

## **A Case for Acceleration rather than Extension of time on Construction projects in Uganda**

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### **Abstract.**

The Construction industry in Uganda is one of the fast growing industries in the Economy due to the increased volumes of investment in the country. However like in many other construction industries world wide, the industry faces the problem of delay in completion of projects. In most cases the clients are the losers as the extension of time awarded to contractors attracts extra preliminaries and as a result increase of the final Contract sum. In this paper the Author using face to face interviews and detailed analysis of data received from project archives presents a case for acceleration of works rather than extending the project contract period. This is supported by the fact that most of the big construction firms in Uganda have the capacity to complete the projects handled in a much shorter time if they see an economic benefit in early completion.

**Keywords:** Acceleration, Extension, Construction, project, Uganda

### **1. Introduction**

One of the major factors in evaluation of the return on an investment is the amount of time it takes to recoup the capital invested in the project. This factor is directly affected by the length of the construction period in other wards the time taken to get the project ready for occupation by tenants. When this time is longer than agreed in the contract, the Client loses revenue that would have been collected during that time. Potential revenue loss is due to delay in completion and hence delayed occupancy by tenants. Several works have been done studying the effect of the time factor on the return on Investment project. This effect can be in various forms. It is vital to note that in most construction industries worldwide especially in Africa, there are no established statutory guidelines for determining the length of a construction period and as such both Consultants and Contractors determine that time depending on their past experience on similar projects. Usually clients particularly on private construction projects set the time frame in which they would like to have their projects ready for occupancy usually taking into account such factors like grace period given for servicing of a loan. However, most times issues like the complexity of the works, the capacity of the contractor are not fully considered.

### **2. Literature Review on delays on construction projects.**

Delays in completion of projects are a major problem that commonly faces parties involved in construction and Engineering projects.[12] Not only do they result in significant financial losses to Contractors such as additional over head expenses incurred beyond those originally contemplated for the project; they also expose Clients to serious financial and economic risks such as high interest rates and loss of market opportunities. Project delays are generally the result of multiple causes from multiple parties such as Contractor, Client, Consultant, Supplies etc, which factor makes the task of justifying and qualifying the effect of individual item of delay events on project duration an extremely difficult task. Much of the research effort directed towards resolving this difficulty has focused on addressing a number of issues such as; Concurrent delays [3,6,9,11]; the migration of the critical path [1,5]; acceleration [2]; ownership of float [1]; productivity losses [10] and resources allocation [7].

According to Mustafa and Bingunath (2003;349) [2] Governments, industry and clients want to bring about change in the Construction industry in order to meet mechanisms of improving quality, competences and profitability there by increasing the value to clients and other stake holders. Kaming, Olomolarye, Holt and Hams (1997;830) [8] state that inflationary increases in material cost, inaccurate material estimation and project complexity are the main causes of cost over runs. The predominant causes of delays are: design changes, poor labor productivity and inadequate planning. Normally when projects are delayed, they are either extended or accelerated and therefore, incur additional cost. The normal practices usually allow a percentage of the project cost as a contingency allowance in the contract price and this allowance is usually based on judgment. Ahmed [10] maintains that delays on construction projects are a universal phenomena. They are almost always accompanied by cost and time over runs. Construction project delays often result in adversarial relationships between construction stake holders. Delays also lead to disputes, litigation, arbitration, cash flow problems and a general feeling of apprehension towards each other. Delay is generally acknowledged as the most common costly, complex and risky problem encountered in Construction project. It is there fore, the source of frequent disputes and claims leading to law suits.

### **3. Methodology Used**

One of the major criteria for selecting the appropriate research strategy in any study is the nature of the research problem or the objectives of the study [4, 13]. The objectives of the authors' current research were to find out the factors that lead to delay of projects in Uganda; rank them according to the importance and then obtain a basis for a case for acceleration rather than extension of time. The research strategy employed were surveys and analysis of architectural records and case studies particularly on those projects where the author worked a resident architect. Among the various methods of conducting surveys (sending questionnaires out by post, fax and email, face to face interviews); face to face interview was selected as the most suitable. Face to face interviews were held with both contracting organizations as well as consulting organizations.

### **4. The Ugandan case – Acceleration and not extension of time**

In Uganda, the system is that at tender stage, the Bidder is required to show in his bid the proposed time frame for completion of the project. Also the consultant prior to tender must have indicated the most feasible time frame for execution of the project. Given the absence of scientifically developed mechanism for determination of construction project time frames, it brings into question how reliable the consultant time frame is yet the consultants time frame estimate is one of the major criteria used in the evaluation of bids and hence determination of the winner. On completion of the tender process and obtaining of the winning bid, a contract is prepared and signed between Client and Contractor. In the contract is shown of start and completion dates of the project. Usually the date shown in the winner's bid becomes the contract period, however it should be noted that usually this duration is made with the ambition of winning the Bid and can therefore be misleading. It is known that the project construction period is determined from the aggregate total of the required time to complete all the identified tasks of the project; the experience of the staff executing the works, weather condition and procurement schedule.

Under the frequently used contract Agreement and Schedule of conditions of the Building Contract designed by the East African Institute of Architects, there are two clauses that concern the project completion time. They work in such a way that if one is applied the other is automatically not applied. In other words the two cannot be enforced at once. The two clauses are Clause 22 – 'Damages for non-completion' and Clause 23 – 'Extension of time'.

The Damages for non completion clause indicates that if the Contractor fails to complete the works by the Date of Practical completion stated in the contract, and the Architect certifies in writing that in his opinion the same ought reasonably so to have been completed, then the Contractor shall pay or allow the Client a sum calculated at an agreed rate as liquidated and ascertained damages for the period which the works shall so remain incomplete. The Extension of time clause on the other hand gives the Contractor the right to an extension of time if the reasons presented for the delay were not of his own making. The clause highlights such reasons like force majeure, exceptional inclement weather, civil commotion.

The research revealed that the practice in Uganda is that almost 80% of those times when the project is delayed, the contractor has valid reasons and as such he is entitled to an extension of time. It is important to add that whenever an extension of time is awarded, it attracts additional costs hence increase of project cost. In such scenarios, the client loses two fold – the would-be revenue had the project been finished on time (loss of revenue due to delayed completion) as well as paying extra cost for preliminaries during extended period. Also the research revealed that this clause is rarely enforced as rarely do contractors especially the big sized firms like ROKO Construction, Cementers be responsible for delays on project. They most times aim is to complete the project as fast as practically possible and earn the profit and move to next project.

From the above review of the current situation in Ugandan Construction industry, the author proposes a case for acceleration and how this can be achieved so as to get all parties interested in the same. The proposal includes the preposition and determination of a reward to be given to the contractor in case he finishes the project earlier that the contract period agreed. In Uganda this can be achieved due to the high capacity of some of the senior firms that do most projects in Uganda which they don't exploit to the maximum due to the size of the projects. They therefore have the capacity to expedite and complete a project much earlier than agreed. However when they do so, they incur costs which must be compensated for. On the other hand, the client benefits when a project is completed on time or earlier.

In order for the proposal for acceleration and not extension of time to work, the author proposes methods on how calculate this economic benefit then compare it to the costs a contractor will incur to accelerate the works. Economic effect of Client [ $P_{client}$ ] early completion and hand over of project should exceed the award he proposes to the contractor [ $R_{contr}$ ] and as such this reward must exceed the costs [ $C_{contr}$ ] incurred by contractor to accelerate the work, hence the equation below must be satisfied.

$$P_{client} > R_{contr} > C_{contr} , \dots\dots\dots (1)$$

where

$P_{client}$  - Economic benefit obtained by client from early completion;

$R_{contr}$  - the reward proposed to the Contractor

$C_{contr}$  - the costs incurred by the contractor to accelerate the works.

In determining the economic benefit of the Client from early completion, the author proposes that this is obtained from the additional revenue received as a result earlier completion and occupancy of the building by tenants and is derived from the formula 2.

$$P_{client} = R(T_1 - T_2) , \dots\dots\dots (2)$$

Where

$P_{client}$  - Economic benefit obtained by client from early completion;

$R$  - Average monthly income expected.

$T_1$  - Agreed contract period for construction, in months;

$T_2$  - Actual construction period, in months.

The reward for the contractor it then calculated as a percentage of  $P_{client}$  hence the formula 3

$$R_{contr} = \alpha P_{client} , \dots\dots\dots (3)$$

As shown above, once the reward is determined, negotiations can proceed to between the two parties, only after the contractor has ascertained the costs that he will incur to accelerate the project.

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