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White Paper Series **Data Center Strategy**

What this white paper is about?

Creating a Data Center strategy is an important aspect of overall IT Strategy in order to ensure availability and performance of key strategic applications for supporting business objectives, current and future.

This paper discusses the best practice in creating a Data Center migration strategy and approach for organizations and steps to creating a successful strategy.

Core operational strategy supporting a global business is based upon driving the organization towards a simplified and standardized enterprise. Typical IT strategy enables this through the use of common global systems supporting standardized global processes. The global operational strategy puts a significant emphasis on the availability of critical global systems and the reliability of the data centers.

Approach and Summary of the Data Centre Strategy

Since any Data Centre Strategy involves a significant investment, which must serve the needs of the organization and all associated business units, the approach begins with development of several key principles that drive this data center strategy. This approach serves to drive the strategy from the top down to ensure completeness of vision.



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Next, the overall strategy is established, which explains the business rationale and logic behind the hierarchy of data centers, which typically includes a mix of Global and Regional data centers to local server rooms that support the needs of small sites. Finally, the document concludes with an overall roadmap for strategy implementation, focusing on delivering benefits in the fastest manner by an initial concentration on remediation of the data center capabilities.

Strategic Principles

The strategic principles drive the overall data center strategy. It is essential that a comprehensive effort is undertaken to involve all business units to understand the technical landscape and the future growth expectations in order to establish these principles. Following a series of workshops and discussions with key stakeholders, a set of principles are developed to guide the overall strategy. Each of these principles is fully explained and justified within the context of the business. Some good examples of effective guiding principles are given below:

- Data centers will be physically secure and data appropriately protected
- There will be diverse physical access routes to each data center
- Data centers will be highly resilient
- Data centers will be paired and not share a common risk
- Data centers design will optimize operational cost efficiency and reduce environmental impact
- Consolidate IT services into a minimum number of resilient data centers

“Our key objective for Data Center Migration is to ensure availability and performance of key applications that are lifeline of our business”

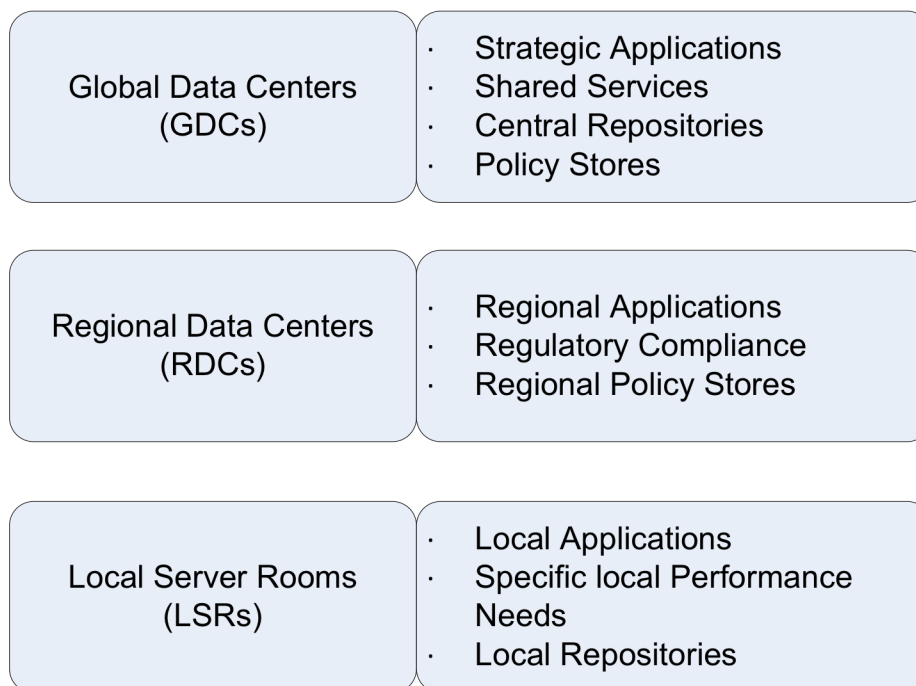
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Strategy Development Approach

After the strategic guiding principles are clearly established and outlined as above, the data Center strategy must propose a long-term vision of a hierarchy of data centers, which is a mix of highly resilient *global* data Center(s) supported by *regional* data Centers and *local* server rooms as appropriate. The global data Centers will typically host the core enterprise wide global systems, such as SAP for ERP, CRM applications, Shared Service applications etc. The regional data Centers typically support specific regional needs, such as regulatory and compliance requirements & controls. To provide the required level of resilience the global and regional data Centers are usually paired. Where necessary, supplementary local server rooms are placed at other smaller sites to cater for certain in-country regulation or to support local IT system performance as required.

Figure 1: Typical Data Center Hierarchy



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Global & Regional Data Centers - Key considerations

- Global and regional data centres must be robust and secure with redundant and efficient power, communications and cooling systems to provide optimal availability. As such, we will strive for Tier III compliance – as defined by the Uptime Institute.
- Global & Regional Data Centers must support the capability to transfer critical workloads to its paired data centre in the event of the loss of an entire data centre.
- Paired data centres must be physically apart by a minimum distance (typically at least 10 miles apart) to protect against a single event affecting both sites in a pair.
- IT systems that are dispersed in many local server rooms and communications closets must be consolidated into the global data centre pair or regional data centre as appropriate.

Local Server Rooms - Key considerations

- Local server rooms will remain in key sites, typically where there is more than 100 staff.
- Sites with specific requirements (typically related to security and regulatory compliance) must maintain large “air gapped” server rooms to ensure adequate controls are maintained.
- Key IT services for larger sites, must be consolidated as much as possible to global or regional sites to take advantage of the increased protection afforded from their resilient configuration. Local server rooms should ideally only maintain a small subset of systems.

Other strategic considerations

Regulatory constraints

Large corporations often deal with data that can be subject to strict controls (such as Export Control) and therefore cannot be housed outside the geographical boundaries. The placement of Global and Regional data centers must take into account all the regulatory, legal requirements in order to ensure compliance with these regulations.

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User community:

Placement of data centers is also impacted by the distribution of the organization's user community. Typically, sites with largest user population within the organization are closer to the Global and Regional data centers in order to support the applications and capabilities needed by the large sites. This reduces the cost of supporting the large sites through proximity to Global or Regional data centers.

Support staff:

IT support staff needs access to data centres for new installations, maintenance and support reasons. A Global or Regional data centre pair must have adequate level of support staff located on-site or nearby, in order to avoid significant staff relocation or new hires of the data centre

Applications landscape:

Some applications place constraints on the placement of infrastructure in order to maximize the application performance. For example; Data replication capability within SAP relies on technology that places a maximum distance between data centres of roughly 50 miles in order to ensure effective data replication and redundancy. Therefore, it is critical to understand the applications that are to be deployed in the data centers in order to maximize the performance of these applications to support the business.

Data Center Migration Planning

Once the data center strategy establishes the locations and specifications of the data center, it is important to prepare a high level plan of migrating to the new data centers. Below is an example of a high level approach to migration planning:

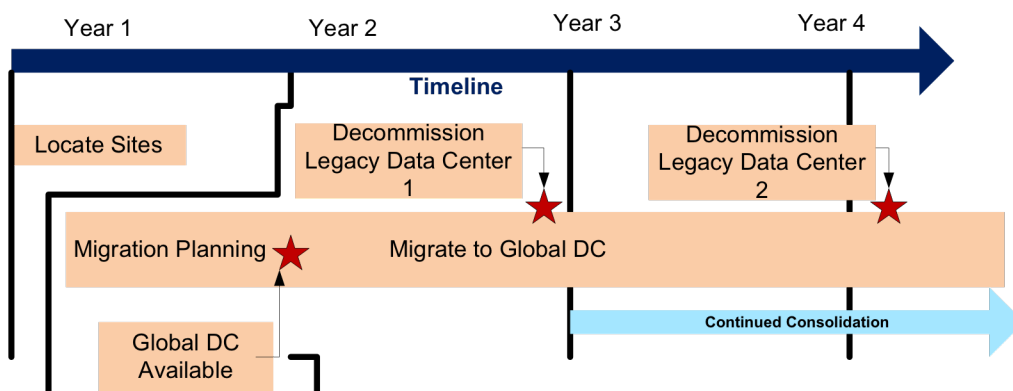


Figure 2: Roadmap for Global Data Centre Migration

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Summary

As outlined in this strategy paper, planning and adopting a new Data Center Strategy requires careful planning and analysis of multiple factors. The key is to build a data center strategy, that supports your business in its current state as well as supports the future growth for medium and Long term, while delivering other benefits (reduced cost of ownership, enhanced application performance, richer user experience etc.) to the business

