



 IT Solution Day 2015

Smart Infrastructure For Smarter Data Center



"How" to plan and build smarter DC infrastructure



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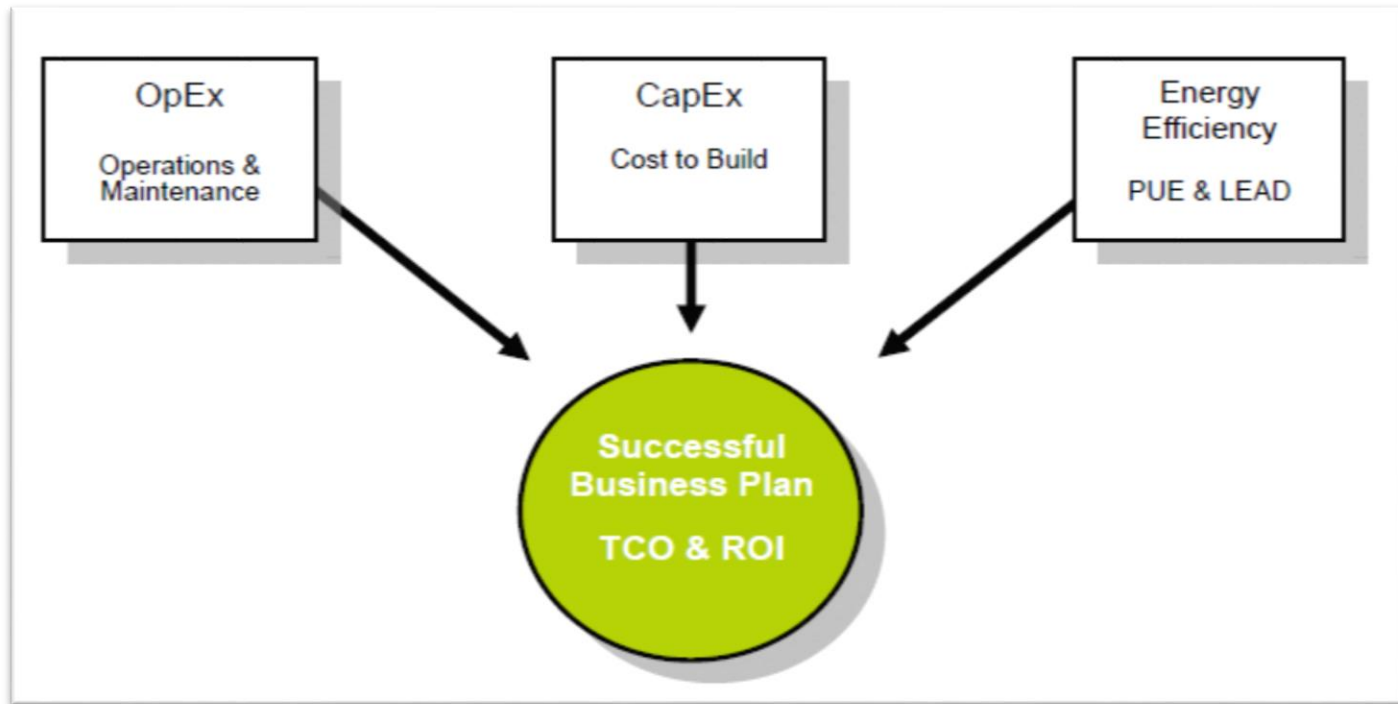
Who We Are

- ***Transtellar Inti Mitra (TIM)*** is a company dedicated to provide its clients thorough knowledge of Data Center know how. From the understanding of a ***proper data center design***, to a ***complex deployment*** and ***operation management*** of Data Center facilities.
- TIM with its ***technical knowledge***, ***business network*** and experience, has the abilities to provide the most ***optimize solution*** for client's needs. From space design, infrastructure support, hardware perspective and ***budget wise***.

The Top 9 Mistakes in Data Center Planning

- ❖ Big mistake 1: Failure to take TCO into account
- ❖ Big mistake 2: Poor cost-to-build estimating
- ❖ Big mistake 3: Improper design criteria
- ❖ Big mistake 4: Site selection before design criteria
- ❖ Big mistake 5: Space planning before design criteria
- ❖ Big mistake 6: Designing into dead-end
- ❖ Big mistake 7: Misunderstanding PUE
- ❖ Big mistake 8: Misunderstanding certification
- ❖ Big mistake 9: Overcomplicated designs

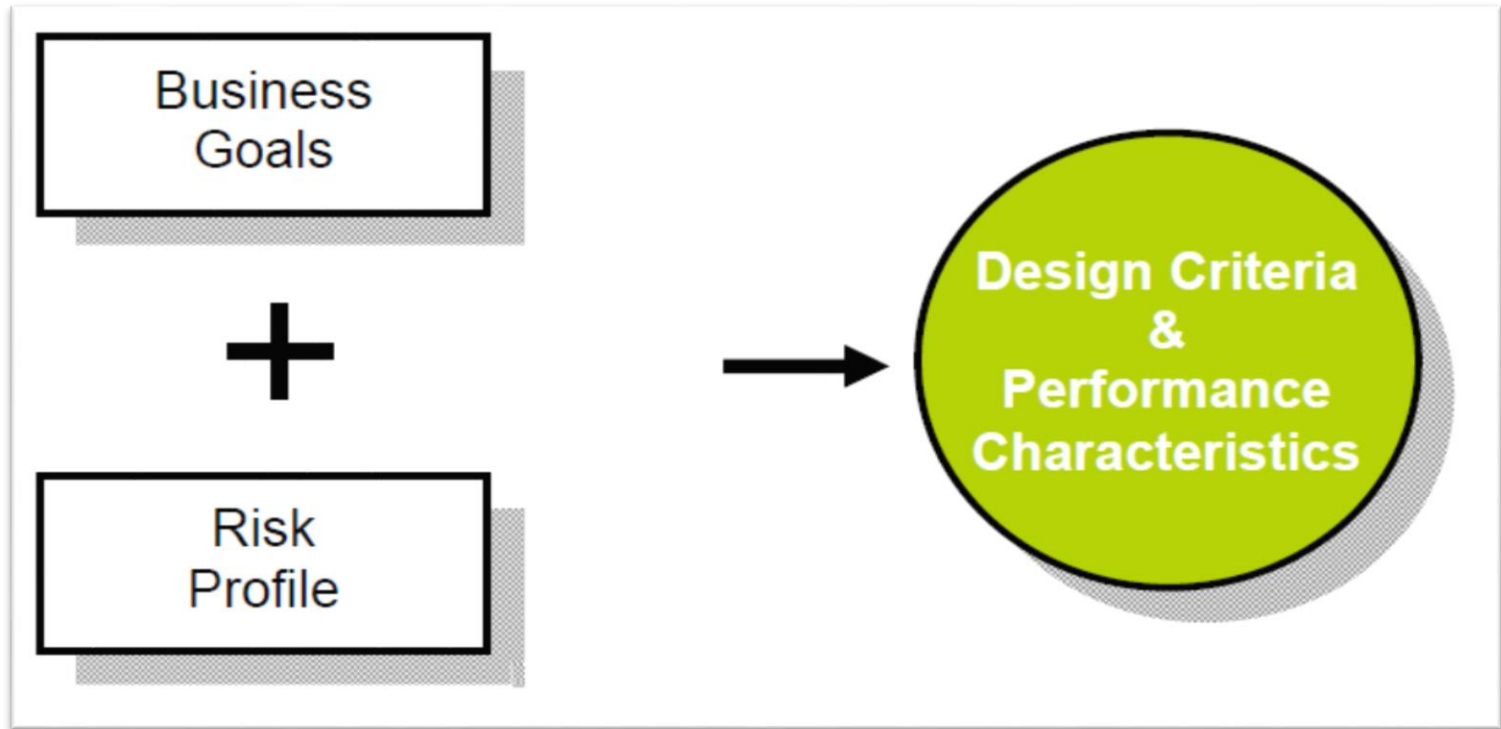
Big mistake 1: Failure to take TCO into account



Big mistake 2: Poor cost-to-build estimating

- The capital request is made and tentatively approved. Financial resources are allocated to investigate, capture and create a true budget.
- Time is spent driving the above budget process.
- The findings reveal that the initial budget request is too low.
- The project is delayed. Careers are impacted, and the ability to deliver service to internal and external clients and prospects is impacted.
- This takes you full circle, back to the # 1 Biggest Mistake: Failure to take the TCO approach and build a holistic financial model.

Big mistake 3: Improper design criteria



Big mistake 4: Site selection before design criteria

consideration power availability and cost, fiber, geographic issues such as earthquakes, tornados and flood plains, etc.

Big mistake 5: Space planning before design criteria

Many organizations base their space requirements on IT equipment alone. However, mechanical and electrical equipment require a significant amount of space

Big mistake 6: Designing into dead-end

Designs that are modular and flexible are the key to long term success

Big mistake 7: Misunderstanding PUE

Many times, organizations set a PUE goal with all the proper intentions but the calculation does not take into account all factors that should be considered. You need to fully understand what the ROI is on capital expenses to reach your goals. You need to ask yourself, what is the TCO relative to the target PUE?

Big mistake 8: Misunderstanding certification

- ✓ *Failure to develop a base understanding of the qualifying criteria. This can be remedied by viewing the above referenced document.*
- ✓ *Pursuing certification as an afterthought. Obtaining certification begins at the design concept and ends with a formal certification after project completion. Engage a qualified professional or consulting firm at the start of the planning process.*
- ✓ *There will be costs related to receiving certification. Failure to take these related expenses into account will impact your TCO and business decision planning processes*

Big mistake 9: Overcomplicated designs

When engaging internally or with your chosen consultant, the number one goal should be to keep it simple. Why?

- ✓ Complexity often means more equipment and components. More parts equal more failure points.
- ✓ Human error. The statistics are varied, but consistent. Most data center drops are due to human error. Complex systems increase operational risk.
- ✓ Cost. Simple systems are less costly to build.
- ✓ Operations and maintenance costs. Again, complexity often means more equipment and components. Incremental O&M costs can increase exponentially.
- ✓ Design with the end in mind. Many designs look good on paper. It is easy for you or your consultant to justify the chosen configuration and resulting uptime potential. However, if the design does not consider the “maintainability” factor when operating or servicing, the system’s uptime and personnel safety will be compromised.

Data Center Planning Process

1. Establish key project parameters

2. Develop system concept

3. Determine and incorporate user preference and constraints

4. Determine implementation requirement

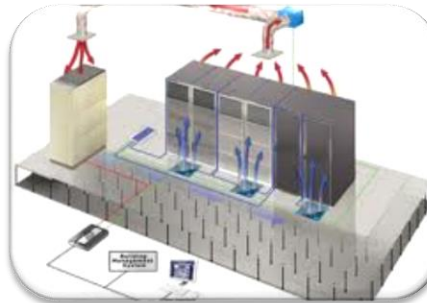
What are implementation requirement..?

Standard, codes, deadlines, resource assignment and other process requirements

Key project parameters



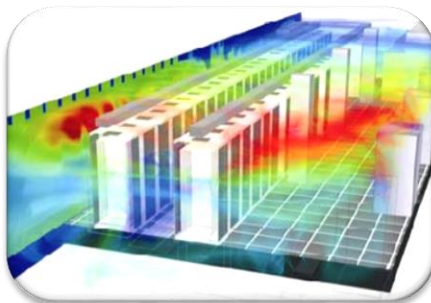
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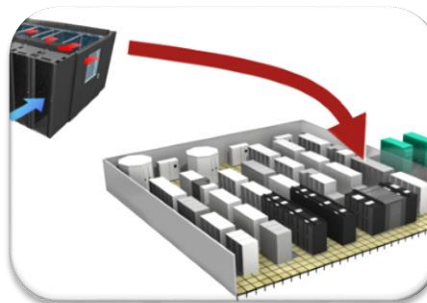
Capacity



Growth plan



Efficiency



Density



Budget

Conclusion

1. Start with a Total Cost of Ownership approach

- ✓ Evaluate your risk profile against your business expense profile
- ✓ Create a model that incorporates CapEx, OpEx and energy costs

2. Determine your design criteria and performance characteristics

- ✓ Base this criteria on your risk profile and business goals
- ✓ Allow those criteria to truly determine the design, including tier level, location and space plan—not the other way around

3. Design with simplicity and flexibility

- ✓ Use a design that will meet your uptime requirements, but will also keep costs low during construction and throughout operation—simplicity is key.
- ✓ Accommodate unplanned expansion by incorporating flexibility into the design

4. If PUE and are part of your criteria, become educated on the common misunderstandings and expenses associated with each.

Through proper planning using the TCO approach, you can create a data center facility that meets your organization's performance goals and business needs today and tomorrow.



Thank
You

