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THE EGAN REPORT: AN AGENDA FOR CHANGE? THE VIEWS OF UK CONSTRUCTION DIRECTORS

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ABSTRACT
Sir John Egan's report *Rethinking Construction* was published in 1998 and advocated radical change for the UK construction industry. This was particularly so with respect to the way the industry functions and ultimately serves its clients. Based on a structured postal questionnaire survey of UK construction company Directors, their perceived impact, effectiveness and potential 'success' of the Egan recommendations were analysed. The survey revealed that the most successful recommendations (i.e. those with high levels of perceived impact and effectiveness) were considered to be: i) the development of long-term relationships; ii) commitment of leadership; iii) greater customer focus; iv) more and better training; and v) improved quality and fewer defects. Recommendations considered least successful include: i) the use of demonstration projects; ii) re-engineering of existing processes; and iii) the application of products/services from other industries. Respondents were generally in agreement that the Egan report may succeed in achieving its desired intentions of promoting some major industry changes, this being particularly so regarding the nature of relationships between project participants.

KEYWORDS
Egan Report, Construction Industry, Contractors, Directors

1. INTRODUCTION

The UK construction industry is often perceived as being inefficient, unproductive and unable to produce products of quality. Not only is this reputation harmful to the industry's image, it also erodes turnover and profitability through a reluctance of clients to call on the services that the industry can offer. Over the last 50 years or so numerous UK governmental reports have been published; their aim being to promote dramatic improvement in the performance of the construction industry. These reports include Simon (1944), Banwell (1964), the BEDC (1967) and Latham (1994). Sir John Egan's report *'Rethinking Construction'* (1998) represented the most recent attempt by Government to stimulate performance improvement within UK construction.

In this context of the need for change, the aims of this paper are threefold: i) to determine the impact; ii) the effectiveness; and iii) the likely success, of the recommendations made in the Egan report, through opinion survey of a sample of UK construction company Directors.

2. THE EGAN REPORT

'Rethinking Construction' (hereafter referred to as 'the report') was presented to the UK government by the leader of the Construction Task Force, Sir John Egan, on 16th July, 1998. The Task Force comprised a Chairman and nine senior representatives of the industry and its clientele. In producing the report, the Task Force observed a number of industrial sectors including those in manufacturing, the automobile industry and the grocery retailing sectors. The objectives of the Task Force were to:

- quantify the scope for improvement of construction efficiency;
- examine current construction practice and assess the potential for its improvement by way of innovation;
- identify specific actions and good practice which would help achieve more efficient construction; and
- identify projects that might help demonstrate the improvements that can be achieved.

The report described the UK construction industry as being at its best, *'excellent'*, with renowned engineering ingenuity and design flair, capable of delivering the most difficult and innovative projects. However, major weaknesses of the industry were also highlighted, including: its inherent low profitability; inadequate investment in research and development; the current training crisis; and the need for clients to differentiate between cost and value, particularly when selecting constructors and designers.

2.1 Egan's Recommendations

Fifteen principal 'actions' were identified in the report. Since the intention of the Task Force was to develop *a change of style, culture and process*, rather than simply present a series of recommended *mechanistic activities*, the approach adopted in reporting was to deliberately avoid making explicit recommendations. Hence, most 'recommendations' given herein, are the authors' interpretation of the underlying message (having been abbreviated / grouped / abstracted for the practical purposes of this research), while others are extracted verbatim from the report. These recommendations are summarised in Table 1. Recommendations specifically targeting the house-building sector were considered beyond the scope of this research due to their specificity. Most recommendations are referred to on more than one occasion in the report (refer to paragraph numbers given in Table 1).

Table 1: Summary of Egan's Recommendations

Number	Recommendation	Report paragraph number(s)
1.	The commitment of leadership from all parties	17
2.	Greater customer focus	17, 38
3.	Application of products and services from other industries	16, 29
4.	Promote best practice in health and safety	17, 26, 54
5.	Provide decent working conditions and promote people as the construction sectors' greatest asset	17, 53
6.	Measure and assess own performance, set performance targets and share information	21, 23-25, 69
7.	Development of an integrated process instead of reliance on convention	17, 30, 34-37
8.	Improved quality and fewer defects	17, 26
9.	Use of demonstration projects to develop and illustrate innovations	82-83
10.	Rethinking (i.e. reengineering) the construction process	30
11.	Adopt lean thinking as a method of sustaining performance improvement	26, 50
12.	More and better training	17, 55
13.	Development of technology, e.g. standardisation and prefabrication	12, 60-64
14.	Development of long-term relationships	12, 45, 67-72
15.	Greater use of performance improvement tools and techniques (e.g. value management; benchmarking, etc)	12

Having presented the salient messages of the report, the research survey is now described. The survey ascertained construction company Directors' perceived impact and effectiveness of the report's principal recommendations (i.e. as presented in Table 1).

3. THE SURVEY

The Managing Directors of 100 UK contractors listed in the CIOB Directory Handbook (1998), whom had also attained Quality Assurance accreditation were targeted. The rationale here was to survey companies whom had achieved both these positive attributes (i.e. chartered building company status and formal quality indicators). From this sample, 49 completed questionnaires were returned. This was a healthy response rate (49%) being in excess of what is normally expected of an unsolicited survey (circa 25%) and providing adequate data for a robust analysis.

The questionnaire first asked respondents of their personal details (e.g. age and experience) and their company's characteristics (e.g. type of work performed, size of company). Levels of awareness of the Egan report were enquired of, followed by perceived impact (ranging from none to high impact), and effectiveness (ranging from ineffective to highly effective) of the 15 recommendations (Table 1). Such perceptions were measured on a five-point Likert scale (where 1 = none / ineffective and 5 = high / highly effective). The rationale underpinning the use of Likert scales in measuring perception in such surveys, may be observed in Holt (1997).

3.1 Characteristics of the Respondent Sample

More than 80 per cent of respondents held in excess of 20 years' construction experience, with over 70 per cent Directing construction firms that had been in business for over 20 years. The size of these firms (in terms of annual turnover) varied; with 39, 37 and 24 per cent of the respondent sample representing small (less than £5 milllion), medium (£5 million to £50 million) and large (more than £50 million) companies respectively. Hence, those perceptions measured may be considered as being of highly experienced Managing Directors of mature construction companies, of varying size, being located throughout the UK. Thirty respondents (61 per cent) were aware of the main aspects covered in the report, nine (18 per cent) had read and were said to be fully conversant with the report, and seven (14 per cent) admitted only limited knowledge of it. Three respondents (6 per cent) had not heard of the report. These statistics suggested a high level of awareness of the Egan report, throughout the industry at Director level.

4. RESULTS OF DATA ANALYSIS

The product of mean scores derived in respect of both impact and effectiveness (via the aggregated sample responses to the Likert scales), were used as an indication of the likely success of the recommendations. The basis of this assertion being that those recommendations with high impact scores and high effectiveness scores are more likely to be successful, i.e. achieve their desired outcome. Now follows presentation of these results.

4.1 Impact of the Recommendations

In this context, the term 'impact' refers to Directors' perceived *potential* effectiveness of the recommendations on the construction industry. Table 2 provides the results of perceived impact scores. A maximum possible sum score would be achieved where all respondents indicated a score of five (i.e. high impact), providing a total impact value of 245 (i.e. 49 multiplied by 5). This sum was then converted to a percentage to represent a more meaningful 'relative' impact via: [score achieved / 245] x 100.

By some significant margin, the highest ranked recommendation was the *development of long-term relationships* (78%), followed by the *commitment of leadership from all parties* (72%). With relative impact values of 70 per cent, *greater customer focus* and *more and better training* were ranked third and fourth respectfully. Recommendations considered as having a moderate impact, in descending order were: *rethink the construction process* (58%); *adopt lean thinking* (58%); *measure and assess performance* (58%); *development of technology* (56%); *use of demonstration projects* (53%); and *the application of products and services from other industries* (51%).
These results indicate that the development of long-term relationships are likely to have a significant impact on the way that the industry operates and, that construction company Directors believe that the commitment of leadership and a more customer oriented approach, would result in positive changes.

Table 2: Perceived Impact of Recommendations

No.	Recommendation summary	Min.	Max.	Sum	Mean	%	Rank
14.	Long term relationships	1.00	5.00	192	4.00	78	1
1.	Commitment of leadership	1.00	5.00	176	3.67	72	2
2.	Greater customer focus	1.00	5.00	172	3.58	70	3
12.	More and better training	2.00	5.00	172	3.58	70	4
5.	Working conditions & promote people	1.00	5.00	160	3.33	65	5
8.	Improved quality and fewer defects	1.00	5.00	156	3.25	64	6
15.	Performance improvement tools	1.00	5.00	155	3.23	63	7
4.	Promote health and safety	1.00	5.00	152	3.17	62	8
7.	Development of an integrated process	1.00	5.00	145	3.02	59	9
10.	Rethink the construction process	1.00	5.00	143	2.98	58	10
11.	Adopt lean thinking	1.00	5.00	141	2.94	58	11
6.	Measure & assess performance	1.00	5.00	141	2.94	58	12
13.	Development of technology	1.00	5.00	138	2.88	56	13
9.	Use of demonstration projects	1.00	5.00	130	2.71	53	14
3.	Application of products & services	1.00	5.00	125	2.60	51	15

Company size

Using the Kruskal-Wallis non-parametric analysis of variance (ANOVA) test, the perceived impact of the recommendations was aggregated against the classifications of company size to reveal any significant differences in opinion among the groupings. Three categories of firm size (small, medium and large) were considered (categorisation of size as described in the preceding section).

ANOVA revealed four recommendations to have significantly different levels of impact when compared in this way (Table 3). On closer inspection of these recommendations, it was found that the responses from larger company Directors were associated with higher levels of perceived impact. For example, the recommendation *Rethink the construction process*, acquired values for perceived impact of 43, 65 and 74 per cent for small, medium and large sized firms, respectively. Similar results were derived for the three other recommendations identified as being significantly different. Greater implications of these results are considered in the discussion presented later in this paper.

Table 3: ANOVA results for Impact of Recommendations

Grouping Variable	Independent Variable	Chi Square Statistic	Significance (*P value*)
Size of company	Application of products and services	10.675	0.005
	Development of an integrated process	7.563	0.023
	Rethink the construction process	14.044	0.001
	Adopt lean thinking	13.073	0.001

Experience of respondents

Using the same principles as above, ANOVA was applied to investigate for significant difference between the mean responses of perceived impact, using respondents' years of experience in the industry as the grouping variable. In this respect, no significant differences of opinion were revealed.

4.2 Effectiveness of the Recommendations

Here, the term 'effectiveness' refers to how well the recommendations were perceived as having the potential to achieve their intended purpose, i.e. whether they will dramatically improve the construction industry, or otherwise. Table 4 presents Directors' perceived effectiveness and ranking of these 15 recommendations. There is a significant level of association between these rankings and the rankings for impact presented in Table 2 (Spearmans rho coefficient 0.92, $P \leq 0.01$). Again, the *development of long-term relationships* (88%) and *the commitment of leadership* (86%) are the two highest ranked recommendations. *Improved quality and fewer defects* (82%) were

next, followed by *greater customer focus* (80%) and *more and better training* (80%). The only recommendation considered to have just moderate effectiveness was *application of products and services from other industries* (59%). Hence, the Directors surveyed perceived the remaining recommendations as having the potential to be reasonably effective.

Table 4: Perceived Effectiveness of Recommendations

No.	Recommendation summary	Min.	Max.	Sum	Mean	%	Rank
14.	Long term relationships	2.00	5.00	215	4.39	88	1
1.	Commitment of leadership	1.00	5.00	210	4.29	86	2
8.	Improved quality and fewer defects	2.00	5.00	200	4.08	82	3
2.	Greater customer focus	1.00	5.00	196	4.00	80	4
12.	More and better training	2.00	5.00	195	3.98	80	5
5.	Working conditions & promote people	1.00	5.00	187	3.82	76	6
4.	Promote health and safety	2.00	5.00	178	3.63	73	7
15.	Performance improvement tools	1.00	5.00	176	3.59	72	8
11.	Adopt lean thinking	1.00	5.00	172	3.51	70	9
7.	Development of an integrated process	1.00	5.00	170	3.47	69	10
13.	Development of technology	1.00	5.00	168	3.43	69	11
9.	Use of demonstration projects	1.00	5.00	165	3.37	67	12
6.	Measure & assess performance	1.00	5.00	161	3.29	66	13
10.	Rethink the construction process	1.00	5.00	157	3.20	64	14
3.	Application of products & services	1.00	5.00	144	2.94	59	15

Company size

Using the Kruskal-Wallis non-parametric ANOVA test as earlier described, the perceived effectiveness of the recommendations was compared in terms of responses grouped by company size.

ANOVA revealed five recommendations to have significantly different levels of perceived effectiveness when aggregated in this way (Table 5). Closer inspection of these five recommendations revealed a similar relationship to that found between company size and perceived impact. For example, the recommendation *Use of demonstration projects*, acquired values for perceived effectiveness of 56, 69 and 78 per cent for small, medium and large sized firms, respectively. Similar results were derived for the four other recommendations identified as being significantly different. That is, higher levels of perceived effectiveness were associated with the Directors of larger sized companies. Clearly, greater optimism concerning Egan is associated with larger contractors and greater pessimism with smaller sized contractors.

Table 5: ANOVA results for Effectiveness of Recommendations

Grouping Variable	Independent Variable	Chi Square Statistic	Significance (*P value*)
Size of company	Measure & assess performance	10.561	0.005
	Development of an integrated process	12.146	0.002
	Use of demonstration projects	9.652	0.008
	Adopt lean thinking	6.823	0.033
	Performance improvement tools	6.303	0.043
Experience of respondent	More and better training	13.158	0.011

Experience of respondents

ANOVA was applied to investigate for significant difference in perceived effectiveness based on years' construction experience of respondents. Here, significant results were found for one recommendation only (Table 5). While acknowledging the bias of the sample towards respondents with more than 20 years' construction experience, these results indicate that Directors' with less experience consider training to be less effective than respondents with more than 20 years experience.

4.3 Perceived Potential for Success of the Recommendations

By multiplying the impact and effectiveness scores attributed to each of the factors by respondents, an indication of the likely 'successfulness' of the recommendations was obtained (Table 6). That is, recommendations achieving both high impact *and* high effectiveness are more likely to be successful, i.e. will cause beneficial changes to the industry (and vice-versa). A maximum possible sum score would be the product of all respondents indicating scores of five for both impact and effectiveness, providing a sum total of 1225 (i.e. 49 multiplied by 25). To facilitate more meaningful results, these sum scores were converted to percentage values, representing a 'relative' success rating for each recommendation.

Table 6: Success of Recommendations

No.	Recommendation summary	Min.	Max.	Sum	Mean	%	Rank
14.	Long term relationships	4.00	25.00	854	17.79	70	1
1.	Commitment of leadership	4.00	25.00	761	15.85	62	2
2.	Greater customer focus	3.00	25.00	707	14.73	58	3
12.	More and better training	4.00	25.00	705	14.69	58	4
8.	Improved quality and fewer defects	2.00	25.00	661	13.77	54	5
5.	Working conditions & promote people	2.00	25.00	626	13.04	51	6
15.	Performance improvement tools	1.00	25.00	574	11.96	47	7
4.	Promote health and safety	2.00	25.00	572	11.92	47	8
7.	Development of an integrated process	1.00	25.00	528	11.00	43	9
11.	Adopt lean thinking	1.00	25.00	514	10.71	42	10
13.	Development of technology	1.00	25.00	506	10.54	41	11
6.	Measure & assess performance	1.00	25.00	493	10.27	40	12
9.	Use of demonstration projects	1.00	25.00	471	9.81	38	13
10.	Rethink the construction process	1.00	25.00	468	9.75	38	14
3.	Application of products & services	2.00	25.00	391	8.15	32	15

The *development of long-term relationships* was considered the most potentially successful of Egan's recommendations (70%). This was followed by the *commitment of leadership* (62%) and then *greater customer focus* and *more and better training* (both 58%). Only two other recommendations achieve success ratings over 50%, these being, *improved quality and fewer defects* (54%) and *working conditions and promote people* (51%). Three recommendations were considered to have reasonably low success ratings (i.e. below 40%), these being *the use of demonstration projects, rethink the construction process* and *application of products and services from other industries*.

Company size

Significant results of an ANOVA test using company size as the grouping variable and perceived success of the recommendations, are presented in Table 7. Seven (of the 15) recommendations were found to have significantly different levels of effectiveness when aggregated in this way. Closer inspection revealed similar tendencies as for perceived impact and effectiveness. That is, the Directors of larger sized companies considered the Egan recommendations to be potentially more successful.

5. DISCUSSION

As intended by the report, these findings indicate a potential shift in the culture and style of the construction industry, albeit such is mirrored mainly in larger contractor companies and much less so in smaller companies. The most significant of these changes appears to be in the nature of project relationships. The industry has long been criticised for engendering adversarial relationships among project participants. Indeed, good working relationships are rarely found (Smith et al, 1998). Causes of this inherent adversarialism include a reliance on the traditional procurement route, and the individual and often conflicting agenda of each participant in the construction process (Gardiner and Simmons, 1992; Cyert and March, 1992; Sanvido et al, 1992; Naoum, 1995).

Table 7: ANOVA Results for Success of Recommendations

Grouping Variable	Independent Variable	Chi Square Statistic	Significance (*P value*)
Size of company	Application of products and services	9.456	0.009
	Measure & assess performance	7.483	0.024
	Development of an integrated process	12.424	0.002
	Use of demonstration projects	7.966	0.019
	Rethink the construction process	15.301	0.000
	Adopt lean thinking	11.928	0.003
	Performance improvement tools	5.975	0.050

Close co-ordination and good working relationships among project participants, as fostered by partnering (Holt and Fraser, 1999), are known to be pre-requisites to project success (Baker et al, 1988). Moreover, project performance can be enhanced by a high degree of co-operation between participants (Smith and Wilkins, 1996). However, the report called for the industry to go beyond partnering and to develop long-term alliances involving all project participants in the process. Such strategic alliances facilitate knowledge transfer (i.e. learning), and have been shown to enhance co-operation, trust and commitment (Holt at al, 1999). Indeed, learning has been described as the *'fundamental ingredient in strategic alliances'* (Bronder and Pritzl, 1992). Strategic alliances have been found to reduce project costs (Ketelholm, 1993), and facilitate sustainable competitive advantage for organisations (Porter, 1985; Hampson and Kwok, 1996). Hence, in the opinion of UK construction Directors, the industry could be set to undergo a major cultural change in terms of the relationships between participants (service providers and clients). Were this to happen, it has the potential for achieving industry-wide performance improvement.

Generally, the Directors of larger companies were found to have correspondingly stronger perceptions (i.e. regarding impact, effectiveness and success) of Egan's recommendations than their counterparts from smaller sized firms. This is a matter for concern, since the implication that Egan's recommendations have (to some extent) failed to inspire the confidence of such smaller companies (i.e. those representing a greater proportion of the UK contractor population) is a serious one. Notwithstanding this, the Construction Task Force, being representatives of major clients themselves, make it clear that they are calling on the larger, more experienced organisations to champion the report's recommendations. After all, those radical changes called for in the report require the support of major construction organisations, before they can be widely accepted throughout the industry. That is, there is likely to be a period in which any performance improvement measures are first applied and refined by larger firms (i.e. those with greater resources). Small and medium sized organisations (with less resources) are likely to delay implementation of the recommendations until positive evidence of their success / benefit becomes apparent.

6. SUMMARY

Following a review of the report *Rethinking Construction*, fifteen construction industry recommendations were identified. A survey of UK construction company Directors was administered to gauge the potential impact and effectiveness of these recommendations. Subsequent rankings of the recommendations based on survey response were found to be significantly correlated. This suggesting that those recommendations considered as having high levels of potential impact were also considered having high levels of effectiveness. The *development of long-term relationships* and *commitment of leadership* were ranked first and second respectively. *Greater customer focus* was ranked third for perceived impact, compared to *improved quality and fewer defects* for effectiveness. Other recommendations rated highly included *more and better training* and *working conditions and promote people*.

Subsequently, respective scores attributed to the impact and effectiveness of these recommendations were combined to calculate their potential 'successfulness'. In descending order, the three highest ranked recommendations in this context were (i) *development of long-term relationships;* (ii) *commitment of leadership;* and (iii) *greater customer focus.*

Analysis of variance revealed that the Directors of smaller companies had lower expectations for certain recommendations than their counterparts from larger firms. This was considered due to the radical nature of the changes recommended by Egan, which would require companies with greater resources and investment to champion them. This is to some extent, acknowledged within the report, with the Task Force (themselves, representatives of major clients) calling upon major construction organisations and clients to take the lead in implementing the recommendations made.

These findings suggest that the Egan report may indeed succeed in meeting the desired intentions of the Task Force, to develop a change of style, culture and process within the industry. Larger construction firms (in excess of £50m) look set to take a lead in this 'revolution'. It is reasonable to infer that, the UK construction industry looks set to undergo some major changes in the dawn of the new millennium, particularly in terms of the relationships that exist between its participants. Indeed, there is evidence to suggest that this is taking place already (Holt et al, 1999).

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