



TECHNOLOGY
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Data Center / Collocation Real Estate Dynamics



Outline

- **Data Center Real Estate Market**
 - Historical Demand/Supply
 - Current costs and timeline
 - Deal Structuring

- **Direct Control of Data centers vs. Collocation**
 - Key decision drivers
 - Enterprise growth/maturity cycle
 - Defining the right decision drivers

- **Site Selection Process**
 - Site selection checklist
 - Collocation choice
 - Remote location pros/cons
 - Sourcing existing data centers in current market

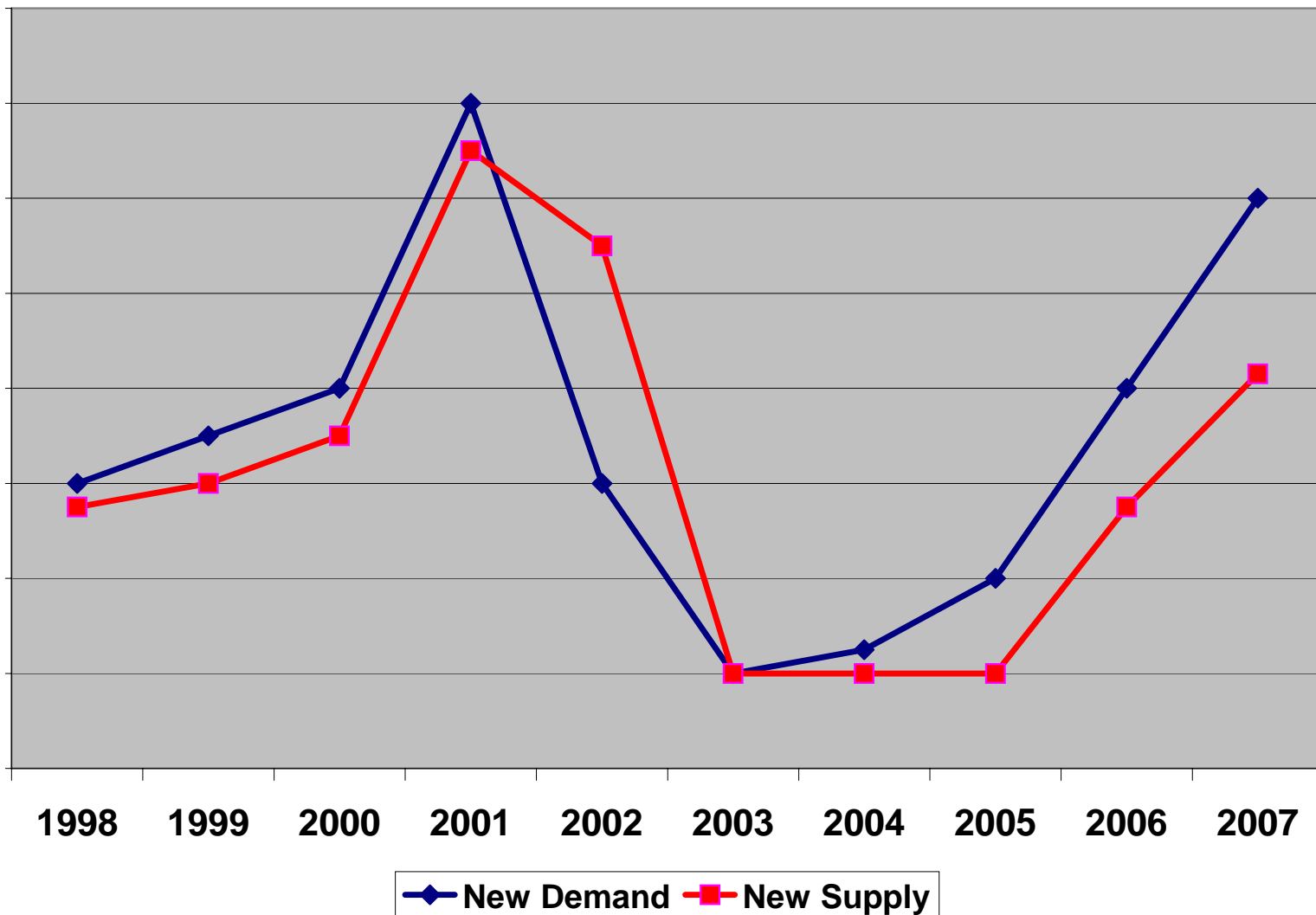


Real Estate Market

- **Historical Demand/Supply**
- **Current costs and timeline**
- **Deal Structuring**



Data Center Demand and Supply

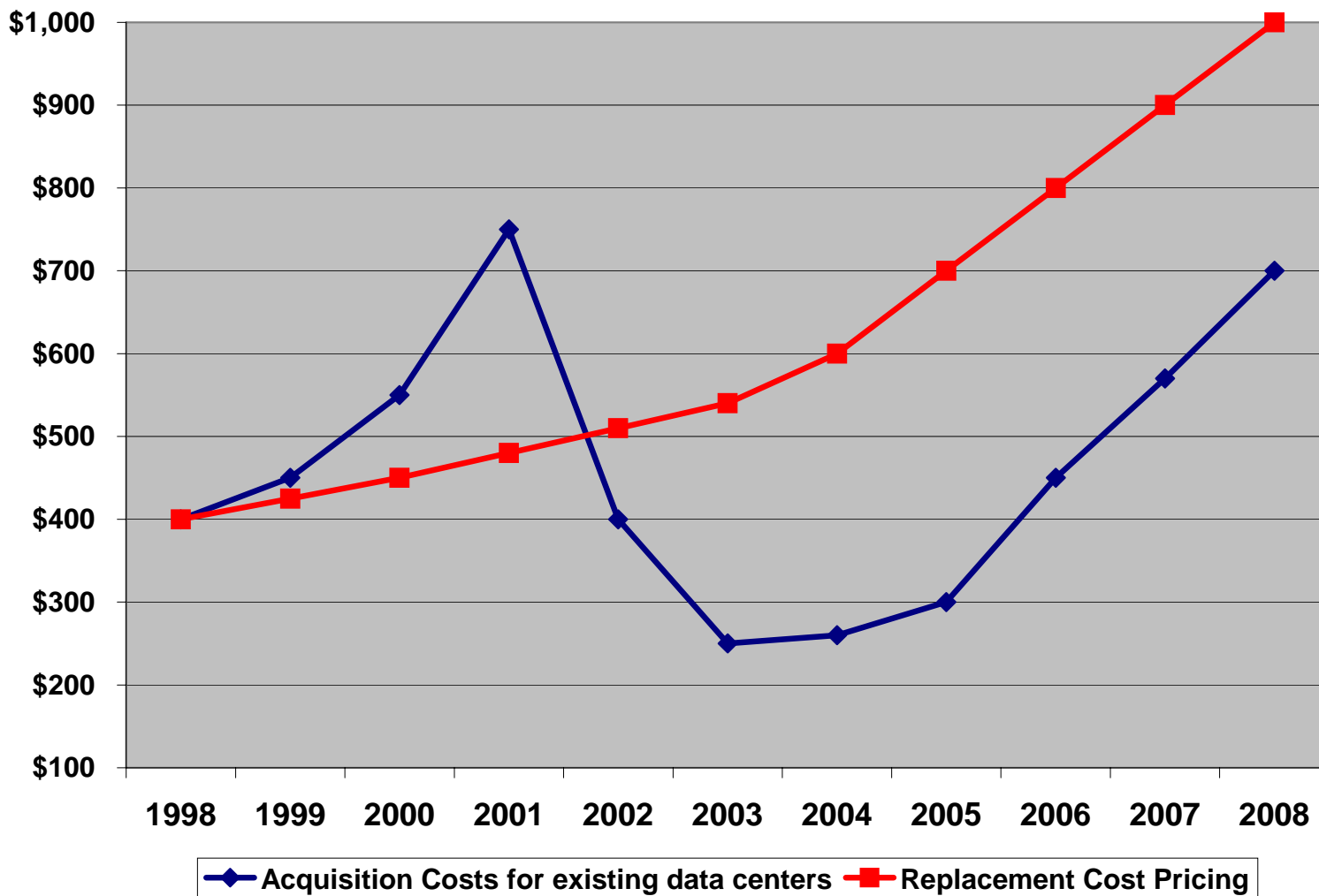




Data Center Demand Survey

- **80% plan to expand their data centers**
- **75% plan to expand in two or more locations**
- **Key drivers for growth include:**
 - **New applications**
 - **Power requirements**
 - **Disaster recovery initiatives**
 - **Sarbanes- Oxley Compliance**
 - **Overall enterprise growth**
- **More than 50% plan to use a partner to implement their expansion plans**

Market Costs vs. Replacement Cost Pricing



(Costs per square foot)



Current Costs and Supply

- **All in costs per sf of new build to suit facilities - \$1,200+**
- **Very limited top tier supply**
- **Build to suit timelines extended and key improvements controlled by a handful of major players**



Data Center Real Estate

- **Unique Real Estate Class**
- **Value disparity between core Real Estate and Improvements**
- **Landlord drivers differ**
- **Need for long term control**



Deal Structuring

- **Understand landlord buyer values**
- **Evaluate various means of obtaining control**
- **Focus on your key needs**

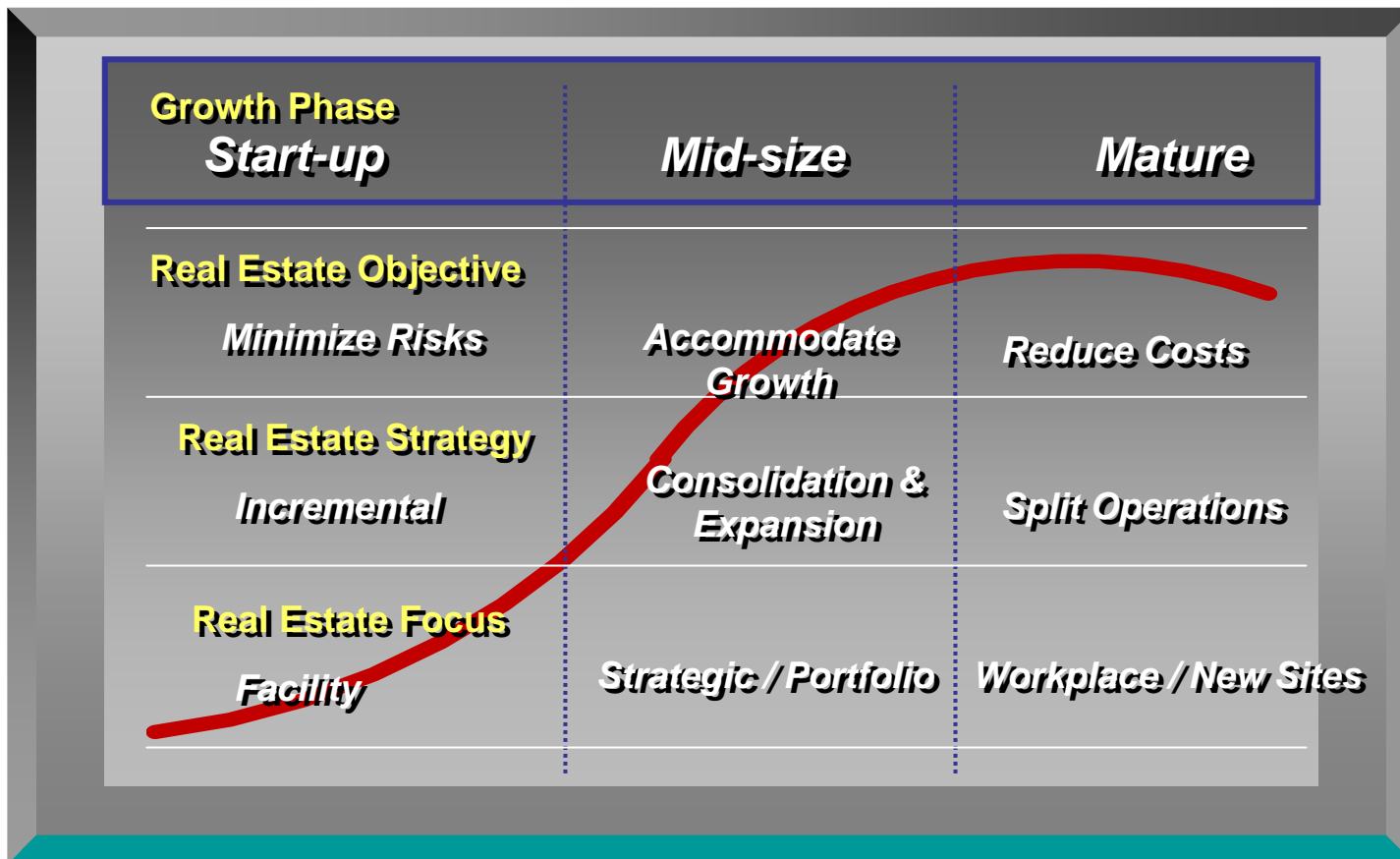


Direct Control vs. Collocation

- **Key decision drivers**
- **Enterprise growth/maturity cycle**
- **Defining the right decision drivers**
- **Collocation Benefits and Choice**

Company Growth Cycle

Growth Cycle / Real Estate Strategies



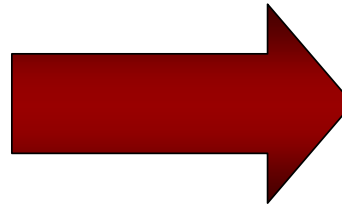


Real Estate Strategy

Develop a strategy that aligns real estate with the organization's business plan and provides a work environment that accommodates growth while enhancing productivity and collaboration.

Input

- Key leader interviews
- Review and validate projections for head count growth, technology and space needs
- Define future technology needs
- Demographics of current and targeted new hires
- Market evaluation for all key sites
- Potential workplace alternative approaches
- Financial Analysis

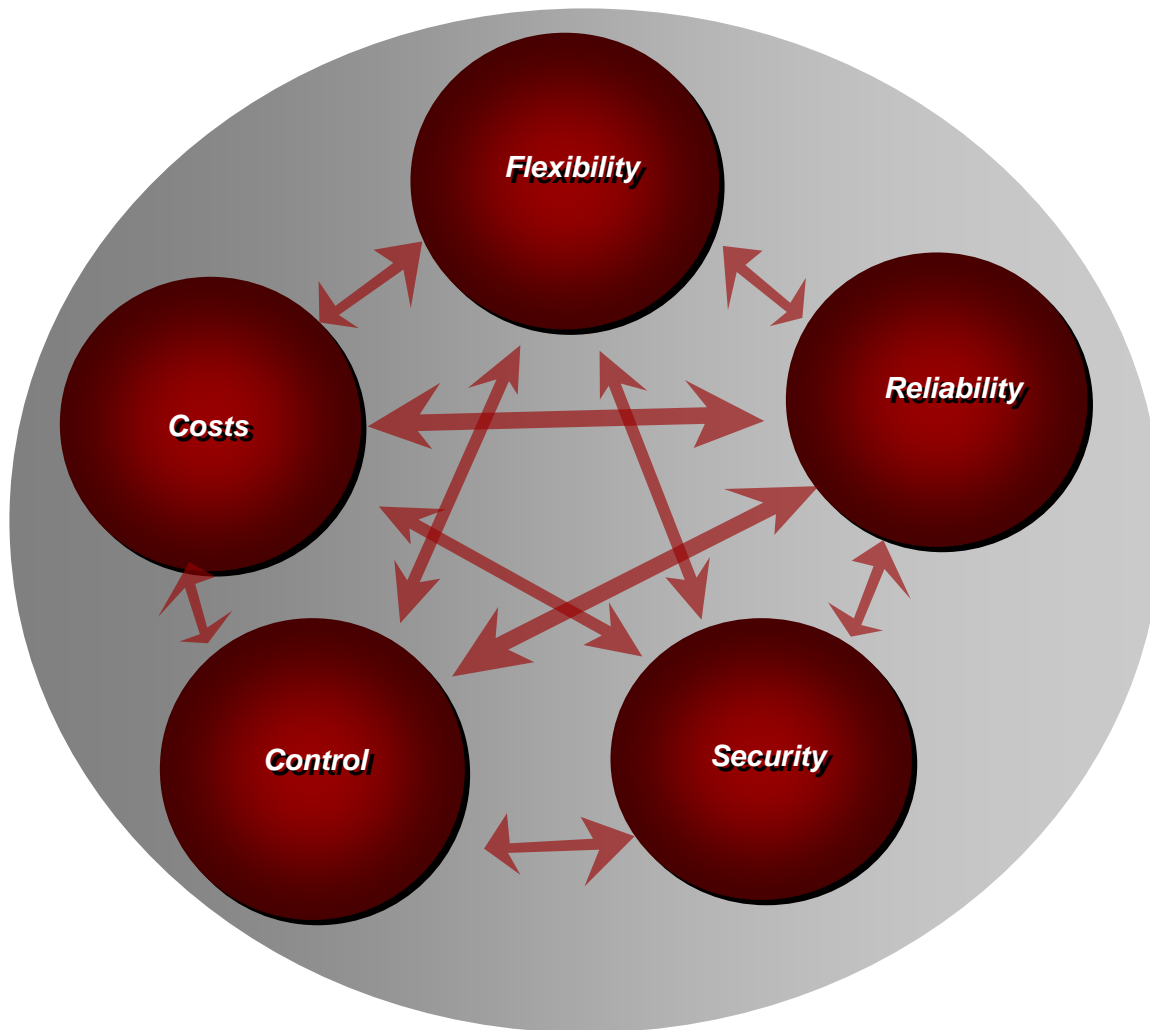


Real Estate Strategy

- Aligns real estate with business drivers
- Guides future real estate decisions
- Defines ideal, not incremental, solution
- Improves flexibility
- Increases productivity
- Optimizes space and cost efficiencies
- Identifies need for other workplace initiatives



Key Data Center Real Estate Drivers





Collocation Benefits

- **Speed of implementation**
- **Minimize capital costs**
- **Expertise and experience**
- **Ability to concentrate on core business**
- **Flexibility to scale**



Collocation Choice

- **All collocation providers are not the same**
- **Differing service models**
- **Capacity and pricing of collocation providers**



Checklist of Key Considerations

- **General Facilities Evaluation**
- **Power capacity, cost and reliability**
- **Network Connectivity, Reliability and Scalability**
- **Disaster Recovery**
- **Security**
- **Ease of access to site**
- **Costs**
- **Expansion capabilities and timing**
- **Monitoring**
- **Reporting**
- **Support Services Available**



Site Selection Process

- **Site selection survey**
- **Site Selection Checklist**
- **Sourcing data centers in current market**



Site Selection Survey

Key Factors

- **Security**
- **Fiber access**
- **Power**
- **Accessibility for company personnel**
- **Taxes**
- **Labor Costs**
- **Real Estate Costs**



Site Selection Checklist

- **Need for clear advance communication between IT, HR, Facilities and Finance**
- **Create a prioritized list of key needs**
- **Document and communicated checklist as a first step to all involved**



List of Key Needs

- **Location – IT talent access**
- **Power**
- **Cooling**
- **Ceiling Heights**
- **Security**
- **Fiber**
- **Raised Floor**
- **Fire Suppression**
- **Costs**
- **Timing of availability**



Remote Locations

➤ Costs

- Real Estate cost differentials
- Power costs
- Local Tax benefits
- Transmission cost decreases

➤ Adjacency vs. lack of adjacency issues

- IT staff
- Proximity to other operations

➤ Business Continuity

- Geographic diversification
- Seismic/Natural Disaster issues



Existing Data Centers

Acquisition of an existing Data Center is problematic

- Few existing DC's meet current needs for power
- Sub-optimal facilities will require extensive “due diligence” investigation and are subject to potential “false starts” and schedule delay. Additionally, initial cost saving maybe eroded by required commissioning upgrades

The majority of existing Data Centers lack suitable power

Characteristic	Average across data centers	90% of data centers are less than	Maximum example found
Design power density	35 W / sq. ft.	60 W / sq. ft.	200 W / sq. ft.
Actual operating density	25 W / sq. ft.	40 W / sq. ft.	150 W / sq. ft.

Source - APC (American Power Conservation) White Paper #46



Shadow Space Opportunities

- **Companies are pursuing server consolidation strategies**
- **Acquisitions result in redundant data centers**
- **Top opportunities are quickly taken**



Avoid Incremental Decisions

- **Most Real Estate Decisions are made incrementally**
- **Incremental Data Center decisions can result in a highly suboptimal outcome**
- **Costs and rate of change are very high but the cost of poor decisions is even higher**



Lessons Learned

- **Regularly update Strategy based on core business requirements**
- **Avoid incrementalism**
- **Emphasize strong communication of key objectives**



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