

2009 Seminar Series
**How to Plan, Justify, and Manage
a Major Data Center Project**

Uptime Institute[™]
professional services

HOW TO PLAN, JUSTIFY, AND MANAGE A MAJOR DATA CENTER PROJECT

Presented by Uptime Institute Professional Services

The issues facing a data center project owner are evolving so rapidly that even those who completed a data center project five years ago are not aware of the current issues surrounding sophistication and complexity (i.e. density, cost, continuous availability, and Operational Sustainability*).

This interactive Seminar and practical tutorial illustrates the most successful approaches used to get a new data center project approved and off to an optimal start with the “right” budget. As with many once-in-a-career projects, the most serious pitfalls occur in the very beginning, before management knows enough to clearly define the project’s life cycle objectives. As a result, many multimillion-dollar data centers recently built, or currently in design or construction, have insufficient capabilities to achieve a 15-year useful life. In fact, most of these data centers will become functionally obsolete within the next five years.

Members of the Seminar faculty have conceptualized and managed billions of dollars in major renovations and new data center or critical facility projects and know how to define and justify a project’s life cycle objectives. The first lesson learned from their collective wisdom is to understand management’s expectations as well as the needs of the business before the project’s schedule and budget are set.

**Operational Sustainability is the capability of a facility to deliver its performance objective over an extended period of time. Considerations include ease of operation, maintenance, and expansion. Sustainable sites have the ability to adapt and respond to the business requirements over the long term.*

Data centers have grown so critical to the success of the business community and have become so expensive, it is unthinkable not to have an independent third party validate the program.

Attendees Will Take Home:

- A game plan to get buy-in across the organization
- The need to understand the rules of engagement
- Ability to develop and then articulate data center program strategy and requirements so that upper management will understand them in order to avoid both surprises and disappointment
- How to prevent your data center from prematurely becoming functionally obsolete
- Confidence to claim and maintain ownership of your own project
- An action list of things to start doing on your return to the office
- How to match your business needs to the Tier level and other key criteria

Seminar Agenda

Day One

8:00 a.m. to 5:00 p.m.—including breaks with reception and dinner following

Participant Introductions (approx. 60 min.)

A brief sketch by each participant describing their job responsibilities, size of facility, company uptime goals, consequences of downtime, why a new facility or major site infrastructure upgrade is important, and seminar expectations. This is the first opportunity to begin to network with other participants.

Establishing Business Case for Infrastructure Reliability (approx. 60 min.)

Faculty presentation on successful techniques used to justify billions of dollars in site infrastructure investment. Discussions include business drivers and identification of key business units, building on the impacts of downtime, site infrastructure investment relative to life cycle IT investment, and many other viable concepts.

Setting Achievable Expectations and Managing Perceptions (approx. 90 min.)

Most projects fail before they begin because the project team is given (or accepts) assumptions, goals, budgets, and schedules that are unattainable or do not satisfy the user's expectations. It is a fundamental mistake to commit to a budget before the project's Fault Tolerance, Concurrent Maintenance, power densities, and other life cycle performance requirements are fully defined. Discussion will include project management strategies that have been used very effectively as well as case histories of approaches that have not worked as well.

Lunch Break

Lunch is provided to enable participants to interact with each other and the faculty.

Selecting and Managing Your Project Team (approx. 60 min.)

Faculty presentation includes ways to assure project success by keeping end user, senior management, and departmental expectations aligned with your delivery capability. Assemble an internal team and build a strategic alignment between internal organizations that may have conflicting goals. Develop processes for defining user performance requirements and use them to drive the project. Define internal project reporting relationships, anticipate a project audit, set up a senior management steering committee, and regularly provide the information needed to guide the project around problems. Select and manage external consultants. Set achievable schedule timelines. Create and manage the project budget. Manage peer review processes and prevent value engineering from becoming arbitrary cost cutting.

The Technology Warehouse™ (approx. 90 min.)

Many new data centers become obsolete within five years because they did not anticipate an ever increasing demand for uninterrupted uptime, higher power densities, and other changes in computer hardware environmental requirements. New facilities should have sufficient flexibility to accommodate at least three generations of hardware that have not been invented. The design must have sufficient Fault Tolerance and Concurrent Maintenance to satisfy information uptime requirements at the end of its useful life. The faculty will present and describe the Institute's Tier Standards and The Technology Warehouse as a modular approach for flexibly accommodating unknown future requirements. The objective is to minimize initial investment while preserving flexibility to respond to future options and the ability to transparently increase capacity and performance when business needs are clearer. The goal is to achieve a strategic solution that can exceed the normal expectation of a 15 -year design life. Successful sites incorporate the ability to respond to increasing business expectations without the need to replace this key asset.

Managing the Project Approval Process (approx. 60 min.)

The project team is responsible for preparing multiple levels of materials to address the detailed concepts necessary to develop a realistic budget. At the same time, they must also boil the project down into a simple yet effective statement of goals, benefits, and costs that must fit on one or two pages. Appropriate use of internal buzzwords and other corporate culture can help speed approval.

Reception and Group Dinner

The seminar continues with a cocktail reception and dinner, allowing participants, seminar faculty, and Institute staff to interact informally. Participants and faculty are free to pursue topics presented during the seminar, explore outside related topics, or even address specific issues at a participant's data center. All Institute programs assume every participant brings something unique to the learning of the group. Previous participants consistently report that the informal discussions at meals or in the hallway about "back home" problems provided invaluable benefits.

Day Two

8:00 a.m. to 1:00 p.m.—including breaks

Best Practices and Lurking Vulnerabilities (approx. 60 min.)

Faculty presents a virtual tour of photographs illustrating best practices that should be emulated in your project, as well as lurking vulnerabilities that should be avoided. This session always stimulates lively discussion.

Critical Power Distribution Architectures (approx. 30 min.)

Describes the more common ways to accommodate single corded IT devices in more sophisticated data centers. Discussions include how solutions avoid failure exposures, as well as the benefits and the relative costs of the solutions.

Continuous Cooling and Cost Model (approx. 40 min.)

Continuous cooling describes the reason cooling must have the same uninterruptability as critical power for the servers. Case studies will be shared demonstrating the risks of just having cooling systems on the engine generator. Data center cost model white paper will be discussed to increase participant understanding of the major cost drivers for a data center.

Impact of Increasing Density on Economics (approx. 45 min.)

As Moore's Law continues to drive higher densities, a profound shift in relative costs between the building and the IT components has materialized. This session addresses that shift and what it means to future data centers.

Packaging (and Sometimes Repackaging) Your Project (approx. 30 min.)

The best story to support a data center project may still not be accepted if some common and easy-to-avoid failures are not anticipated. This session addresses ways to overcome push back and get the message to the decision makers.

Road Map and Concept Review (approx. 30 min.)

Faculty presentation on techniques and tools for keeping project strategy and progress aligned with senior management's expectations. Review the four project phases and the critical success factors for each phase. This session reviews and summarizes seminar concepts, in addition to providing a work plan to get started on the return to your office.

Seminar Wrap-Up (approx. 20 min.)

Review seminar participants' expectations and address remaining questions.

Adjourn

Seminar Faculty

Each seminar is presented by Principals of Uptime Institute Professional Services, who are also members of the Uptime Institute's faculty. They have the expert knowledge to assist participants in achieving their uptime goals. The faculty draws on years of experience in data center project approval efforts, design, construction, and ongoing operations to provide practical, relevant, applicable information. Most importantly, the faculty interacts directly with each individual or team to help define projects and develop a shared perspective of the desired outcome.

In this Seminar, we draw on the expertise of the following faculty members:

W. Pitt Turner IV, P.E. is a Distinguished Fellow and Senior Certification Authority for the Uptime Institute and a faculty member for the Institute's Site Uptime Network. As President and a Principal of Uptime Institute Professional Services, Mr. Turner has personally guided billions of dollars in client site infrastructure investments. Prior to joining Uptime Institute Professional Services in 1993, Mr. Turner was a Senior Project Manager for Pacific Bell's Fairfield Data Center; he was responsible for concept development, design, construction, and start-up for a 200,000-ft² facility. His work included the benchmarking of other data centers to help establish business-process improvements.

Vince Renaud, P.E. is a Distinguished Fellow and Certification Authority for the Uptime Institute and a Principal of Uptime Institute Professional Services. Mr. Renaud has provided leadership and strategic direction to maintain the highest level of infrastructure availability. In varying roles from data center owner and operator to consultant, Mr. Renaud has provided planning, design, construction, operation, and maintenance of mission critical facilities for the Department of Defense and Fortune 100 companies on a world-wide basis.

John H. Seader, P.E. is a Distinguished Fellow and Certification Authority for the Uptime Institute and a Principal of Uptime Institute Professional Services. Mr. Seader's career in critical facilities spans more than 15 years and includes responsibilities ranging from planning, engineering, design, and construction to start-up and operation for clients such as the Department of Defense, Sabre, and Williams Communication. Prior to joining Uptime Institute Professional Services, Mr. Seader was a Senior Technology Manager for Deloitte Consulting Outsourcing, LLC.

Kenneth G. Brill is founder and Principal Consultant of Uptime Institute Professional Services, as well as founder and Executive Director of the Uptime Institute, the Site Uptime Network, and Upsite Technologies. He is co-originator of the industry standard Tier Classification System and holds the underlying patent on dual-power topology.

About Uptime Institute Professional Services

Uptime Institute Professional Services is the data center engineering and management consulting group of the Uptime Institute. Our mission, as Owner's Representative, is to address technical aspects of contemporary data center issues. Our consultants bring first-hand expertise from data center planning, design, construction, operations, and management to their evaluations of existing and proposed facilities. Uptime Institute Professional Services is the only firm qualified to consult and Certify facilities to the Institute's Tier Classification System and Operational Sustainability.

About the Uptime Institute

The Uptime Institute, Inc. is a pioneer in creating and operating knowledge communities for improving uptime effectiveness in data center Facilities and Information Technology organizations. The 100 members of the Institute's Site Uptime Network are committed to achieving the highest levels of availability with many being Fortune 100 companies. They interactively learn from each other as well as from Institute sponsored meetings, site tours, benchmarking, best practices, uptime effectiveness metrics, and abnormal incident collection and trend analysis. From this interaction and from client consulting work, the Institute prepares white papers documenting Best Practices for use by Network members and for the broader uninterruptible uptime industry. For the industry as a whole, the Institute publishes white papers and offers a Seminar Series, Symposium, and Design Charrette Series on critical uptime-related topics. The Institute also conducts sponsored research and product certifications for industry manufacturers. For users, the Institute certifies data center Tier level and site resiliency.

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