, 1996). In New Zealand the move toward becoming the construction industry's professional cost controllers is considered likely to continue (Wilkinson, 1995).

2.2 Imminent threats and opportunities and ways to proactively maximise the opportunities and minimise the threats

The most prevalently documented threats to the undermining of Quantity Surveyor's standing include: an undermining of traditional cost modelling by *advances in IT and ICT* (Cartlidge, 2002; Smith, 2004); the *lack of innovation* and industry resistance to change (Betts and Ofori, 1994; Hardie, Miller, Manley and McFallen, 2005); *incursions by other professions* into services traditionally provided by Quantity Surveyors (Cavill, 1999; Smith, 2004; Davis et al, 2007), also confirmed in New Zealand literature (Wilkinson, 1995); *organisational inflexibility* and the trend toward fewer but larger companies (Cavill, 1999), also confirmed in New Zealand literature (Boon, 2001); the quality of, and demands from, recent graduates (Kelly, 2007) and general *recruitment difficulties* (Cavill, 1999); the changing nature of clients' requirements and expectations (Cartlidge, 2002; Oyegoke, 2006) including the apparent growing dissatisfaction with schedule of quantities-based methods of procurement (Potts, 2004); *fee competition* compromising the level of service offered (Haron and Abdullah, 2006), and; *poor attempts at strategic marketing* of what is sometimes considered a relatively obscure profession (Pheng and Ming, 1997; Smith, 2004).

Overall, the literature tends to suggest that the main opportunities for Quantity Surveyors lie in capitalising on the management type services unique to the profession (Nkado and Meyer, 2001). Opportunities were thought most likely to be realised through: *collaboration in multi-disciplinary teams* (Smith, 2004), seeking out *international ties* with cooperative local partners (Dixon, 1998; Goodman and Schaps, 2008), confirmed in New Zealand literature (Boon, 2001), *diversification into related sectors* including infrastructure development, petro-chemical, marine, manufacturing and transportation (Haron & Abdullah, 2006), *innovative and collaborative procurement and contracting techniques* (Cartlidge, 2002; Potts, 2004), growing promising *non-traditional specialist services* including but not limited to: providing financial and managerial advice (Smith, 2004; Potts, 2004; Davis et al, 2007), environmental consulting (Burnside and Westcott, 1999; Smith 2004), and alternative dispute resolution services, (Burnside and Westcott, 1999), enhanced *IT and ICT* to enable the offering of a better service (Smith 2004; Tse and Wong, 2004), developing comprehensive *knowledge management systems* (Anago, 2006; Haron & Abdullah, 2006; Davis et al, 2007), and developing a *strategic business structure*; designed to have a flexible cost structure and productive capacity (Boon, 1996; Verster, 2004).

3.0 RESEARCH

3.1 Research method

The descriptive survey method was employed for the gathering of primary data in this study in line with Shields and Tajali's (2006) recommendations. Initially, a literature review was undertaken to yield the secondary data for the study. A conceptual framework was developed from the findings in the literature which enabled the creation of a classification system of quantity surveying tasks and informed the structure of the survey questionnaire. Pilot questionnaires were distributed to a key group of respondents for feedback and the questionnaire design was altered accordingly. The final questionnaire was then distributed. The NZIQS electronic database provided the sampling frame for the study. Links to where the self-administered questionnaires were hosted on institute websites were distributed by email correspondence by the institute. Responses were analysed using content analysis, multi attribute analysis and rank correlation analysis.

3.2 Method of data analysis

Content analysis, descriptive statistics, multi-attribute techniques and rank correlation tests were used at a basic level in the analysis of the data. As the dependant variable data was gathered in ordinal Likert scales the coding and analysis of the data was relatively straightforward. Surveys results were directly inputted into a raw data capture spreadsheet, then, once this was complete, simple coding was carried out and mean values calculated.

Nominal data was further analysed by ranking in terms of lowest to highest mean value. Inferences could then be drawn between individual variables as to relative frequency or importance. Comparisons were also able to be drawn between the relative frequencies of current and future task areas.

4.0 FINDINGS

4.1 Survey responses

The 913 possible respondents in the NZIQS target population and sampling frame, only 79 (8.7%) responses were returned. Whilst this is a very low number, low response rates are common with self-administered questionnaires; response rates of more than 30% are considered unlikely. Past surveys distributed amongst NZIQS members normally yielded between 2% and 5%, however, up to 20% response rate has been achieved. The generalised demographic of the survey's respondents was a relatively well educated group of senior respondents with a high level of both quantity surveying and overall property industry experience. All returned questionnaires were evaluated and found to be useable and therefore included in the study.

4.2 Current practice

The results show that the five most popular services performed by Quantity Surveyors (in descending order) are: 1) contract administration carried out on behalf of the client, 2) project budgeting and cash flow forecasting, 3) cost planning and cost control estimating during all stages of a development, 4) pre-contract representation of the client in traditional lump sum type bid procurement, and 5) contract advisory services (see also Table 1). Three of the above five functions are what were described in the survey as *procurement, tendering and contract administration* functions. The remaining two, numbers 2 and 3, are generally considered cost management or cost advisory functions. Conversely, the services least frequently undertaken (in ascending order) at present are: 1) facility management services, 2) asset management services, 3) property management services, 4) depreciations schedules, expenditure statements and the like for taxation and account purposes, and 5) an equal tie between: a) acting as mediator, arbitrator or adjudicator to a dispute, b) life cycle costing including the undertaking of life cycle cost plans, discounted cash flows (DCF), and sensitivity analyses, and c) the preparation of specifications.

The results of the NZIQS sample show that New Zealand Quantity Surveyors are most likely to undertake services belonging to the pre and post-contract cost consulting category which all five of the most popular services undertaken belong to. Burnside and Westcott (1999) classify the areas of pre and post-contract work as traditional services. The fourth most frequently undertaken function - post contract client services based on traditional lump sum type procurement - relies heavily on the preparation of SOQs, which suggests that in New Zealand, the SOQ and traditional procurement remain a popular method of construction contracting. This is consistent with some recent UK surveys (Potts, 2004) which indicate that the uptake of enlightened procurement strategies utilising sophisticated project planning and control techniques are limited mainly to a few large contractors and consultants.

On the other hand, the services considered to be performed least often are what were referred to in the literature as property based management advisory services (Anago, 2006; Davis et al, 2007). These are followed by an alternative dispute resolution (ADR) service, a financial advisory service, and a pre-contract service. The literature described a distinct trend away from the traditional technical services towards the more professional managerial services. The results of this study, however, show that the newer professional managerial services are currently carried out at low to mid frequency. At present, traditional services continue to dominate.

4.3 Future directions and key growth areas

The literature, both internationally (Haron and Abdullah, 2006), and in New Zealand (Wilkinson 1995) speaks at length about the continuing trend away from the traditional technical aspects of quantity surveying toward the newer more innovative and management type functions. Surprisingly then, the functions viewed by the NZIQS sample group to be carried out with high frequency at present, were identical to those viewed likely to be carried out with high frequency in the future, albeit with the addition of *construction advisory services* in fifth equal place. Similarly, the five services likely to be performed with least frequency in the future remain largely unchanged (see also Table 1). The study results indicate that New Zealand Quantity Surveyors are somewhat reluctant to make any major changes to the composition of the services they undertake, in terms of ranking. This finding appears to contradict the claim by the RICS Education Task Force Report 1999 which asserted that traditional quantity surveying work may not exist for much longer (Burnside & Westcott, 1999).

Notwithstanding the above, closer inspection shows that certain services are likely to experience more significant growth than others. These growth rates are displayed as percentages in Table 1. What is immediately obvious is the distinct lack of negative growth, or recession, in any one area. The key areas of high growth (in descending order) are: the advising on the feasibility and cost impacts of ESD initiatives, forecasting 63% growth; life cycle costing which includes cost plans, and DCF and sensitivity analyses, forecasting 45% growth; acting as mediator, arbitrator, or adjudicator to a dispute, forecasting 40% growth; asset management services, forecasting 34% growth, and; facilities management services, forecasting 33% growth. This implies that despite the fact that the overall ranking of the main quantity surveying services is unlikely to change much, certain new specialist area services, in particular alternative dispute resolution and managerial property industry services are likely to grow.

Whilst the identified trend away from the traditional SOQ procurement system toward design-build type procurement has been predicted (Birnie and Yates, 1996) to continue, this study found that the preparation of tender bids based on alternative procurement was expected to experience only modest yet stable growth. It is noteworthy that this was not met with a corresponding decline in traditional tendering methods based on the SOQ. This is consistent with Page, Pearson and Pryke (2001) who observed significant service innovations were likely to occur whilst traditional quantity surveying skills would be retained. Of some surprise was the relatively modest growth forecast (29%) for VM services which features strongly in the literature as a likely growth area although Hogg (1999) observed that, despite widespread acclaim, many leading practices report very low uptake level of VM. A further point of interest in the results is the distinct lack of reduction in frequency with which any single service is offered. A possible interpretation of this is that Quantity Surveyors are optimistic about the future, predicting a wholesale increase in the demand for their services, which is not inconsistent with Smith's (2004) observations in Australia that the independent consultancy role of the Quantity Surveyor will expand to become one of the key functions in the construction industry in 10 years time.

Overall, the literature indicates that the trend away from the traditional technical aspects of quantity surveying toward the newer more innovative and management type functions will continue. The findings of this study however, indicate that New Zealand Quantity Surveyors are of the belief that the demand for traditional services will be maintained concurrent to the growth of a number of non-traditional services.

4.4 Threats, opportunities and responses

All the potential threats to the future of quantity surveying listed in the survey were perceived as having a likely level of impact in the mid third; i.e. between 3 and 5 on a seven-point rating scale (see Figure 1).

Of least concern to respondents were: the inroads made by other professions competing for Quantity Surveyors' market share, and the undermining of technical services due to the development of computer aided drafting (CAD) and the automated generation of schedules of quantities.

The lack of fear for CAD advancements may be explained by either the belief that the greater threat actually lies in not embracing CAD measurement (Betts, 1991) or alternatively because enlightened practitioners believe that the integration problems are so prohibitive, that CAD is unlikely to advance far enough to substantially threaten the Quantity Surveyor's measurement role (Betts, 1991; Tse & Wong, 2004). The lack of concern for inroads made by other professions providing substantially similar services is surprising as the international literature indicated that practitioners have found their position in the marketplace to be significantly undermined by rival professionals such as accountants and management consultants (Cavill, 1999; Davis et al, 2007).

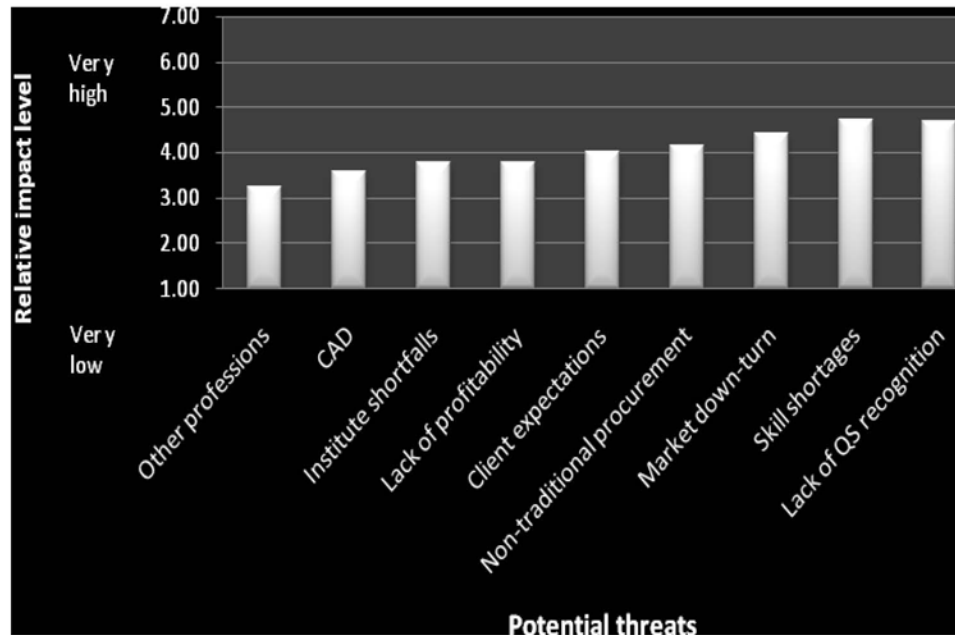


Figure 1: NZQIS perceived threats to the future of quantity surveying

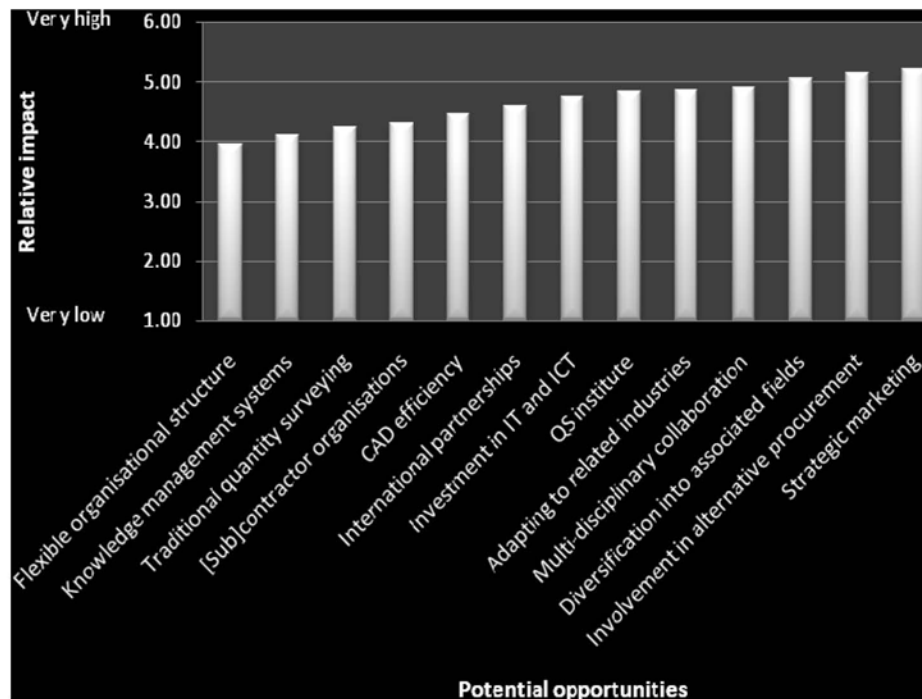


Figure 2: NZQIS perceived opportunities for the future of quantity surveying

Of greatest concern was the lack of recognition for what a Quantity Surveyor is. This comes as some surprise as it is not a theme that enjoys much discussion in the literature. This may be because quantity surveying is better established in other countries than it is in New Zealand. This would be consistent with the findings of Smith (2004) who noted that quantity surveying is regarded as a relatively obscure profession in Australia, with many practitioners feeling that the profession was poorly marketed. The second highest likely threat was the perceived shortage of suitably skilled, qualified, experienced or otherwise competent Quantity Surveyors, reportedly also a significant concern in Australia (Kelly, 2007). The third most relevant threat was the potential for downturns in the New Zealand property and construction marketplace. This was not specifically covered in the recent literature, although Boon's (1996) work displayed a strong awareness of economic factors among practitioners. The results suggest that practitioners are of the view that the current economic crisis will likely entail less demand for their services. The next highest perceived threat identified is the departure in the marketplace from traditional procurement methods involving schedules of quantities. This is in spite of the fact that the likely fourth most frequently undertaken future service is the pre-contract representation of the client in traditional lump sum type bid procurement, possibly including the preparation of a schedule of quantities. Nevertheless, the schedule of quantities is falling out of favour with client and contractor alike (Potts, 2004), presumably New Zealand Quantity Surveyors are aware of this.

The spread of perceptions of the likely effectiveness of various future opportunities is similar to that of the feelings about the threats. The mean spread of the likely impact of potential opportunities begins at 4 on the Likert scale, which represents the half-way mark in terms of effectiveness. These are displayed in Figure 2.

The greatest likely opportunity was found to lie in the undertaking of strategic marketing. This reinforces the finding that one of the greatest threats lays in the 'relative obscurity' of the profession (Smith, 2004). Increased involvement in *alternative* procurement methods was the second greatest perceived area of potential opportunity; this is consistent with Kennedy and Akintoye's (1995) UK research which led them to state that D&B contracting should be perceived as an opportunity rather than a threat to Quantity Surveyors. Diversification into non-traditional specialist areas is one of the main themes in the literature proposed as an opportunity, and the third highest area of potential opportunity in the study. This suggests New Zealand's practitioners are willing to drive innovation as urged by Haron and Abdullah (2006). The fourth highest ranked perceived future opportunity is the collaboration with other experts in multi-disciplinary teams to form cooperative partnerships or consortia providing one-stop consulting services to clients. The next highest ranked opportunity; the adapting and tailoring of existing quantity surveying services to realise opportunities in other industries including petrochemical, marine, manufacturing and transport is a well recognized strategy in the literature (Jagun, 2006). The study identified only medium levels of expectation for opportunities arising from increased involvement in an institute representing the interests of Quantity Surveyors, suggesting that practitioners did not view professional institutes as having the ability to beneficially raise the profile of the profession. The relatively low regard held for the potential for increased efficiencies to technical services through the development of CAD and automatically generated schedules of quantities, suggest that the reason this same development was not considered a major threat was more than likely due to perceived difficulties in its implementation (Tse & Wong, 2004).

The implementing of flexible organisational cost structure and productive capacity, as championed by Boon (1996) and Verster (2004), was considered the least effective strategy or opportunity. This is in spite of the relatively high concern for market downturns, which a flexible structure would allow quick adjustment to. The reasons why are not clear, but the results show that flexible organisational cost structure and productive capacity is not considered a major strategic opportunity. Most surprisingly, perhaps, are the low expectations (second lowest) for opportunities arising from the development and implementation of knowledge management (KM) systems to capture, develop, maintain and employ intangible knowledge assets. The emphasis devoted to KM in the literature is unavoidable (Anago, 2006; Haron and Abdullah, 2006; Davis et al, 2007). A possible explanation for why KM is considered a low impact opportunity is because it is already sufficiently established among New Zealand practitioners.

4.5 Conceptual framework

The conceptual framework underpinning this research is displayed in Figure 3 of the Appendix. It presents the inter-relationship between the current areas of quantity surveying practice and the future directions in terms of the high, medium and low growth areas, based on the interplay of the identified threats and opportunities.

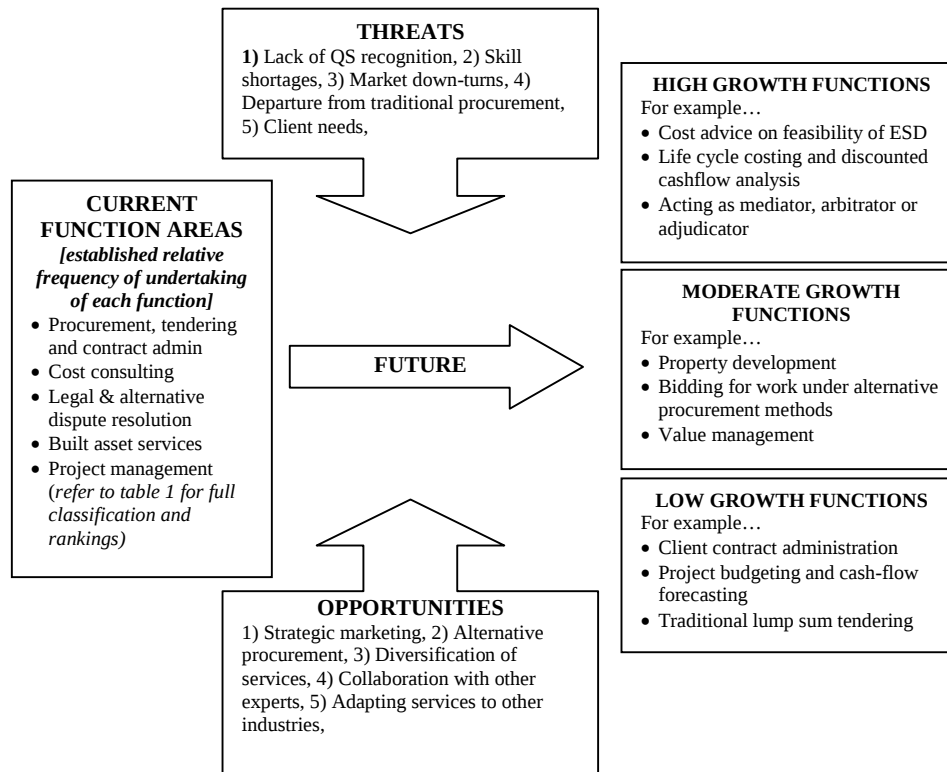


Figure 3: Revised conceptual framework

5. CONCLUSIONS

5.1 Conclusions

This study made the following key findings related to the research objectives: 1) The areas of quantity surveying practice which are currently prevalent in the New Zealand construction industry pertain to pre and post-contract cost consulting services and include (in descending order of prevalence) client contract administration, project budgeting and cash flow forecasting, cost planning and cost control, pre-contract representation of the client in traditional lump sum type bid procurement, and contract advisory services. 2) The functions perceived as likely to be carried out with both high and low frequency in the future are substantially similar to the present. Even though the overall ranking of the relative frequency with which functions are undertaken differed a little, certain functions did experience more significant growth. High growth areas included cost advice on the feasibility of ESD, life cycle costing and discounted cash-flow analysis; acting as mediator, arbitrator or adjudicator to a dispute, asset management services, and facilities management services. 3) The potential threats to quantity surveying practice in New Zealand ranked in order of likely impact included the relative lack of recognition of what a Quantity Surveyor is; the perceived shortage of suitably skilled, qualified, experienced Quantity Surveyors; and the potential for downturns in the New Zealand property and construction marketplace. 4) The likely opportunities for quantity surveying practice in New Zealand ranked in descending order of magnitude included strategic marketing to raise the profile of the profession; increased involvement in *alternative* procurement

methods; diversification into associated areas; collaboration with other experts in multi-disciplinary teams; and adapting and tailoring existing quantity surveying services to realise opportunities in other industries.

A conceptual framework was developed, which presents the inter-relationship between the current areas of quantity surveying practice and the future directions in terms of the high, medium and low growth areas, based on the interplay of the identified threats and opportunities. The framework is recommended for use by Quantity Surveyors in mapping a strategic pathway between the current state of affairs and the desired future growth.

5.2 Implications for Quantity Surveyors

In today's competitive and ever changing business landscape, Quantity Surveyors are increasingly required to remain abreast of changes in the industry in order to remain globally relevant. The developed conceptual framework (Figure 10) categorises the functions of quantity surveying expected to undergo the greatest amount of growth and be of highest demand in the future marketplace. The framework also ranks, by likely relative impact, the potential threats and opportunities to the future of quantity surveying. The NZIQS, tertiary education providers, organisations employing Quantity Surveyors, and individual professionals will each benefit from insights into the likely future directions, threats and opportunities to quantity surveying in New Zealand. Overall, the conceptual framework provides Quantity Surveyors with a tool for mapping a strategic pathway between current practice and desired future directions, and for maximising the identified opportunities and minimising the potential threats.

5.3 Limitations

This study was limited to the views expressed by Quantity Surveyors who were members of the NZIQS. Low response rate, bias, time and resource limitations were the major constraints to the depth and coverage of the study and could have implications on the extent to which the findings could be generalized beyond the sampling frame for the study. However, efforts were made to minimise bias by giving every respondent within the delineated sampling frame equal opportunity to participate and by an extensive review of the literature and pre-testing of the survey questionnaire.

5.4 Further research

Further research is recommended as follows: 1) further testing of the conceptual framework, 2) an exploration of potential avenues (including strategic marketing) for raising awareness of the quantity surveying profession, 3) an exploration of the disconnect between the acclaimed benefits of knowledge management in the literature and the low level of practitioner expectation, 4) an investigation into whether the apparent views held by New Zealand practitioners that their market share will undergo total net increase is likely, among others.

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Table 1: Relative frequency of performance of quantity surveying functions by **NZIQS** sample group - ranked within categories by likely future growth

FUNCTION	Relative frequency of performance		Growth (%)
	1 = Never, 5 = Very frequently		
	Present	Future	
<u>Procurement, tendering and contract administration</u>			
Bid for work on behalf of a [sub]contractor based on <i>alternative</i> procurement techniques (such as managed and cost plus contracts, package deals, turnkey offers and design and build contracts)	2.32	2.88	24.1%
Pre-contract client representation (any of: advise on; prepare tender documentation for, and; analyse, negotiate and adjudicate in) <i>alternative</i> procurement techniques (such as managed and cost plus contracts, package deals, turnkey offers and design and build contracts)	2.87	3.50	22.0%
Preparation of specifications	1.72	2.01	16.9%
Post-contract [sub]contractor representation (any of: prepare, value, claim, negotiate and agree progress claims, variations, scope changes and final accounts with the client/payer)	2.73	3.16	15.8%
Preparation of, and advice on, suitable conditions of contracts and specific conditions	3.13	3.55	13.4%
Pre-contract client representation (any of: advise on; prepare tender documentation for (may include schedules of quantities), and; analyse, negotiate and adjudicate in) <i>traditional</i> lump sum type bid procurement	3.30	3.63	10.0%
Tender for work on behalf of a [sub]contractor based on <i>traditional</i> lump sum type bid procurement (possibly involving a client supplied schedule of quantities)	2.70	2.94	8.9%
Post-contract client/payer representation (any of: prepare, value, negotiate and agree progress claims, variations, scope changes and final accounts with the [sub]contractor)	3.92	4.09	4.3%
<u>Cost consulting</u>			
Advise on the feasibility and cost impacts of environmentally/ ecologically sustainable design/development (ESD) initiatives	2.06	3.36	63.1%
Life cycle costing including life cycle cost plans, discounted cash flow and sensitivity analyses	1.72	2.50	45.3%
Value management; maximising the functional value of a project by facilitation/direct involvement in a thorough examination of all decisions against a client determined value system, carried out from concept stage to completion and commissioning	2.71	3.33	22.9%
Construction advice on the feasibility and cost impacts of alternative materials, construction methods, and site conditions	3.04	3.55	16.8%
Lender services including: review and verification that project budget is adequate to complete project; progress review and monitoring of costs incurred, and; verification of borrower payments	2.67	3.08	15.4%
Cost planning and cost control including feasibility and viability studies and providing estimates during all stages of the development of a project to provide full awareness of financial implications	3.32	3.67	10.5%
Project budgeting and cash-flow forecasting	3.69	3.92	6.2%
<u>Legal/disputes</u>			
Acting as mediator, arbitrator or adjudicator to a dispute	1.72	2.41	40.1%
Providing expert testimony or advocacy services	1.96	2.51	28.1%
Advising on claims preparation or defence	2.13	2.59	21.6%

<u>Built asset services</u>			
Asset management services	1.36	1.82	33.8%
Facility management services	1.32	1.75	32.6%
Property condition evaluations, dilapidation reports and due diligence studies	1.76	2.21	25.6%
Property management services	1.46	1.83	25.3%
Depreciation schedules, expenditure statements and the like for taxation and account purposes	1.64	1.97	20.1%
Replacement cost assessment for insurance valuation purposes	2.04	2.45	20.1%
<u>Project management</u>			
Property development project management services	2.25	2.81	24.9%
Environmental, health and safety risk management services	1.86	2.30	23.7%
Construction planning and scheduling services	2.35	2.73	16.2%
Client representation on project control groups	2.32	2.68	15.5%
Construction project management services	2.58	2.96	14.7%