



The anatomy of two projects: a comparative analysis approach

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Abstract

This paper traces the evolution of two contrasting construction projects from conception to completion. The projects are presented in tandem stages, interleaved with comparative analysis of key components and contextual factors. The five components forming the basis for comparison are the purpose of the project, the project process, the people involved, the organisation structure and the project management system. The three contextual factors are the parent organisation, the project environment and the general environment. The value of comparative analysis as a technique for enhancing learning is demonstrated. The use of a global project approach with vignettes selected from various stages is also shown to be instructive. © 2000 Elsevier Science Ltd and IPMA. All rights reserved.

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1. Introduction

The increasing interest in comparing organisations and management practices are reflected in the number of best-selling books in the past 20 years which focus on comparing the characteristics and cultures of successful companies [1–11].

The popularity of benchmarking in the last ten years is also indicative of the need felt by business and the public sector to compare organisations in order to delineate best practice.

However, the use of comparative analysis at the project level has been sparse. One of the few examples of systematic research is Morris and Hough [12], who compared major projects in order to identify success factors.

To compare means to examine in order to observe or discover similarities or differences [13]. Common characteristics or dimensions must be used to develop a framework for comparison. In a previous paper I have argued that five key dimensions for observing projects are the *purpose* of the project, the *project pro-*

cess, the *people* involved, the project organisation structure and the *project management* system [14]. In addition, contextual factors, which form the environment of the project, also need to be considered.

In this paper these dimensions will be used to conduct a comparative analysis of two typical construction projects. These are actual projects although the narrative has been enhanced and the characters and projects disguised.

The projects are for two fictitiously named clients:

- Hi-Tech Systems Limited
- Wessex District Council

The first extract from the project case studies introduces the clients and their building needs. Subsequent extracts will trace the projects in tandem through selected stages in their development.

Hi-Tech Systems Ltd. is a private company, which was founded by Nigel Carstairs, a brilliant young graduate computer engineer, in 1978. Carstairs had gathered a team of young, bright electronic and mechanical engineers around him and had been very successful in developing sophisticated and innovative computer based systems. This skill had been directed in the last ten years towards weapons-guidance systems for the Ministry of Defence,

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where the company has been successful in securing a number of important contracts in the face of fierce American and European competition. The latest surprise success is the award of a contract by the MOD to produce a system which, if it fulfils its promise, may be adopted by the Americans as part of its contribution to NATO.

As competition from Europe and American rivals is especially fierce for this potentially very lucrative contract, Carstairs is anxious to start producing and installing the new systems as soon as possible in order to capitalise on the apparent leadership that Hi-Tech has in this field. Hi-Tech faces one major problem. The company had not expected to win this latest contract and has taken on other contracts, which means that their existing factory will be working at full capacity for the next three years. There is no possibility of expansion on the present site and Carstairs, therefore, sees no alternative but to acquire and build another site. But where? And how?

A further success has been the recognition of Nigel Carstairs' personal contribution to innovative technology with the award of a knighthood in the New Year's Honours List. On hearing of the honour, a rival company's managing director is reputed to have said, "let's hope this encourages him to start racing hot air balloons!"

Wessex District Council was formed by the merging of two smaller authorities during the local authority re-organisations of 1972 and 1978. Since the merger the Council has been operating from the two sites of the original authorities, splitting activities as logically as possible. It was always intended that eventually the Council would operate from one site and that a new headquarters and council offices would be built. At a recent meeting of the finance and general purposes committee it was decided to go ahead with a scheme, designed by the councils' architects' department, on the larger of the two sites. In view of the possible financial cuts in the near future, a start is to be made as soon as the process of public consultation is completed.

Hi-Tech and Wessex District Council represent two typical but contrasting types of client. Hi-Tech is inexperienced or naive in commissioning building work whereas Wessex is a knowledgeable sophisticated client. Hi-Tech is a very occasional building client; Wessex is continually undertaking building projects. Hi-Tech is a private corporate client with control centralised in the hands of an autonomous, dynamic chief executive; Wessex is a bureaucracy ruled by a committee structure that has to respond to political and public pressures.

We will conceptually cut a cross-section through these two projects, as they develop, to identify the main components. The examination of these components will reveal similarities and differences.

Projects do not occur in a vacuum; so our under-

standing of a construction project would be incomplete without reference to the context or environment within which a project evolves.

These facets of a construction project — components and context — will form the framework for this paper.

2. The components of projects

We will begin to dissect the two projects by considering the anatomy of the five components:

- the purpose of the project (of the strategic system)
- the project process (the technical system)
- the people involved (the social system)
- the project structure (the structural system)
- the project management system

3. The purpose of a project (the strategic system)

3.1. Back to the two case studies

The unexpected award of the new contract has triggered a crisis at Hi-Tech. Sir Nigel Carstairs is clear that his main objective is to complete and install the weapon guidance systems as quickly as possible in order to maintain industry leadership and consequently secure the much larger American contract. The building of the factory is an irritating necessity, to be started and completed with all speed. Speed, pure and simple, is the objective for this building project; the cost of the building shell is insignificant in the context of the total profits and costs of the project, i.e. the research and development costs already incurred, and the costs of setting up the factory operating systems.

The building is a minor sub-project within the total project context and is seen as a means to an end. Hi-Tech has some further development work to do on the system and Carstairs therefore wants the absolute minimum of involvement in the building process.

For Wessex District Council, the construction of the new headquarters building is seen as the realisation of 15 years of dreaming and scheming. An end is in sight to the uneconomical and inefficient methods of operating forced on them by the split-site policy. Having waited 15 years for this project to become a reality, and in spite of the long shadow of central government cuts being cast across the project, the council is concerned that this prestige building shall be innovative in design and built to the highest standards that they can afford. Therefore quality of the building together with a strict control of costs to achieve the budget are seen as the two prime objectives of the project. Time for completion is of sec-

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