



### The Data Center Challenge



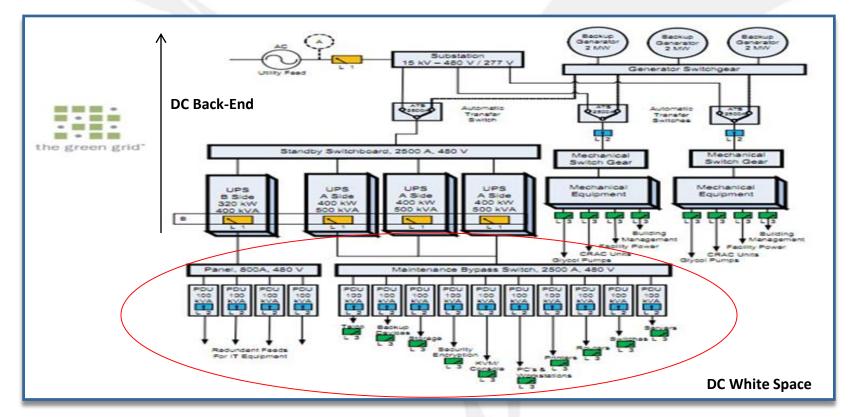
### High Availability versus Efficiency







#### White Space & The Back-End: The Great Divide



Q1: How Do You Avoid Single Point of Failure?

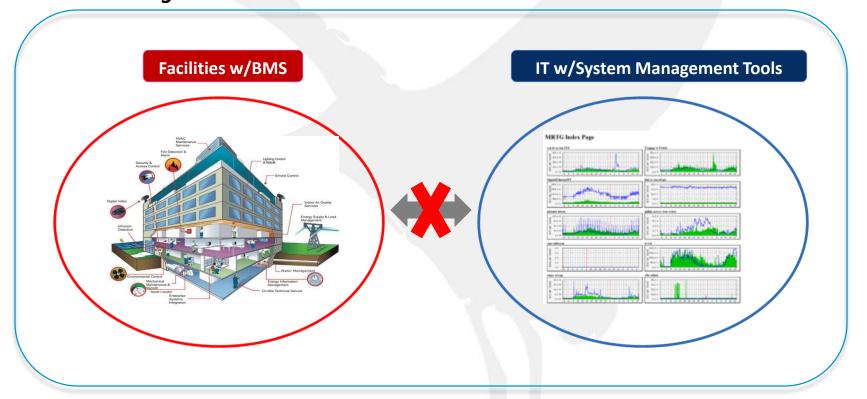
Q2: How Do You Reduce Data Center Costs?







#### **Monitoring in Silos**



#### **Data Center Failure is Inevitable**







#### **Asset Management Through Multiple Spreadsheets**

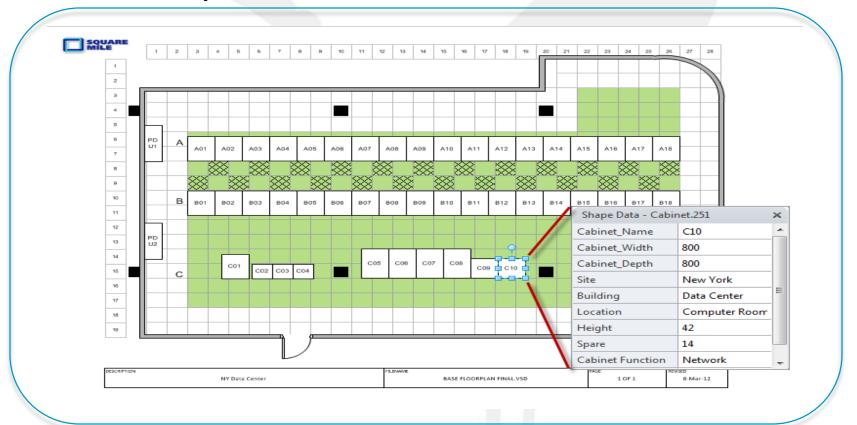
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Engineering Cost of Service	5,244,185 211.46% 1,029,1 5,292,819 213,42% 1,029,1																Cost of Service														5 1,820,648 1			
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**Data Inconsistency & Complexity in Management: Source of High Costs** 





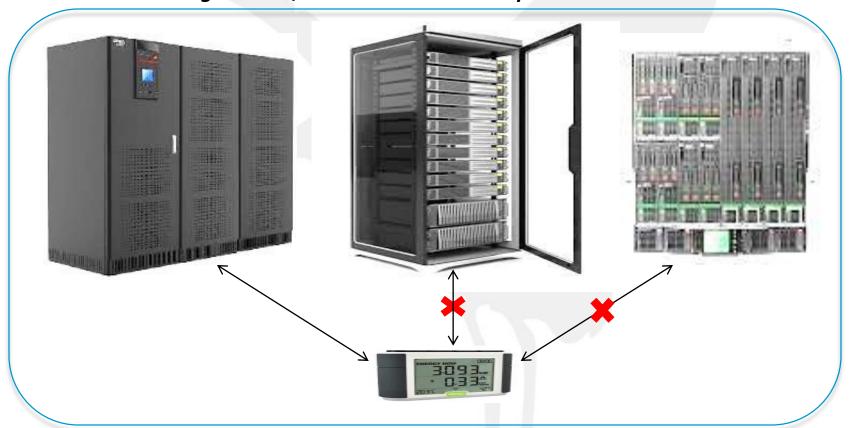
#### Data Center Layout with Visio-like tools



Static and No Real-time View of Available Power & Space Capacities. Lack of Capacity Planning Leads to High Capex & Poor Asset Utilization



#### PUE Monitoring Absent , Inconsistent or Incomplete

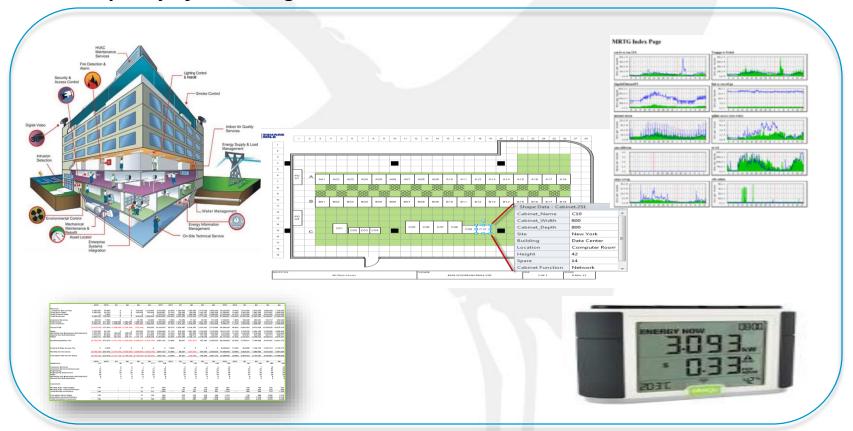


**High Power Usage Accounts for >40% Operating Costs of Data Centers** 





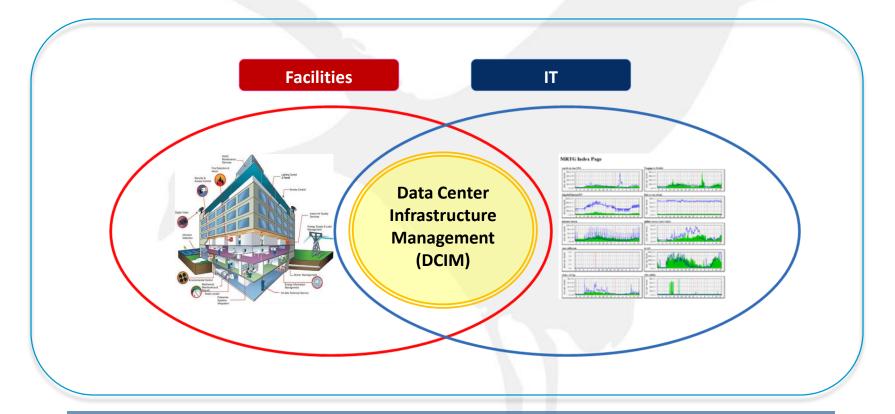
#### Multiplicity of non-integrated tools



No Analysis of Data Collected in Different Systems : Higher Capital Costs, Higher Operating Costs, Higher number of failures



### The Origin of DCIM: Bridging the Gap



DCIM: Single solution for end-to-end data center operations







### DCIM Today: for DC Operations, Planning & Management

**Power & Environment Monitoring with Alerts** 

DCIM
Policies
(Data
Center
SOPs)

**Asset Lifecycle Management** 

**Capacity Planning with What-if** 

**DC Layout - Visualization & Modelling** 

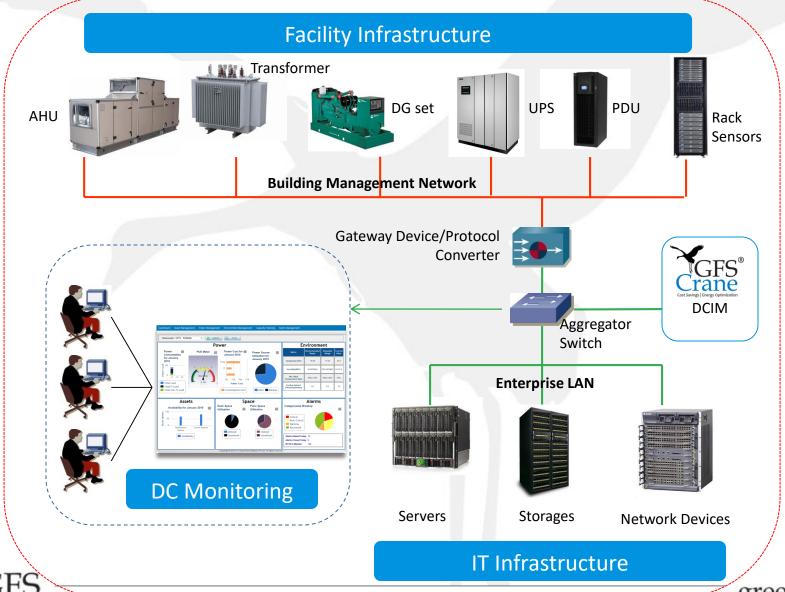
**Change Management - Workflow & Audit Trail** 

Dashboard, Analytics &





### Operations: Single Monitoring Console for Facilities & IT





# Planning: Capacity Forecasting, Maintenance Scheduling & Asset Rationalization

#### Capacity Forecasting for Power Space & Cooling:

- avoiding stranded capacities
- Inventory management & provisioning

#### Preventive Maintenance Scheduling:

- Power chain shows dependencies
- coordination to avoid disruption of critical services

#### **Asset Rationalization:**

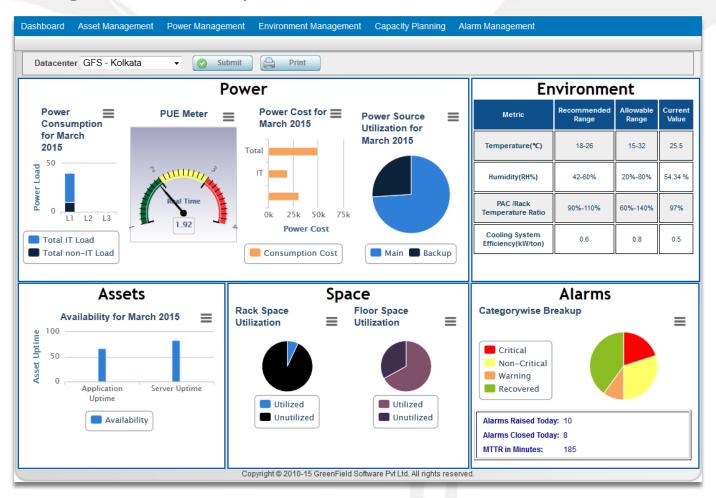
 Based on Aging Analysis, Replacement Policies and Utilization: which servers to decommission, replace or virtualize







#### Management: Analytics, Dashboards & KPIs



#### **Role & Customer-based Dashboards**



## How DCIM Helps

Since DCIM Software dynamically captures information related to asset utilization, power consumption, environmental conditions, it:

- Helps Data Center Manager avoid unnecessary over-provisioning
- Helps plan investments and new capacity
- Helps reduce the capital costs
- Helps reduce power use and other operating costs
- Helps reduce risk of failures through critical alerts
- Helps adapting to technical and business change more easily
- Helps improvement plans through real-time metrics & dashboard





### **Customer Value Proposition**

#### Smaller DCs (20-50 racks)

- Mitigates risk of data center failures or fires. Smaller data centers do not have a tool to monitor temperature, UPS or rack load.
- 2. Provides up-to-date centralized asset inventory with preventive maintenance schedules.
- 3. Provides visibility into hidden capacities of the data center such as power, cooling and space.
  Helps avoid costly upgrades by extending the DC life

Mid-size Captive/CoLo DCs (50-200 racks)

- 1. Better capacity forecasting with simulation and 'what if' analysis to optimize DC resource utilization
- 2. Provides uptime reports of critical devices in SLA-driven operations; provides impact analysis capability, change management and audit trails
- 3. Improves data center PUE and energy efficiency of the data center as part of overall cost optimization and sustainability drive of the organization





Questions	Answers
I have a BMS and a System Management Tool. Why do I need DCIM?	BMS is a monitoring tool for Facility devices. It does not provide visibility to IT on changes & problems at Facilities end that can impact rack loads. Vice versa, System Management Tools do not help Facility Teams for deciding if extra (or less) power or cooling is required.
DCIM needs a BMS. I am not willing to invest in that.	Yes, traditional DCIM does need a BMS for raw data. But GFS Crane is different. It provides the software layer of a BMS. All you need are a few environmental probes & power meters – rest will be done by GFS Crane.
How do I get L3 PUE from DCIM if we are not allowed to directly monitor the IT devices?	GFS Crane DCIM provides L3 PUE reading rack power from iPDU. If OIDs are available for sockets, then socket level power data will provide, in non-intrusive manner, actual power consumption of rack device.
There's too much manual effort involved in creating Asset Database	With Auto-discovery and in-built OEM Library, we have automated this area.
DCIM is too expensive	GFS Crane allows modular licensing – you can procure additional licenses as needs increase. We also have annual subscription licensing for those who prefer this to CAPEX model.

