

DIY data centres – the hidden costs

by Gys Geysler, Teraco Data Environments

Building and running a data centre in-house has appeal: keep control of sensitive data, utilise in-house space and resources, and avoid last-mile costs by locating applications and data in the building.

However, the cost and complexity of self-build has been driven up by users' expectations over the past few years, resulting in some unpleasant surprises affecting CIOs' budgets.

Deciding on whether to build or outsource a data centre is a tough call. Historically, the decision largely came down to the capex available for the build. Today, CIOs' checklists include many additional opex factors that complicate this decision. Scalability, time to market, the right expertise, and the shortening lifecycle of IT equipment all come into play, along with unknown future requirements to connect up more and more data stores and services.

Apart from the increasing cost of self-build, including physical construction cost and the safety and environmental systems needed, the rising complexity of running a data centre can be a nightmare. A multitude of hidden costs creep out of the woodwork and drive CIOs mad when it comes time to work out the final bill.

Examples of sometimes unforeseen problems are:

Electricity bills

Unbudgeted energy costs can cause DC costs to skyrocket due to budget misallocation if the bill for the data centre in the company's basement, which accounts for 90% of the power consumption, isn't split off from that of the bill for the rest of the office building. It is not unusual for a 20 m² server room to consume R30 000 of electricity per month. Apart from the power needed for the servers, smaller data centres, which have been built with less planning and investment in airflow management, waste a high proportion of energy on cooling.

Server budgeting

Over-investment in servers in anticipation of the business' need for data centre capacity over the next five to ten years, or an unexpected downsizing of the business, can lead to a costly tie-up of capital.

True cost of outages

Unforeseen downtime for a company that relies on internet connectivity for access to its data and inter-office connectivity to be able to trade, can lead to significant business losses. Add to this additional costs and downtime after an outage to get all the equipment up and running again. However, avoiding outages completely is expensive. Not only does infrastructure need to be resilient (two of everything) but staff and processes need to be in place and up to date.

Cost of ownership

Replacement and maintenance costs (e.g. uninterruptible power supply batteries), combined with the rate of technological advancement, means a data centre typically has a life span of about ten years after which major capital items require replacing, depending on their utilisation, promising a huge capital and management challenge.

Security

As the DC becomes more critical to the business, security risks become greater – and physical security is paramount. All those 24 x 7 security guards, CCTV cameras, recorders and motion detectors cost unexpectedly large amounts of money.

Barriers to expansion

Despite implemented technology efficiencies such as virtualisation, companies' data centres are expanding at 10 – 20% a year. This is driven by the doubling of data traffic each year and the centralising of applications and data storage. When data centres are at capacity, the next phase of expansion may require separated sites, costly interconnections and added complexity. These complexities lead to additional management overhead, increased business risk and increased expense.

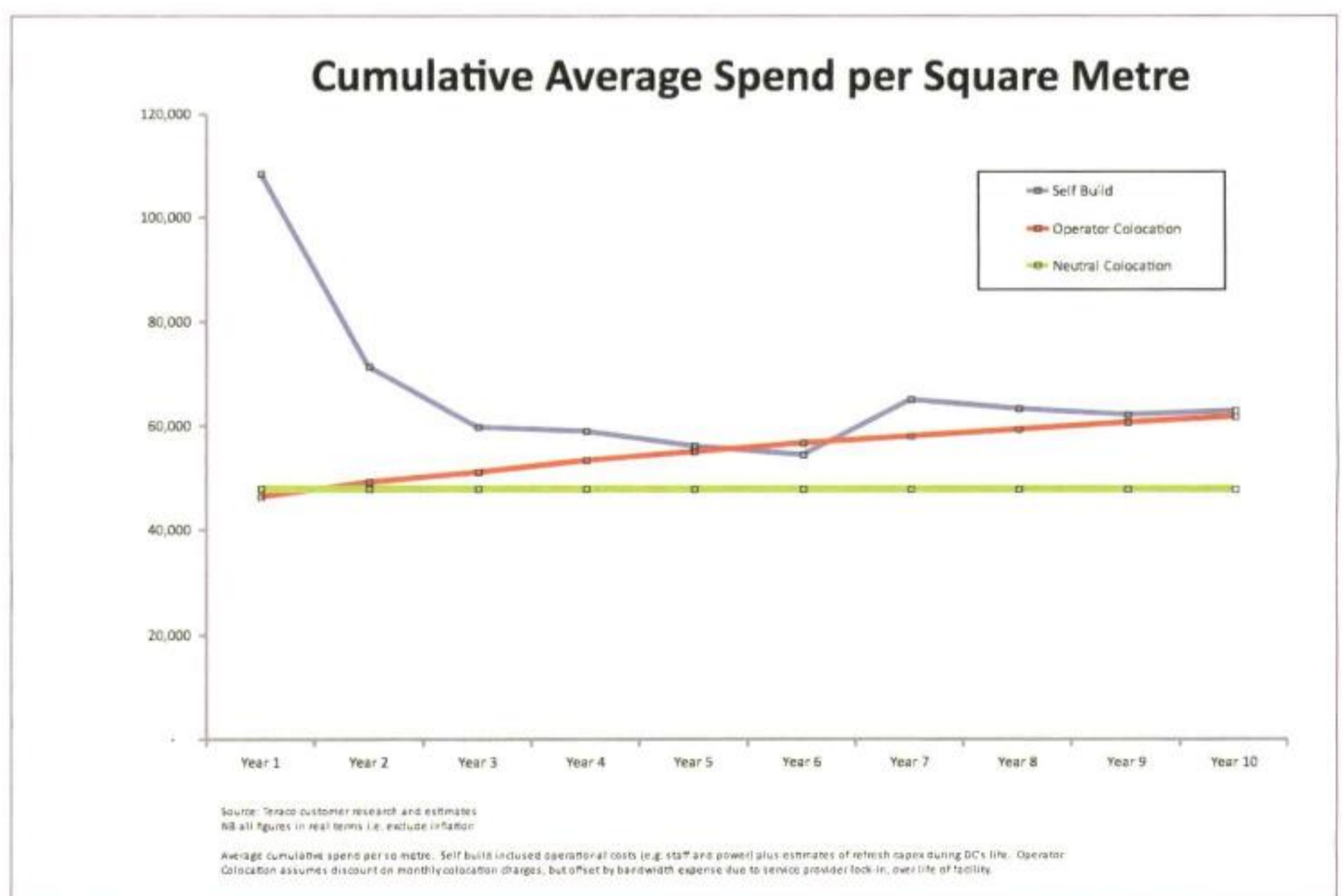


Fig. 1: Cumulative average spend per square metre.