The Changing Infrastructure of Tertiary Education

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Indicators on Strategic Performance and Equitable Financing: Key Parameters for Managing School Infrastructure

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Philosophers have always sought to answer the question: where did I come from and where am I going? In fact, we can simplify this question by focussing on the key importance of understanding the past and the present in order better to anticipate future trends. The industry of managing property and buildings is no exception to this basic rule.

At the height of the industrial revolution at the end of the 19th century, the urban areas of the industrialised countries grew at an extraordinarily rapid pace. This growth brought with it a social organisation that was as complex as it was sudden. The role of craftsmen tended to disappear, being replaced by the division and specialisation of labour. A pattern of continually expanding institutional infrastructure and housing emerged, with pupils in schools, the sick in hospitals, families in neighbourhoods and so forth.

With urbanisation already well under way, the post-war baby boom had a decisive impact on the social trends of the 20th century. In the United States, for example, more than half of the university infrastructure was built between 1950 and 1995. The student population grew by 600%, with the number of institutions rising from 1 800 to 3 768. Between 1955 and 1974, a new higher education institution was opened every two weeks[1].

In Canada, more than 53% of schools were built between 1950 and 1960. These schools were cheaply constructed, designed to meet the rapidly expanding post-war population and to last an average of 30 years. In 1993, the overall maintenance and renovation deficit for schools was estimated at some $1 billion[2].

There were identical developments in the other industrialised countries during the same period, although obviously on a different scale. This period of mass construction of our infrastructure and plant, both public and private, has confronted us with a series of new challenges. For example, as demand soared and outstripped supply, it promoted the use of new building techniques and materials. This was dictated by short-term interests, as priority was often given to building rapidly and at low cost at the expense of quality. The consequences of this approach, in the wake of the oil crisis of the early 1970s, were that as schools began to age, it became apparent that the components of buildings were proving short-lived, buildings were not energy efficient and there was insufficient financing for maintenance and renovation.

We must also mention that the proliferation of changes and additions to laws, standards and regulations in the construction industry and the public budget cuts of the last decade have placed enormous pressure on those responsible for managing school infrastructure. For example, preventive maintenance is often neglected in order to meet short-term needs, and carrying out maintenance and renovation only after major problems have emerged is increasingly the norm.

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The managers of school infrastructure have no choice but to convince policy-makers and funding authorities of the strategic importance of plant (grounds and buildings) in the mission of their organisation.

The first step towards a solution is to provide clear and transparent information on the situation and on the medium- and long-term consequences of failure to take concerted action. We must even say that there is a problem of risk management. This risk can be defined as the threat that an occurrence, action or failure to act will be detrimental to the objectives and implementation of an organisation's strategy. For instance, there are the financial risks connected with civil proceedings due to injuries or even loss of life, the inflated cost of work because demand is greater than supply, or the loss of revenue caused by a decline in the number of users. This calls for stringent management of the maintenance and renovation of our buildings. Are we willing to assume this responsibility?

What financial resources do we need to invest to be able to carry out regular maintenance and renovation? What budget is required to meet present and future needs? Which components of our buildings should be given *priority* within a strategic intervention plan for school infrastructure? Can we estimate the cost of demand due to the ageing of school infrastructure? Do we have the tools to support decision-making that we need to manage the situation?

This presentation will begin by describing the outside factors[3], such as legal liability and greater competition, that affect the action of managers of school infrastructure.

Next, it will make it possible to show and define the parameters of school infrastructure management, such as maintenance and current operations, upgrading, renovation and the maintenance deficit[4], in order to develop measurable and comparable strategic indicators. It will show that performance indicators are by no means exclusively of a financial nature, but also involve analysis of the internal management procedures of the Service responsible for facilities, evaluation of service to customers and assessment of the ability of human resources to learn and innovate[5].

Furthermore, it will present a set of performance indicators that will enable managers to maintain a balanced scoreboard of indicators.

Lastly, it will show the impact that the condition of the school infrastructure has on the required financing.

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