

*September 17-18, 2008 in San Francisco, California*

**Risk Management Techniques and Practice Workshop**  
*for High-Performance Computing Centers*

## Track 2, Session 4 Real Life Risk Experience

**Managing HPC Business Risks: "Herding  
Cats and Dollars" or "Where DOES the  
buck stop?"**

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Business risks are numerous, critical, and challenging. How are vendor interdependencies best dealt with (including equipment, software, schedules, and failure rates)? How to ensure that you can actually house the systems, meet security plans, and afford to operate the systems? How to estimate and plan for lifetime issues like maintenance, staffing, cooling, and electrical costs? How are other parts of the infrastructure impacted, such as data archives and networks? We will discuss how to think about, capture, and measure major business risks... so there is a next time.

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## Session 4 Participants

Goldberg	Ira	ANL	LEAD
Pennington	Rob	NCSA	LEAD
Tomlinson	Bob	LANL	NOTES

Ballance	Robert	SNL	
Boudwin	Kathlyn	ORNL	
East	Douglas	LLNL	
Kovatch	Patricia	UTenn/NICS	
Minyard	Tommy	TACC	
Monsein	Jonathan	DOD	
Quinn	Terri	LLNL	
Saiyed	Sohel	IBM	
Sekine	Yukiko	ASCR, DOE/HQ	
Verdier	Francesca		NERSC
Yip	Warren	DOE Site Office	

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# Top Risks in (area)

- Environmental
  - Environmental considered at the local level.
  - Continuity of the scientific programs not considered unless mission critical
- Financial.
  - Cash flow for the project
  - Vendor viability
- Human
  - Management support
  - Maintaining effective project team
  - Communications and expectations

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# Top Risks in (area)

- Products and services
  - Managing quality control in bleeding edge projects
  - Competition for bleeding edge components
  - Creating infrastructure for the next bleeding edge system
- Financial Markets
  - Fluctuations in utility rates
  - Fluctuations in financial markets
- Operations
  - Planning for and meeting operational expectations of the delivered system

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# Risk (1) ... Successful (or not) Mitigation Strategies

- Environmental risks are incorporated into current plans at the sites – mostly satisfactory
- Financial.
  - Cash flow for the project
    - Options to renegotiate the lease or contract*
    - Not standard leases, “lumpy lease payments”*
  - Vendor viability
    - Milestone payments and contract structure*
    - Multiple vendors if feasible*

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# Risk (2) ... Successful (or not) Mitigation Strategies

- Human
  - Management support
    - Communications and project visibility to right decision makers*
  - Maintaining effective project team
    - Professional development/succession plan*
  - Communications and expectations
    - Still some open switches*
    - Talked about information gathering, decision making process,*

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# Risk (3) ... Successful (or not) Mitigation Strategies

- Products and services
  - Managing quality control in bleeding edge projects
    - Step wise process: Get as much information as early as possible, early system access, testing plans, etc.*
    - Agreements to run on other site's systems*
    - More involvement with the vendor development process*
  - Competition for bleeding edge components
    - Unknown*
  - Creating infrastructure for the next bleeding edge system
    - Capacity planning*

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# Risk (3) ... Successful (or not) Mitigation Strategies

- Financial Markets
  - Fluctuations in utility rates
    - Long term contracts*
    - Greener machine rooms*
  - Fluctuations in financial markets
    - Takes more thinking and work*
- Operations
  - Planning for and meeting operational expectations of the delivered system