The evolution of data center infrastructures

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In the first paper of our Expert Perspectives series, Eaton's Francois Debray explored how the complexity of legacy data centers creates an unacceptable level of business risk for organizations.

In this paper, Francois describes how organizations can best respond to this pressure by evolving their data center infrastructures.

7 Key steps to creating a modern data center infrastructure

Modernization efforts in the data center go a long way in supporting the needs of mission-critical IT assets as the risk of downtime becomes strategically unthinkable. Whilst there is clearly no set template for modernization, Eaton's experience in this sector suggests that the following steps constitute best practices:

1. Assemble the right project team. Many data center modernization projects fall at the first hurdle because no one takes ownership of what is a critical priority for the business. The modernization plan needs to be driven from start to finish by a team that includes all relevant stakeholders within the organization as well as a complete set of appropriate vendor partners.

2. Assess and plan. Effective progress starts with an accurate assessment of where you are now, and where you want to be at the end of the process. Organizations should create a complete list of their facility's limitations and identify multiple options for overcoming them.

3. Establish the business case. Once potential options are identified, businesses must weigh the costs and benefits and then decide which ones make the most sense to pursue. Based on that analysis, managers can then prepare a business case to secure adequate funding.

4. Create a project plan. With funding secured, the next step is preparing a thorough plan of action including a realistic schedule. Goals and success criteria should be clear and explicit, specifying which infrastructure changes are included within the remit of the project — and which are not.

5. Execute the project plan. Keeping a data center modernization project on-track demands meticulous day-to-day management. External contractors should be selected for their project management expertise and track record on comparable tasks. Meetings should be frequent and regular, and issues addressed promptly.

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6. Conduct tests. The commissioning process for a modernized data center should include careful testing of ALL systems that have been changed, added, or replaced- whether that be UPS hardware, PDUs, cooling for aisle or rack containment, or any other systems. Testing should be undertaken with a variety of simulated workloads.

7. Validate results and refine operational methods. Before putting an upgraded data center into production, there should be a rigorous and objective evaluation of its real world performance. Are targets being hit? Have goals been delivered? Can this be validated by a knowledgeable vendor consultant?

At-a-glance: What you could gain through modernization

Clearly, evolving a legacy infrastructure demands commitment and persistence. But modernization will help improve agility of the data centre and minimize business risks, increasing customer satisfaction. The potential rewards make the effort well worthwhile:

- Improved business continuity and safety
- Optimized reliability
- Enhanced predictability
- Enhanced flexibility and functionality
- Greater scalability
- Improved serviceability

Conclusion

Evolving legacy data center infrastructures is increasingly important as modern computing trends such as virtualization, cloud computing and the proliferation of business apps create unprecedented workloads. Such projects represent a serious commitment for any organization but by following best practices a range of benefits can be secured including improved reliability, agility, flexibility and scalability, and reduced operational spending.

About the expert

François Debray is currently Business Development Manager for Eaton (EMEA) and is instrumental in helping organizations innovate and increase efficiency with the best white space solutions. His deep understanding of the sector is built upon more than a decade of experience in technical training as well as technology sales and marketing.

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