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How to upgrade a data centre while maintaining service

Article

Careful preparation is key for undertaking upgrades in live data centres. Here's a three-point roadmap to success.

The history of data centres is relatively short. It was only towards the end of the 1990s that stand-alone centres began offering outsourced services to companies which either no longer wanted to maintain systems on site, or whose demands for power and cooling outstripped their in-house capability.

It means the equipment in many data centres is approaching 20 years of operation and needs to be replaced. In addition, because it's a young industry, there is limited experience within the sector of carrying out upgrades and replacing equipment.

This lack of experience has led to understandable uncertainty and fear about undertaking work in a live data centre because of the potential for interrupting day-to-day operations and the consequences of downtime for the business should that happen.

It is certainly true that replacement projects on technical installations are complex. What's more, it's not possible to rely on experience gained when setting up new data centres. Such experience is less applicable to end-of-life replacements and differs in some important ways which I describe below.



However, with the right approach and good risk management, replacements and upgrades in live data centres can be carried out with confidence and success. To achieve this, I recommend the following approach:

1. Conduct an inventory of the existing installation

When you carry out a replacement, you want to understand the existing set up. To do so, identify current shortcomings or bottlenecks, such as inadequate power, low efficiency systems or noisy operations, before you start.

2. Analyse risks and identify management measures

Identify, quantify and classify the risks involved in the replacement work. Then plan your control measures.

3. Structure your operations with care

One of the big differences between undertaking new or replacement projects in data centres is the way projects are structured. On greenfield project, they can typically run in parallel to save time, but this is unlikely to be possible in a renovation project. To manage the risks and maintain availability of key components to operate the data centre during the renovation, it's likely the work will need to take place consecutively. For example, if there are four units in the cooling system and three are required at any time, it would not be possible to replace more than one unit at a time, otherwise insufficient cooling would be in place.

Royal HaskoningDHV has unrivalled experience and thorough knowledge of the technology and management of the risks of replacing and renovating live data centres. If you would like more information about how we can help you, please get in touch.

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