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## **An integrated emerging contractor development model for the construction industry: practical implementation and statistical quantification**

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### **ABSTRACT**

It is imperative that capacity building and black economic empowerment take place in South Africa at a rapid pace. This requires that, inter alia, strategies be implemented in order to create sustainable construction enterprises from a low base, in the shortest possible time. Many attempts at this have delivered mediocre results in the past, particularly due to such attempts not being structured on the basis of firm standards having been set, tools developed and implemented to continuously measure progress, analyses of results and presentation of it in an easily understandable format that can be quality managed. An empowerment model has thus been created to ensure the rapid development of emerging construction contractors. This model has a sound theoretical base, is supported by extensive field research and has been introduced in practice. The results were continuously measured and presented in statistical and diagrammatic format.

Formal training and mentoring of contractors, as well as total quality management, have been identified as key elements of the model. Role players in the construction industry and the broader business environment that could positively contribute to the development of the contractors were identified and included in the model. The model produced a wealth of knowledge and skills that are now available for utilisation on a broad basis. An important observation is that the model mainly consists out of generic elements that may be adapted in a similar format for utilisation in other industries.

## **KEY WORDS**

**Emerging Construction Contractors, Empowerment, Emerging Contractor Development, Mentoring, Project Management, Training.**

## **1. INTRODUCTION**

An Integrated Emerging Contractor Development Model (IECDM) was created to address the problems experienced in developing self-sustainable construction contractors for the construction industry. The industry suffers from a lack of capacity, whilst previously disadvantaged persons are in need of support to improve their entrepreneurial development, managerial and technical skills, in order to become self-reliant. This model was developed in conjunction with the Eastern Cape Development Corporation (ECDC) and introduced throughout the Eastern Cape Province, South Africa.

The methodology applied entailed that all possible role players/agencies that could contribute to the development/empowerment of emerging construction contractors (EC) were identified and their probable contributions assessed. Cognisance was also taken of all legislative and other initiatives taken by government in order to create an enabling environment for ECs. Numerous attempts by a variety of others were also taken into account and the perceived shortcomings identified and addressed. Accelerated development of ECs generally had little success, mainly due to the fragmented nature of such attempts. The IECDM is a holistic model, integrating all identified possible contributory role players/stakeholders, project managed as a programme, with strong emphases on total quality management (TQM). This paper presents certain relevant legislative government interventions, the model as structured, examples of the quantified and diagrammatic presented data, and close-out stakeholder questionnaires that was compiled in finalising the ECDC programme, followed by conclusions drawn.

## **2. STRUCTURAL INTERVENTIONS**

The following structural interventions have been made by government, and other organs of state, in order to create an "enabling environment" for the rapid development of, inter alia, construction contractors (summarised by Hauptfleisch, 2006:2-3). These interventions were discounted where possible in the development of the IECDM:

## **2.1 Creating an enabling environment: Construction Industry Development Board (CIDB)**

The South African Government has adopted legislation to create an enabling environment. From which flowed the Construction Industry Development Board Act (Act 38 of 2000)

The CIDB mandate that followed from the above legislation is inter alia encapsulated in the following abstract in the Construction Industry Development Board: Annual Report (2004/2005:12):

- Provide strategic direction and develop effective partnerships for growth, reform and improvement of the construction sector;
- Promote sustainable growth of the construction industry and the sustainable participation of the emerging sector.

## **2.2 Broad Based Black Economic Empowerment**

Government initiatives are further supported by the Broad Based Black Economic Empowerment Act (No 53 of 2003) (BBBEE, 2003:2) that is in the implementation phase, that reads as follows: "To establish a legislative framework for the promotion of black economic empowerment; to empower the Minister to issue codes of good practice and to publish transformation charters; to establish the Black Economic Empowerment Advisory Council; and to provide for matters connected therewith."

## **2.3 Construction Education and Training Authority**

The Skills Development Act (Act 97 of 1998) provides for the creation of a Sectoral Education and Training Authority (SETA) for each of the various economic sectors. The Construction Education and Training Authority (CETA) is responsible for the construction industry. A levy, expressed as a % of salaries and wages paid by employers, is placed in a fund that is applied in terms of stated guidelines, to ensure that education and training take place in the industry.

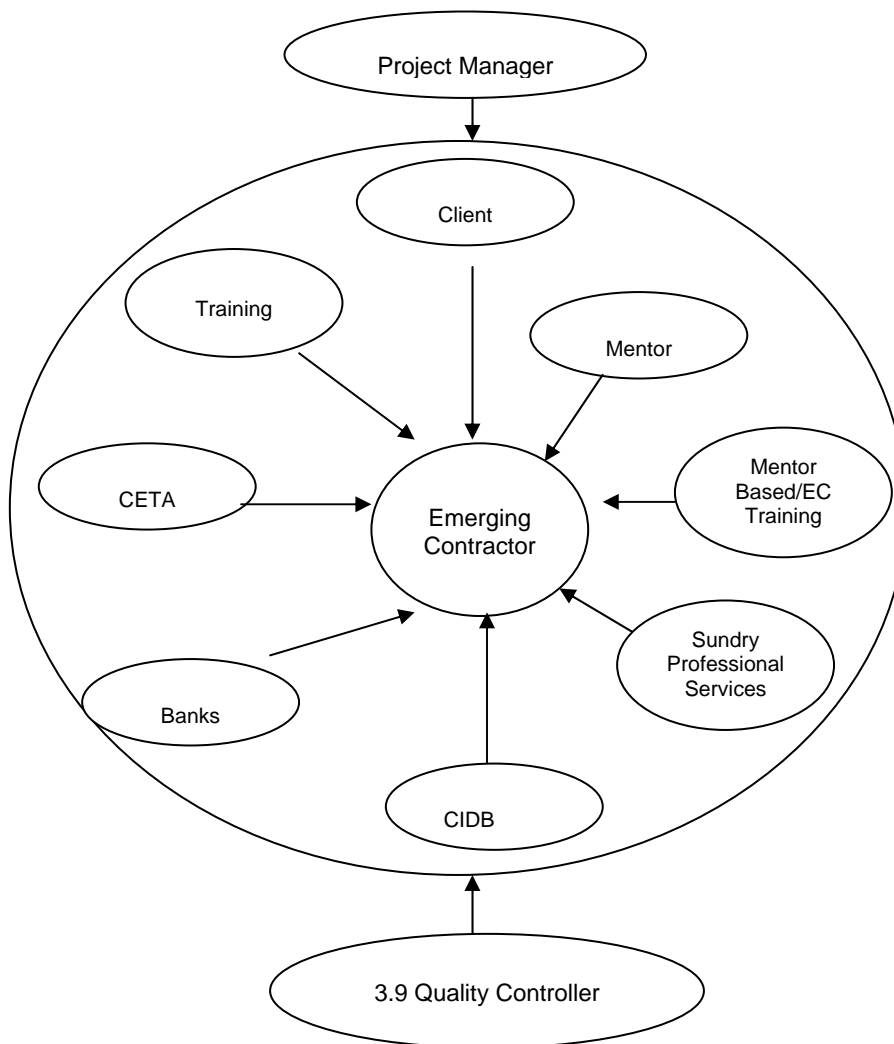
## **3. STRUCTURING OF AN INTEGRATED EMERGING CONTRACTOR DEVELOPMENT MODEL**

The enabling environment that has been created as overviewed above, leaves the construction fraternity with the challenge to create a working model to achieve the stated objectives within the unique demographics of South Africa. The integrated emerging (small) contractor development

model is a serious attempt to put such a working model to the test (Hauptfleisch, 2006:4-8).

Figure 1 below is a diagrammatic presentation of the Integrated Emerging Contractor Development Model (IECDM) that depicts all the identified role players required in order to maximise the development of emerging contractors.

**Figure 1: Integrated Emerging Contractor Development Model**



Source: (Hauptfleisch, 2006:5).

#### **4. SELECTION OF EMERGING CONTRACTORS, MENTORS AND TRAINING SERVICE PROVIDERS (IECDM)**

##### **4.1 Emerging Contractors (EC)**

Emerging Contractors for the programme were selected from applicants who responded to a comprehensive advertising campaign in the Eastern Cape. A good response was obtained and the assessment to identify the most suitable candidates was conducted by the CSIR in terms of the SACEM guidelines. Approximately 60 candidates were advised of their selection, some of which did not take up the offer. Further selection was executed and a final group of 54 was taken on board. The programme was then structured to serve these candidates in the most effective fashion considering their location in the province. The result was that it was decided to launch the programme from five centres, namely East London, Port Elizabeth, Queenstown, Mthatha and Kokstad.

##### **4.2 Mentors**

Mentors for the programme were selected by inviting applications via a province wide advertising campaign. All those who aspired to become mentors on the programme were subjected to the established Mentorship Accreditation Programme of the University of the Free State, at their own cost. If they achieved a certificate of accreditation, and were found suitable during a professional interview, they were appointed as mentors. This accreditation programme is structured to assess if the prospective mentor possesses the necessary knowledge and has the aptitude to practice as a mentor.

##### **4.3 Training Service Providers**

Three training service providers were selected from the CETA database in conjunction with CETA. Two of these were a source of continuous concern and turned out to be the weakest link in the programme, requiring constant management interventions to rectify. The third provider was excellent and maintained a very high standard. All the training providers however failed to create some key competencies with the contractors. The most pertinent was, firstly, to ensure that all the contractors are able to tender and execute cost control during the construction phase of a project and secondly, the contractors did not achieve an acceptable level of financial management ability.

## **5. TOTAL QUALITY MANAGEMENT (TQM): METHODOLOGY AND APPLICATION OF OUTCOMES**

### **5.1 Indabas and TQM Visits**

In order to ensure that the required results were achieved a system of constant contact was put in place. TQM being a cornerstone of the IECDM dictated that the entire development process of the contractors had to be managed constantly. Two activities were introduced to achieve this. Firstly, Indabas were held in every centre, every three months, where all stakeholders were required to be present. The main objectives were to build teams that focussed on results, to provide regular feedback on how the programme was faring, to share information on experiential learning by all and to provide guidance in a unified fashion. Secondly, during the period between Indabas the TQM team visited every mentor, with the contractors assigned to each mentor, in the offices of the mentor or on a construction project of the contractor, in order to monitor the progress of each contractor, to evaluate the interaction between mentor and contractors, to ensure that actual capacity building was taking place, to agree on corrective measures where deviations from stated objectives occurred and to generally monitor and manage the programme towards achieving the standards set.

### **5.2 Manual for Small Construction Contractors**

CETA sets standards for the training provided by CETA accredited training providers. Each training provider has to, in a rather senseless and wasteful fashion prescribed by CETA, create their own training material, that is not readily available to all stakeholder further distressing weak link in the formal training process of the contractors. To ensure that TQM takes place, clearly defined training standards and training material being used, should be available in a transparent, accessible and generic format. Under those conditions it will fulfil the very important role of being a readily available input during the process of setting standards, to be entrenched in the TQM work required. In order to overcome this weakness, the management team obtained permission from the Building Industries Federation South Africa (BIFSA), now Master Builders South Africa (MBSA), to adapt their Manual for Smaller Builders into a fit for purpose, for the IECDM, MANUAL FOR SMALL CONSTRUCTION CONTRACTORS (MSCC).

### **5.3 Quantified Data: Mentors' Evaluation of Emerging Contractors and Others**

The MSCC was positioned to be a reference standard for the level of competency achieved by the contractors. The indexing of the manual was further used as reference for the monthly assessment made by mentors of each contractor's development level. Each knowledge area (as well as some others) contained in the index was taken up into a ten-point assessment scale that was then assessed on a monthly basis by every mentor for every contractor. This provided the management team with a wealth of sensors (45) relating to every aspect of each contractor's individual development. An effective progress measurement tool was thus created. The results obtained were translated into statistical data for each contractor, combined for every region and for the IECDM as a whole. The statistical data was then processed further through a computer programme, specifically designed by the CSIR for the IECDM, and presented in easily understandable diagrammatic presentations. These presentations were extensively used throughout the programme as communication tools and to identify strong points and weaknesses in the programme. An important element of this application was that it was readily possible to make comparative analyses of the programme's progress in each region and for each and every role player.

This is the first time in South Africa that comprehensive, manageable data was created as part of an emerging contractor development strategy.

### **5.4 Quantified Data: Emerging Contractors' Evaluation of Mentors and Others**

The emerging contractors were also afforded the opportunity to evaluate the mentors and other role players on the programme. Their feedback, reflecting the actual experience of the beneficiaries of the programme, was very valuable as TQM input and provided very specific insights that were also used to assist with the management of the programme. It created an orderly platform for the contractors to put forward experiences and outcomes. Of particular value was information obtained regarding interventions, which may not have been solvable in the IECDM as structured. It also provides important guidelines for future programmes.

### **5.5 Management Development Programme**

After approximately twelve months it became evident from the feedback obtained that the formal training component presented by the training service providers was not going to be sufficient to create self-sustainable

contractors. The actual deficiencies that existed were in no way revealed by the CETA procedures regarding the assessment of contractors.

Having clearly established these shortcomings, the management team introduced a further development tool that was named the Management Development Programme (MDP). The MDP was structured in the format of a simple bar chart for the remainder of the IECDM programme. The underlying principle was to place each item contained in the MSCC on a bar chart, where after each contractor's proficiency was evaluated regarding each specific knowledge area in the MSCC.

## **5.6 Descriptive Qualitative Surveys and Application**

The following were the most pertinent in this regard:

- Mentors were afforded the opportunity to provide written comment on each quantified item (ten point scale) of the evaluations that they made monthly regarding each contractor.
- Similarly contractors were afforded the same opportunity in the evaluations that they made each month to provide written comment regarding each quantified item (ten point scale) in the evaluation.
- The TQM consultants provided written reports after every series of TQM visits. Their reports did not contain a quantified component as it was regarded superfluous. It was structured in the fashion of minutes of meetings, but very pertinently containing guidelines for managerial team action to be taken.

## **6. CONSTRUCTION EDUCATION AND TRAINING AUTHORITY (CETA)**

### **6.1 The Role of CETA**

As the statutory body responsible for training in the construction industry, it was obvious that CETA participation should be sought in the IECDM. It was agreed with CETA that the contractors on the IECDM would be accepted for training in order to earn a qualification, deviating from the normal tripartite agreement involving the contractor, a training provider and an employer. In this instance the ECDC was accepted as fulfilling the role of the employer, supported by the mentorship intervention. The Learnership that was selected for the IECDM is the NQF Level 2, Construction Contractor Learnership. The IECDM was consequently structured to factor in all the CETA requirements, including CETA quality assurance and assessment procedures. Having accepted this structure as definitive, the project team regarded the training component as a given and self-



regulating. A matter of concern, however, was the initial limited managerial control that the management team had over the training service providers.

## **7. QUANTATIVE DATA: CSIR DIAGRAMMATIC PRESENTATION AND COMMENTS**

All the quantitative data generated during the programme (as discussed above) was submitted to the CSIR for processing. This element of the TQM process is unique and the first of its kind applied in order to continuously track, assess and manage programme outcomes when embarking on the accelerated development of beneficiaries in a learn and earn environment. The most important outcome of the CSIR Report is that it conclusively shows that it is possible to set standards for all aspects of a development programme, measure the outcomes, assess deviations and take corrective steps, based on the measured outcomes, during the life of a programme. One example of a diagrammatic presentation with comments are shown below as Figure 2. (CSIR Final Close-Out Report, 2007:1-22). It is to be noted that this example is typical of the programme as a whole. It is the culmination of the application of 45 sensors regarding each contractor's progress, measured on a monthly basis.

Further studies were undertaken, following the official completion of the programme at the end of November 2006, in order to obtain a final perspective from the participants, dealing with aspects not contained in the CSIR Report. This survey (Close-out Stakeholder Questionnaires) is briefly described following Figure 2.

### **7.1 Introduction and background**

This section of the paper documents the overall performance of the Integrated Emerging Contractor Development Model (IECDM) for the period covering July 2005 to October 2006. The recorded data have been scored and ranked as per the criteria set-out in the Table 1 below:

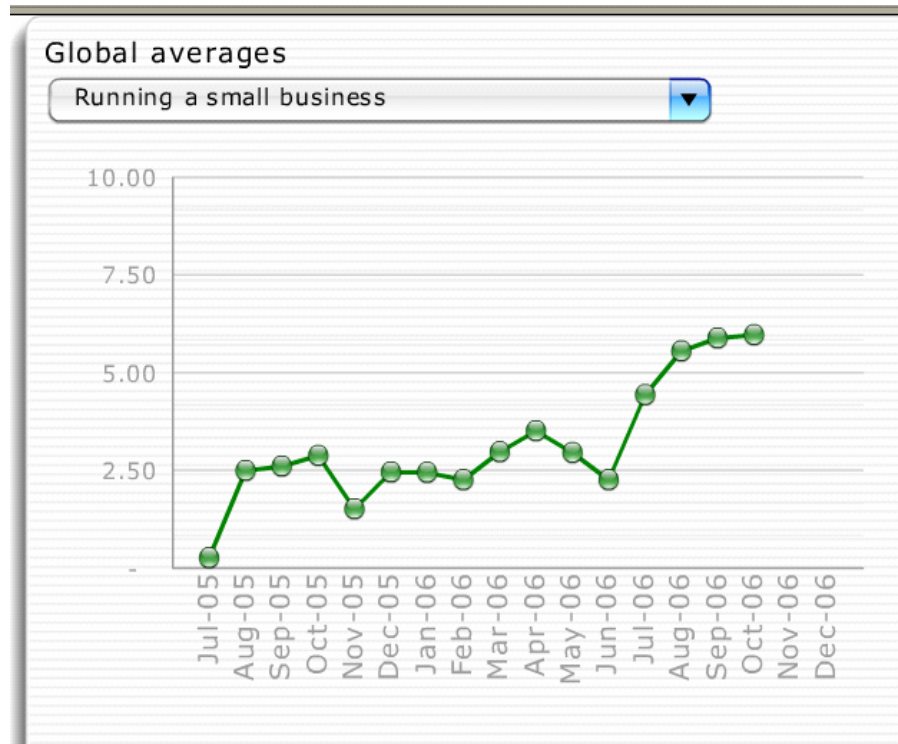
**Table 1: Scoring and Ranking**

Score	Performance
0-20%	Poor performance (contractor is not capable to execute an activity independently)
21-40%	Fair performance
41-60%	Average/good performance (contractor is capable to execute and activity with assistance)
61-80%	Very good performance
81-100%	Excellent performance (contractor is capable to execute activities independently and in a sustainable manner)

From a purely methodology perspective, it is important to note that the data contained in this report represent the *perspectives* of mentors and contractors. The data contained was not tri-angulated. However, the feedback from mentors and contractors, over a large geographical area, consistently confirmed the same trends, supporting the reliability of the data.

## 7.2 Running a Small Business-Global Averages

When viewed across the overall performance for the time under review (see Figure 2), October represents the highest rating for this indicator at 59.7%. When compared to the 24.9% recorded in August 2005 the perception of the performance regarding this indicator has increased by 34% since the inception of the project.

**Figure 2: Running a Small Business – Global Averages**

This represents a substantial increase in the ability of contractors to run a small business. In this regard, the August 2005 rating represented a “fair” performance which has increased through the intervention to an “average to good” performance level. This implies that contractors in general are able to execute related activities with some level of assistance.

The data also seem to indicate a trend in terms of the ability of contractors to absorb knowledge. It would appear that performance increases in cycle of about three months (August-October 2005, February to April 2006). These periods are generally followed by two to three months of declined performance. The declines are generally followed by increased performance which tends to pass previous levels of performance. So, whilst the performance seems to stagnate or reduce for short time periods it does seem to increase to higher levels after about 3 months. This could be an indication of the time it takes contractors to absorb or internalise data or new learning.

## 8. CLOSE-OUT STAKEHOLDER QUESTIONNAIRES

A close out questionnaire was forwarded to all project stakeholders three months after the IECDM programme completion. Two reports were developed. The first report reflects the views of the mentors, whilst the second report reflects the views of the contractors. The purpose with the questionnaires, resulting in two reports, was to evaluate:

- The success of the IECDM as a developmental tool as experienced and reported by all project stakeholders after completion of the programme.
- The benefits derived from the programme as experienced by the emerging contractors in terms of business growth and knowledge gained.
- Inputs required for future IECDM implementation.
- The success/failure of key IECDM elements being TQM, mentorship, CETA Learnership and the Manual for Small Construction Contractors.
- Elements of the model requiring corrective measures or improvement.

## 9. CONCLUSIONS

In order to create an enabling environment for contractor development the IECDM should contain the following elements, which are essential towards sustainable contractor development, following a holistic integrated approach amongst the implementing agents and programme stakeholders:

- The IECDM requires that a local, regional or national body, with sufficient muscle, undertake the programme. Economy of scale is achieved by implementing the comprehensive programme across a region such as a province. Integrated programmes are remarkably cost effective when conducted on a fairly big scale. Typically organisations such as government departments (Department of Public Works and Housing), metros, and development corporations are ideal promoters for the model.
- An important principle of a development programme is recognition that it is a training programme with the objective of creating a sustainable construction business. Training has a price tag and satisfactory results are achieved more effectively and efficiently when programmes have the necessary financial resources and the full commitment of all stakeholders.

- The programme has to be rigorously managed. This requires that a competent project manager and management team be appointed to manage the programme on a day-to-day basis.
- All elements of the programme have to be quality assured and managed each step of the way so that corrective action is taken in time.
- Selection criteria should be further developed and applied to identify and select suitable contractors who will enter the programme.
- All participating contractors have to undergo a CETA accredited Learnership such as the NQF Level 2: Construction Contractor.
- The IECDM is mentor-based and the appointment of an accredited mentor (based on construction knowledge and aptitude) is central to the success of the programme.
- Contractors are developed successfully when they have continuous construction work. If possible, contractors on the programme should be provided with term contracts for a minimum period of 24 months.
- Financial packages should be obtained from financial institutions that are committed to the programme and the development of contractors.
- The IECDM consists mainly of generic components that are adaptable to other industries where it could be used beneficially.

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