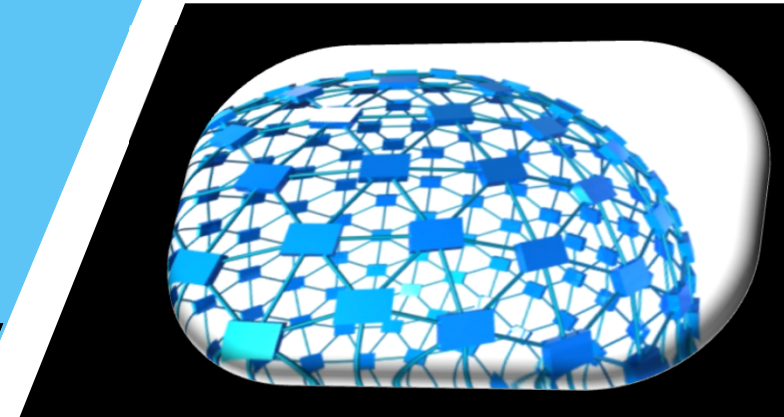


Mike Schaberg, PMP, PMI-ACP



Partnering on your Journey

OSM&E, PMO, Traditional, Agile, Hybrid



Office of Strategic Management & Execution

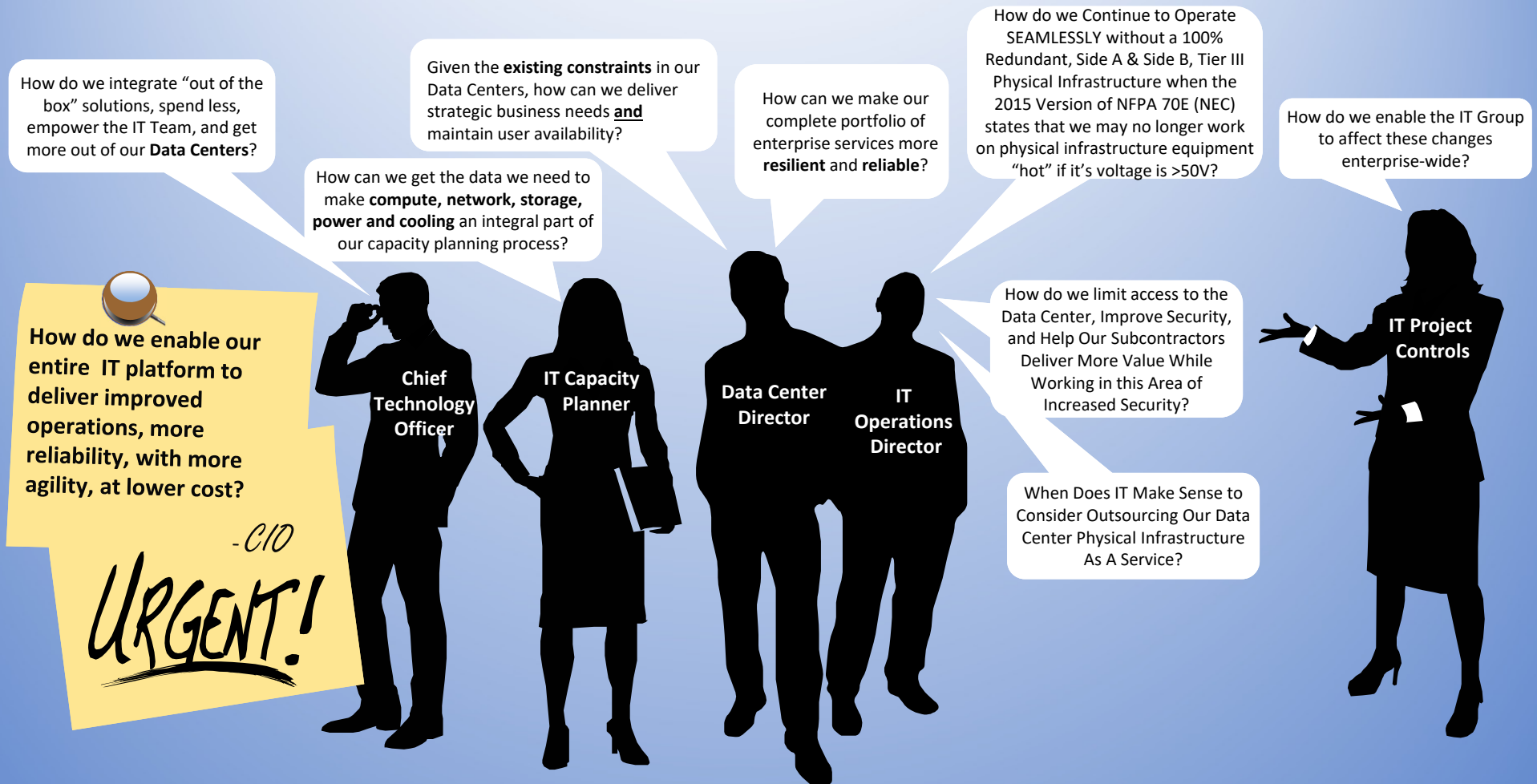
In Business Since January 21, 2004

*IT Project Developer, IT Project Manager,
Micro-Data Center SME*

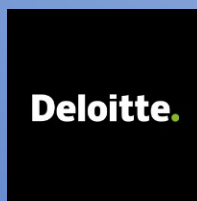
IT Infrastructures, Hardware, & Software



What Are Clients Thinking?



What Are Clients Being Told?



“Define Business Strategy, Embed Technology Into Strategy From The Outset”

November 7, 2017

Client Summary

■ One Size Does Not Fit All

■ We Need Business Strategy & Technology Solutions Designed in Parallel

■ Maximize Business Enablement With IT

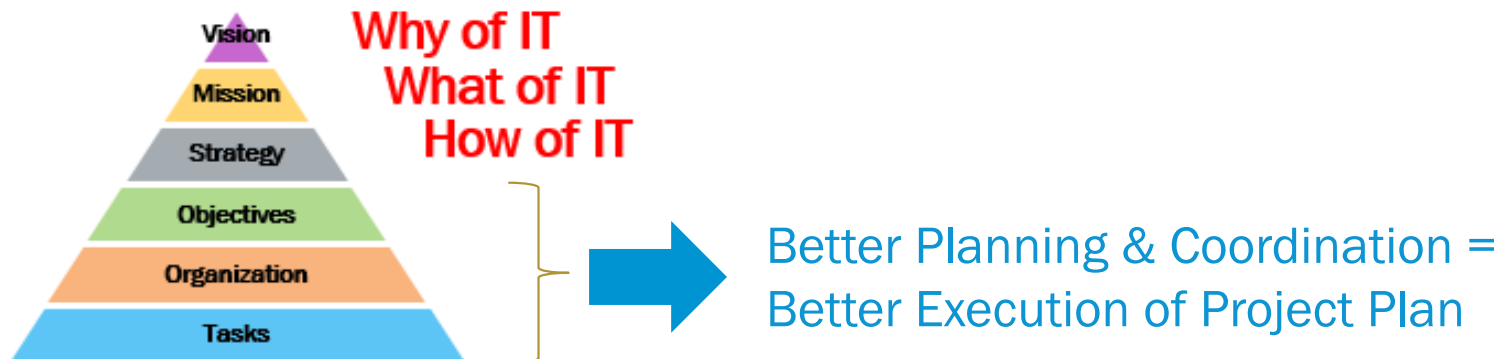
- *Decisions Need to be Balanced between Revenue Generation, Capital & Operating Costs, ROI, Value, Technology Debt Reduction, etc.*
- *Need to Address Regulated/Non-Regulated*
- *Modular & Scalable – Grow As We Go*
- *Build Own Operate, Colo, IaaS*
 - *Security (Physical & Data) Associated With Each*
- *Location, Location, Location*
 - *Network Connectivity, On Premise, Off-Premise, Edges, Follow the Fiber*

■ How Do These Things Relate To The Data Center?

- *Strategy + Technology Business Enablement + Lifecycle Analysis = Optimized Data Center*

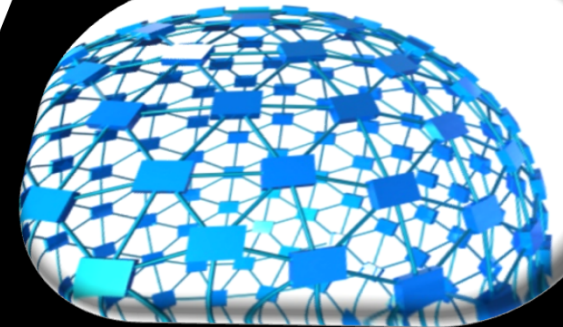
How Did This Evolve

- In October 2005, Harvard Business School professors, Robert S. Kaplan and Andrew Pateman, recognized a “disconnect” between strategy formulation and its execution. Their 15-year study identified the root cause to be, "that many enterprises have strategic plans, but few have a strategy execution process".
- From our experiences and this industry related supporting research, The Office of Strategic Management & Execution (OSM&E) was born. Originating from an expressed business need to improve IT project outcomes by more closely aligning project solutions with strategic initiatives, OSM&E concentrates on infusing our client's strategic initiatives into every IT project outcome we provide. With this approach, and experiences from lessons learned in the Data Center since 1987, KLM Services is able to deliver the most successful critical Information Technology project outcomes. We are Implementation Executives that our focused on Eliminating “The Gap” between Strategic Initiatives Management (SIM) and Operational Project Management (OPM) Within Information Technology.



Partnering on your Journey

OSM&E, PMO, Traditional, Agile, Hybrid



IT Solutions Deliverables

- ***Office of Strategic Management & Execution***
 - Strategic Initiatives Management (SIM)
 - Operational Project Management (OPM)
 - Project Development (PDM)
 - Project Procurement (PPM)
 - Project Management (PMO)

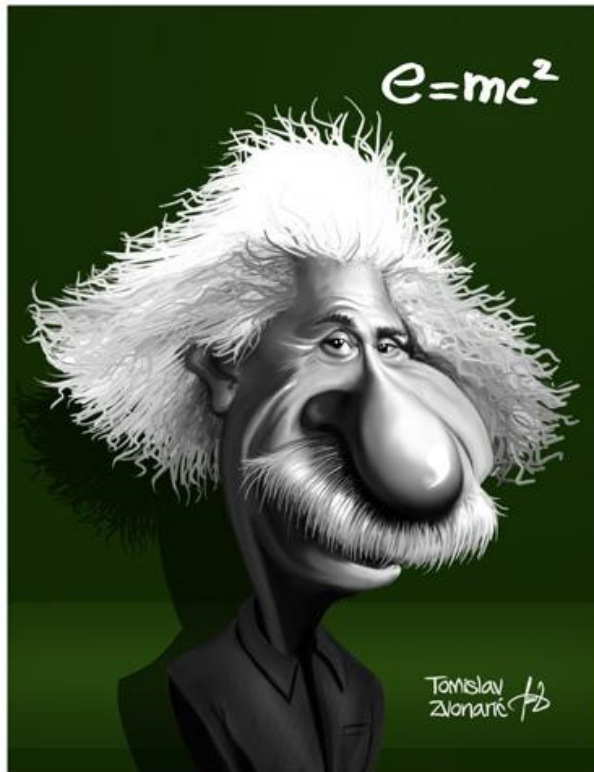


Implementation Executives

Our Strategic Approach

“Concern for man and his fate must always form the chief interest of all technical endeavors. Never forget this in the midst of your diagrams and equations!”

Albert Einstein



**Promote Creative
Enterprise-Wide
Collaboration, Disseminate
Strategy, & Execute!**

“Imagination is more important than knowledge. For knowledge is limited to all we know and understand, while imagination embraces the entire world, and all there ever will be to know and understand!”

Albert Einstein

Office of Strategic Management & Execution

**Corporate
Master Plan
Priorities**

**Capital & O&M
Bus Unit Delineation, Budgets, Management Practices**

Capital Budgets

O&M Budgets

Mgmt & Best Practices

Requirements
Management

Organization

Integrated
Planning

Integrated
Scheduling

Financial
Baseline

Integrated
Performance
Mgmt

Baseline
Mgmt

Supplier Integration

Risk, Issue & Opportunity Mgmt

Program Communication

Help Needed & Independent Review

Leadership & Accountability

**Improved
Execution &
Outcomes**

Office of Strategic Management & Execution

**Corporate
Strategic
Initiatives**

**Corporate
Master Plan
Priorities**

Scalable Project Management Best Practices

Program Performance

Strategy & Business Plan

Business Offer

Requirements
Management

Organization

Integrated
Planning

Integrated
Scheduling

Financial
Baseline

Integrated
Performance
Mgmt

Baseline
Mgmt

Supplier Integration

Risk, Issue & Opportunity Mgmt

Program Communication

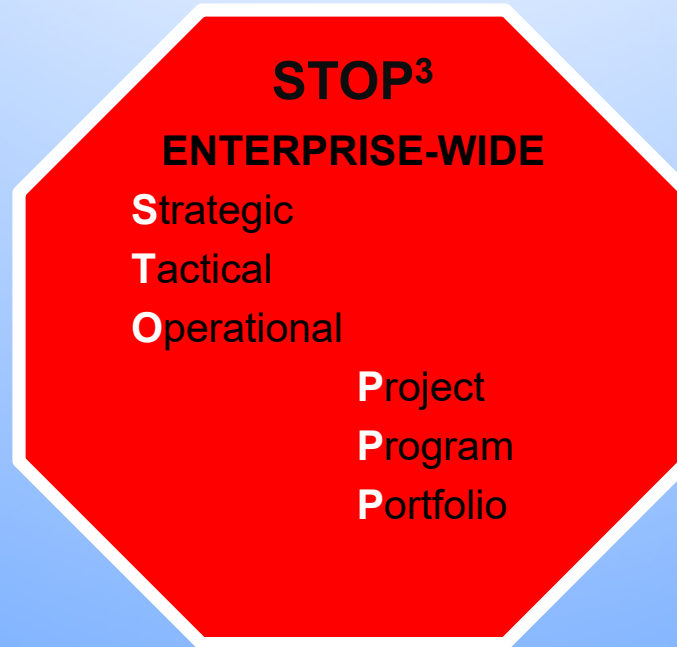
Help Needed & Independent Review

Leadership & Accountability

**Improved
Execution &
Outcomes**

Enterprise Asset Management

In Addition to KLM's SIM & OPM Execution, it's Imperative that WE (Client & KLM) Concentrate on Client Enterprise Asset Management. KLM delivers this with our STOP³ process.



Key Elements

- Strategic
- Tactical
- Operational

Asset Integrity

- Design
- Technical
- Lifecycle

Cultural

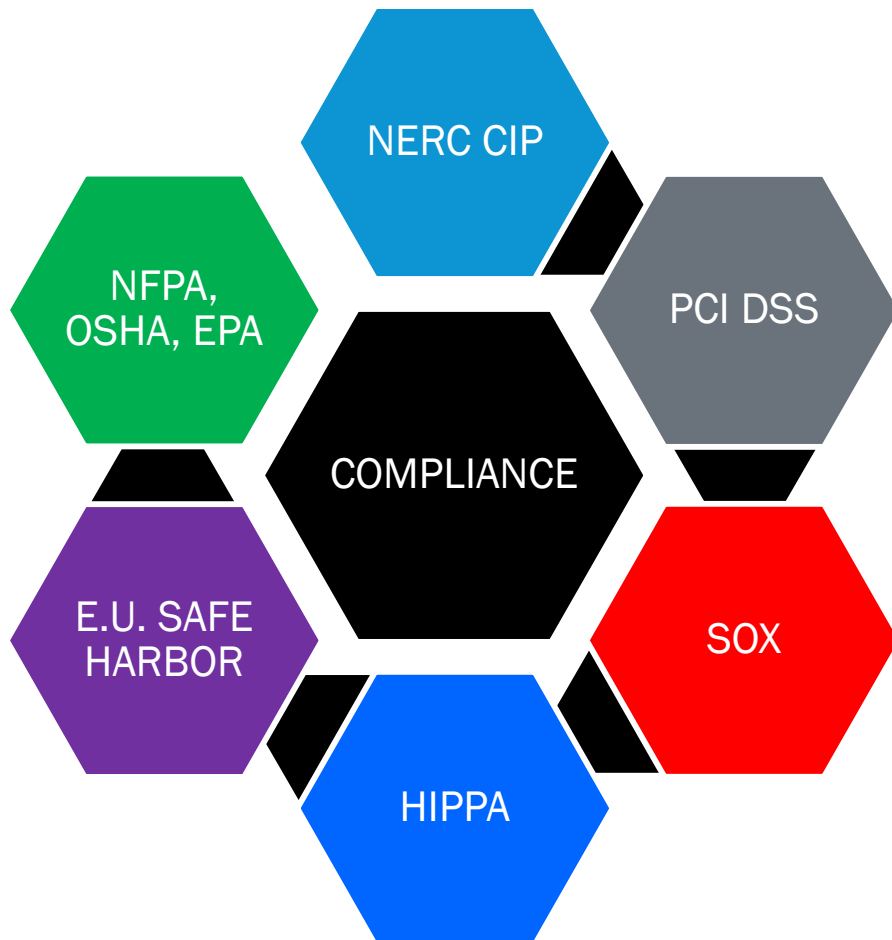
- Change Management
- Communications
- Standardization

Basics for Mission Critical Infrastructures

■ Two Fundamental Components

- *Infrastructure Topology*
 - Tier Classifications – Physical, Virtual, Maintenance
- *Operating Behaviors*
 - Qualified Staff & Organizational Structure
 - Preventative Maintenance (OEM Recommended is the MINIMUM)
 - On-going Training
 - Planning, Coordination, & Management
 - Operating Conditions

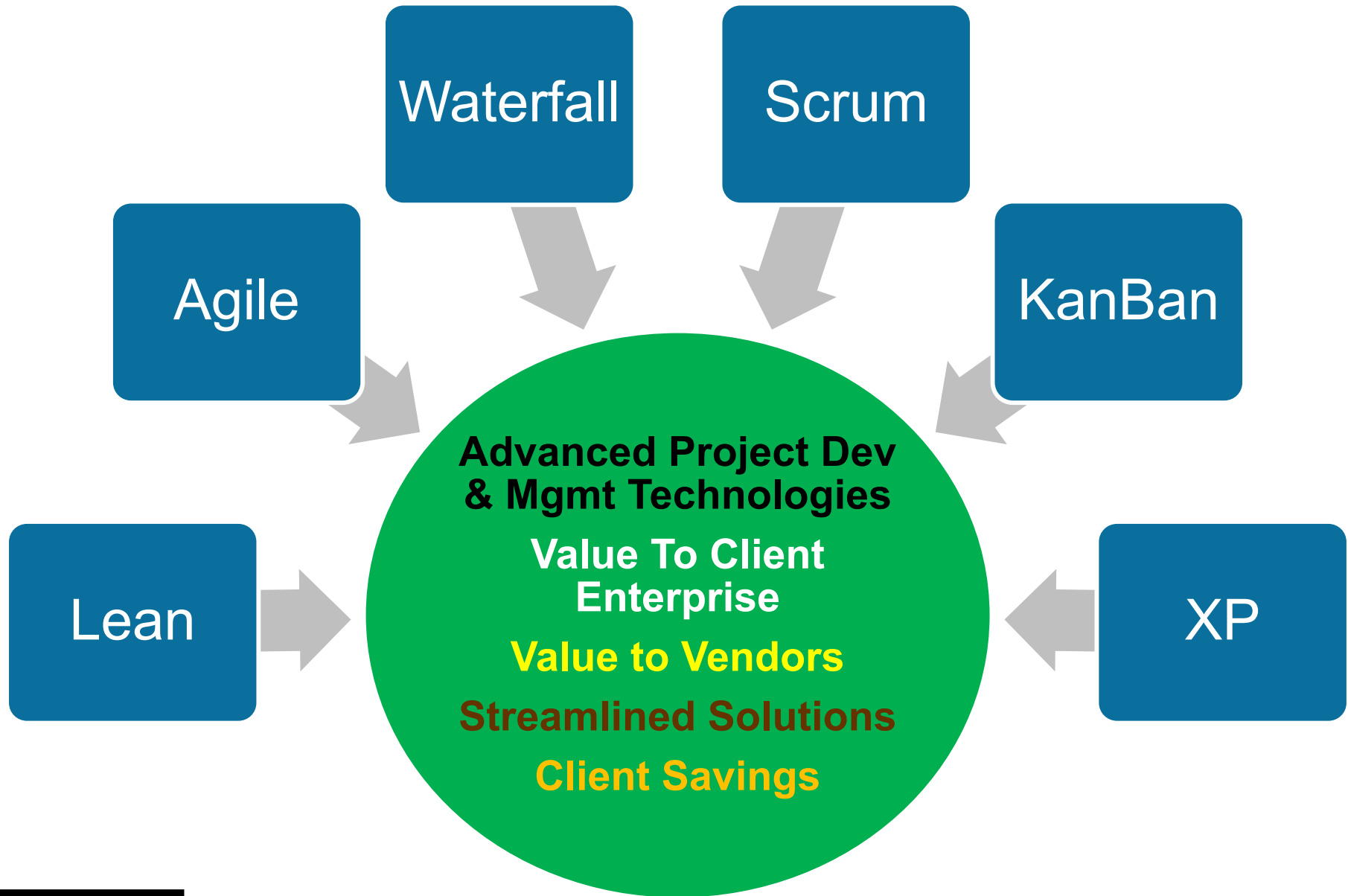
Regulatory Compliance & Cyber Security



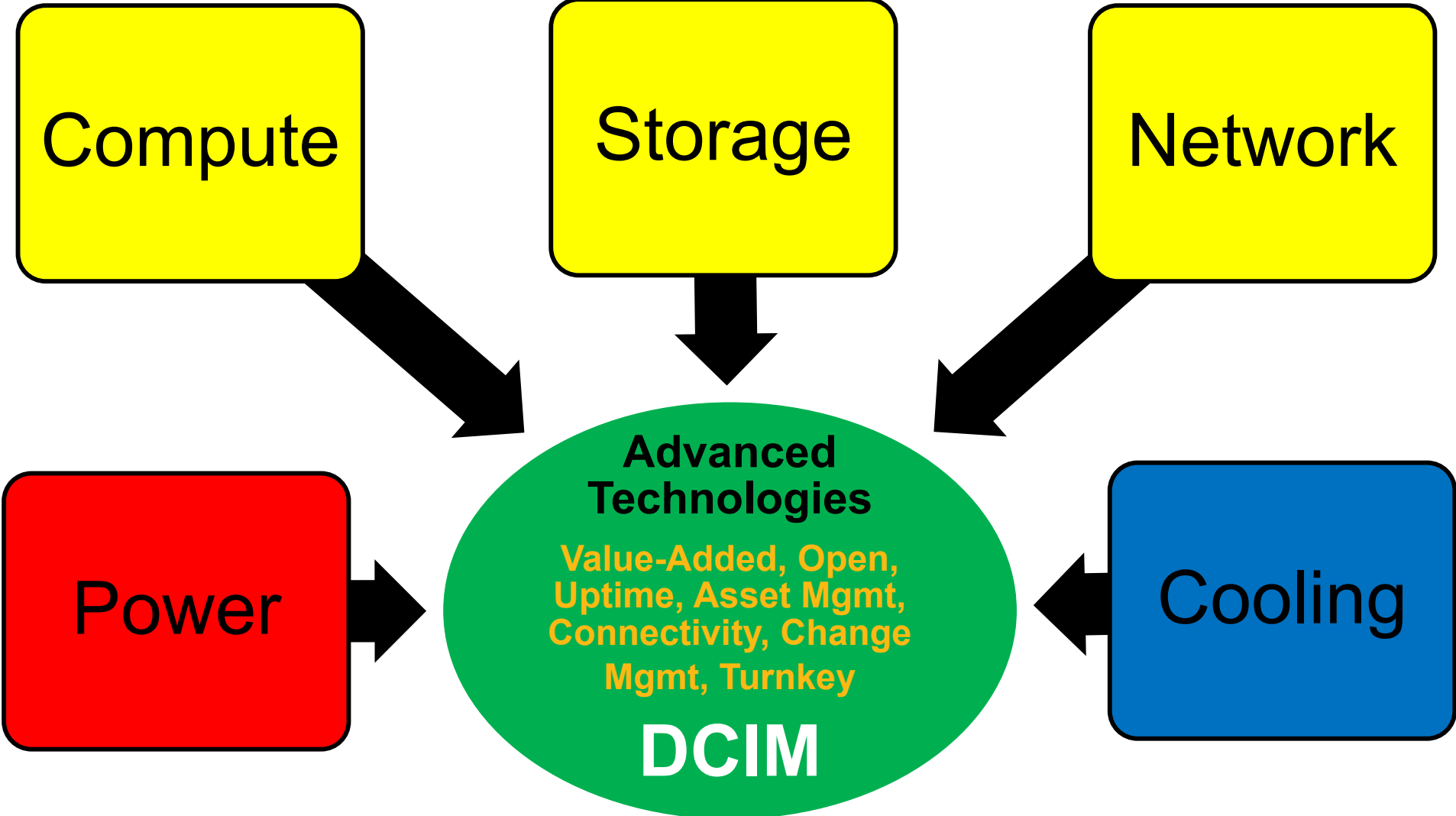
Must Move Beyond Cyber Security as a Control Function to an Integrated and Resilient Approach/Strategy

- Develop A Plan to Align Business with Technology
- Assess Business Information Assets & Risks
- Identify Business Process Changes Needed to Protect Critical Assets
- Implement Leading Edge Technology Controls
- Ensure Sustained Business Engagement

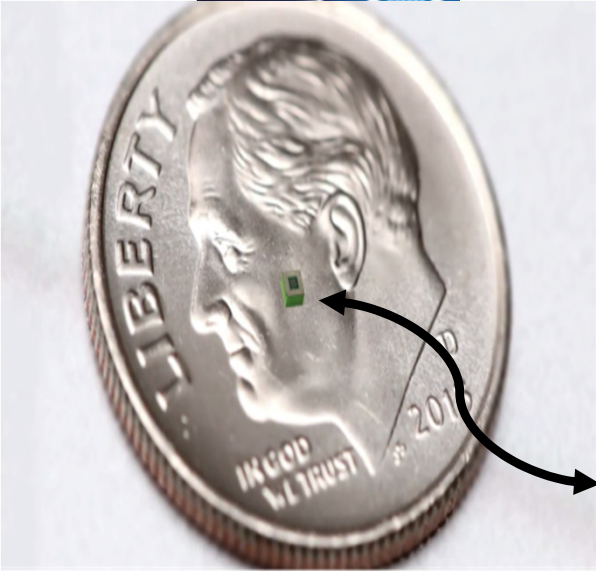
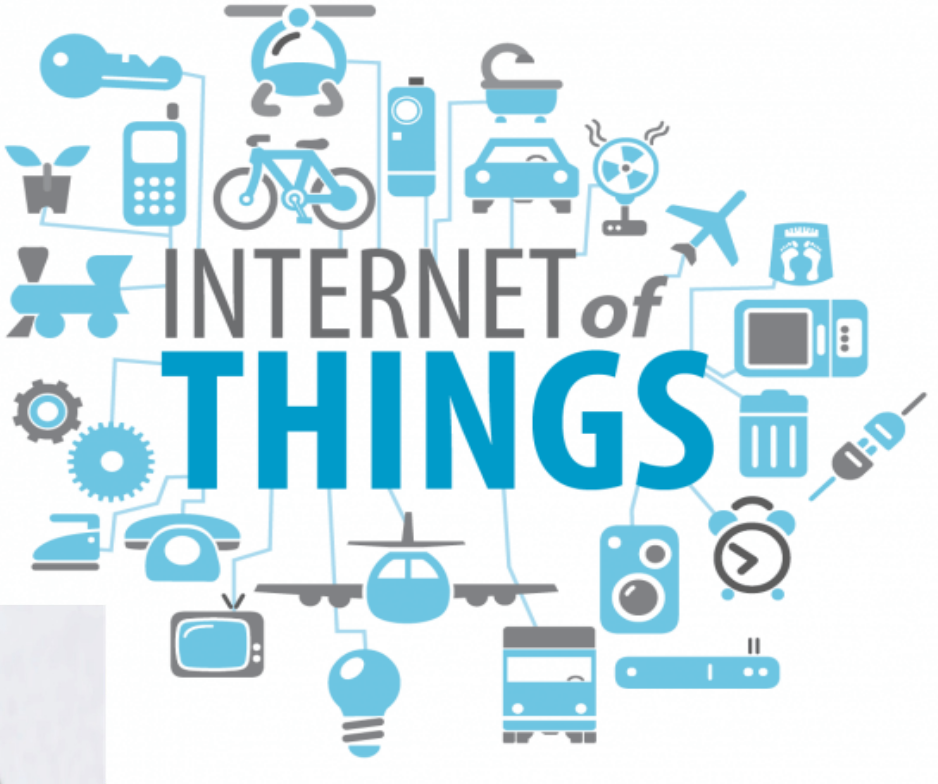
Project Management Using Adaptive Hybrid



The Big Five or “Micro DC”

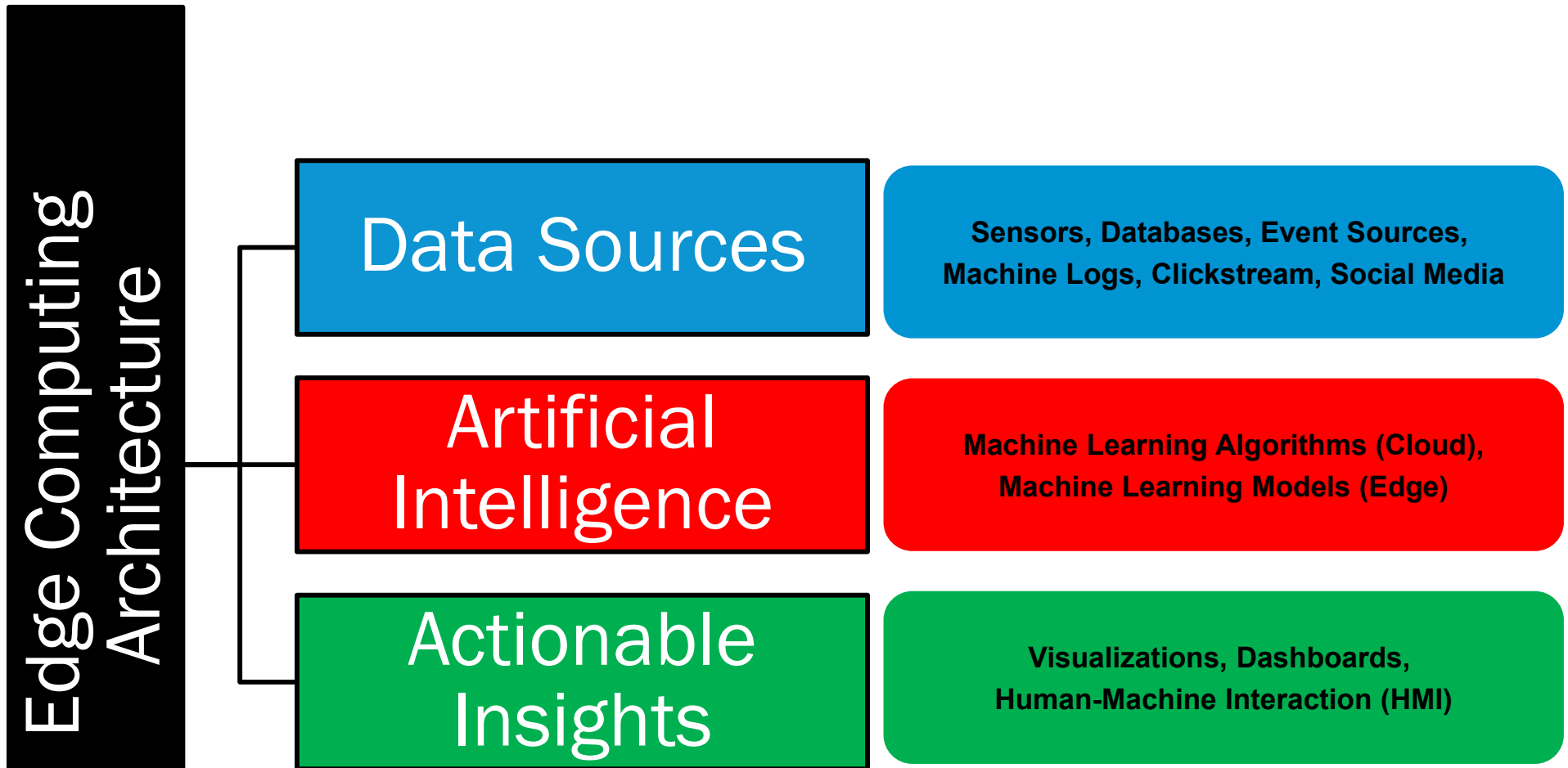


Why Must We Prepare



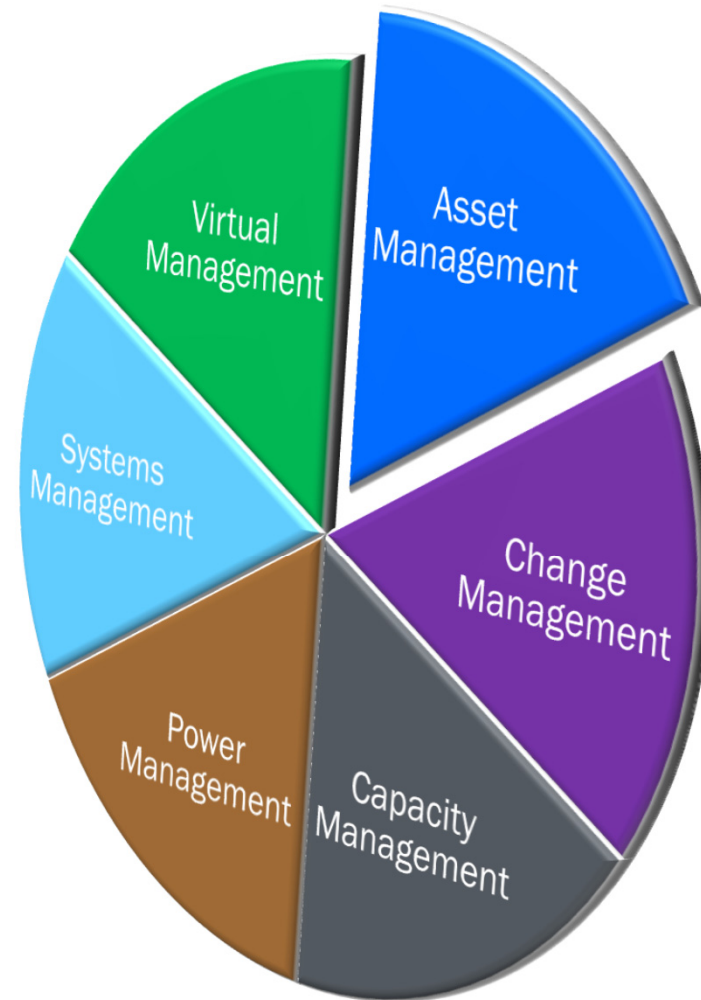
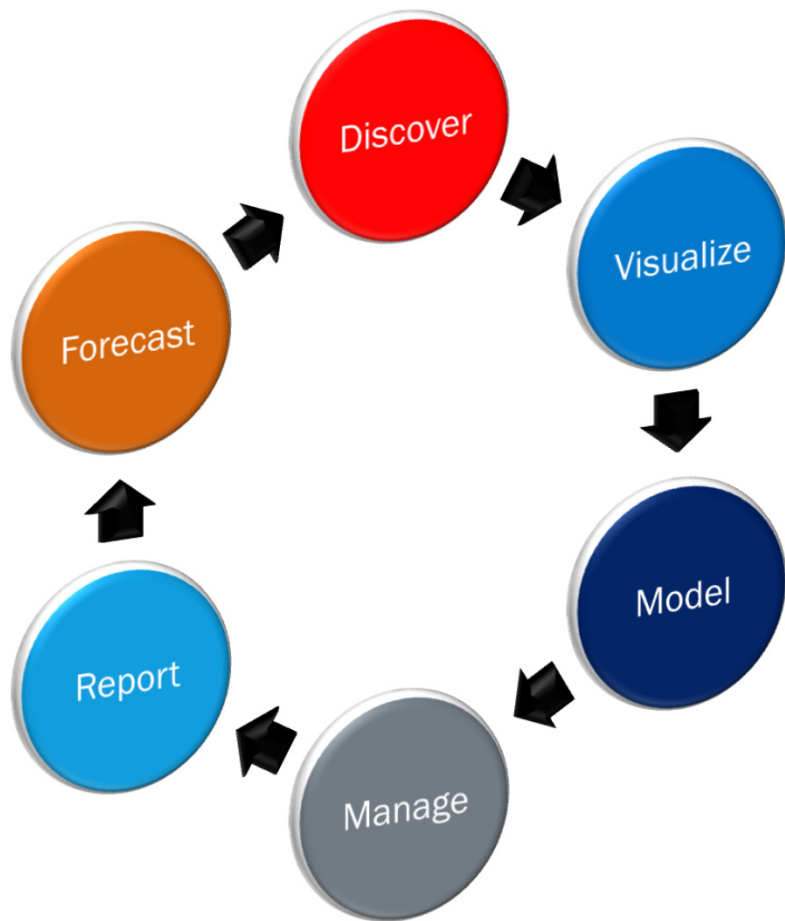
MEMS
MicroElectroMechanicalSystems

Edge (On-Premise) Computing Influence

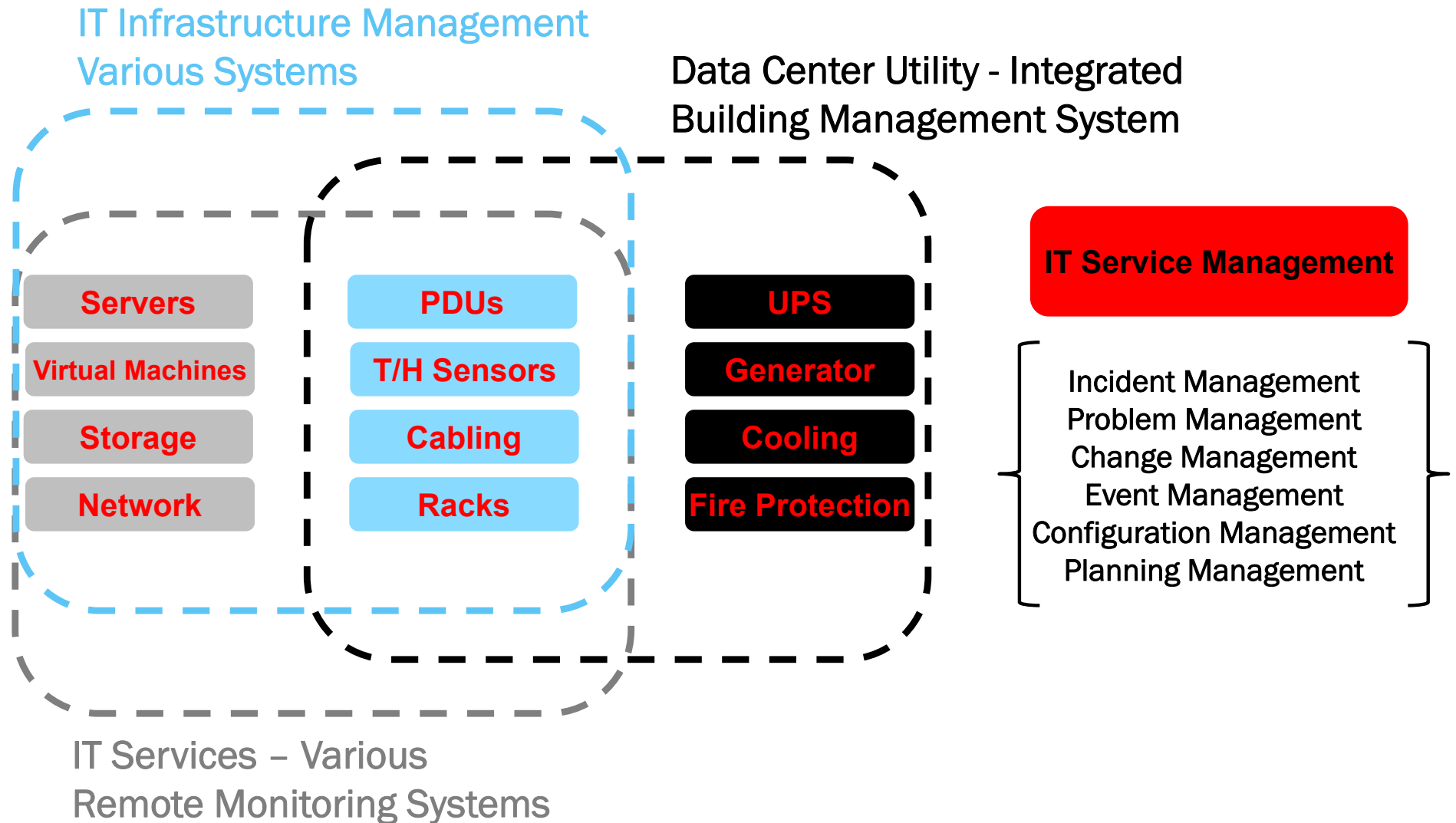


Edge Computing needs “real-time” execution. Edge Solutions allow processing at the device or gateway level reducing latency and connectivity dependencies. Will help improve data compression and transfer in the connectivity layer of the technology stack, reducing network bandwidth and making a wider range of IoT applications possible.

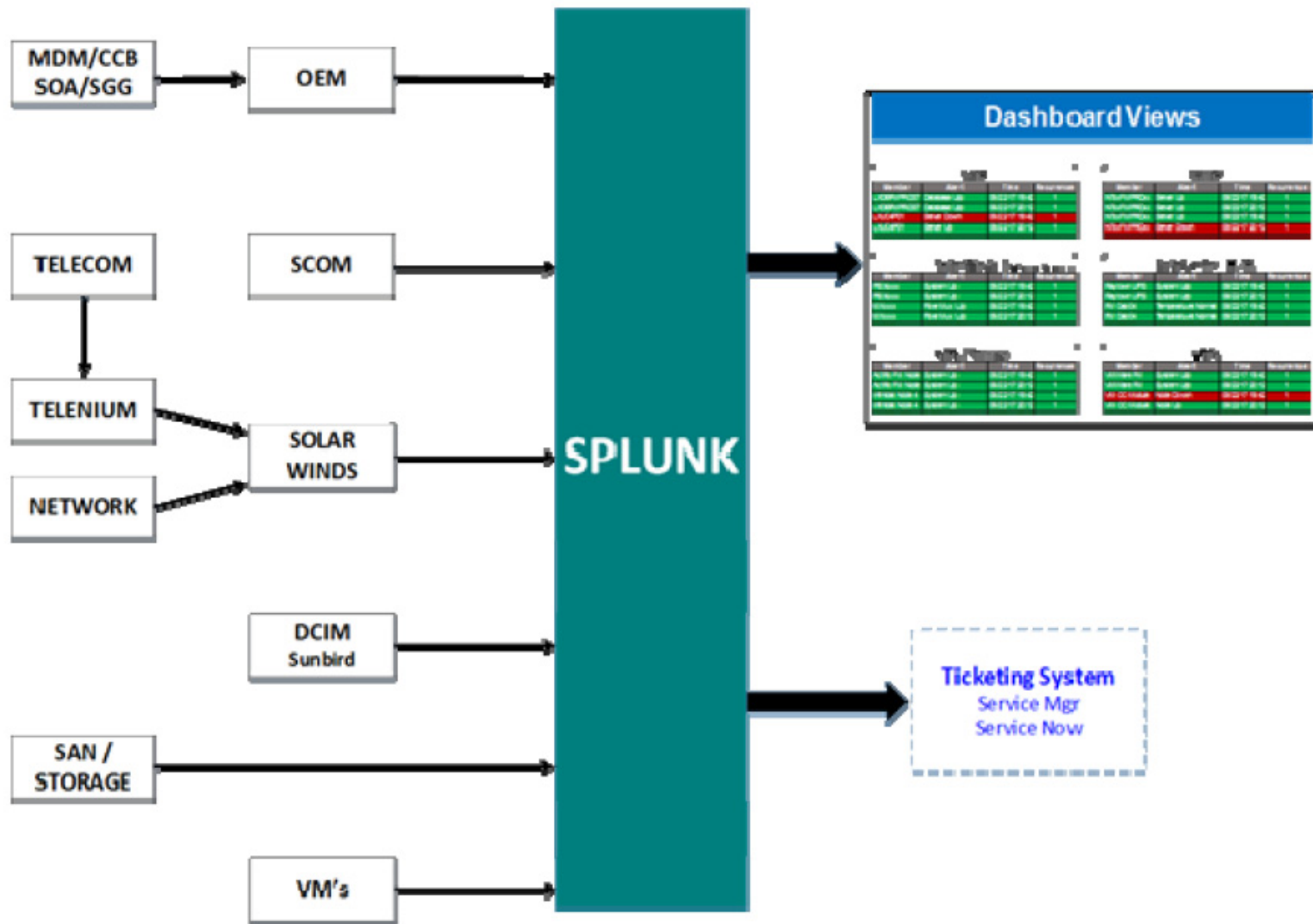
DCIM – What We Know



DCIM Integrates With All & Fills The Gaps



Typical Remote Monitoring Integration



Tier 5 Platinum



Switch Announces New Tier 5 Platinum Data Center Standard

"I was one of the Senior Electrical Engineers at Uptime Institute for over 20 years. I served as the Principal of Education and Training for Uptime. I created the Uptime Institute Tier Accreditation curriculum. I led the Topology and Operational Tier Certification projects. In those roles, I certified 80% of the Tier IV certifications in North America.

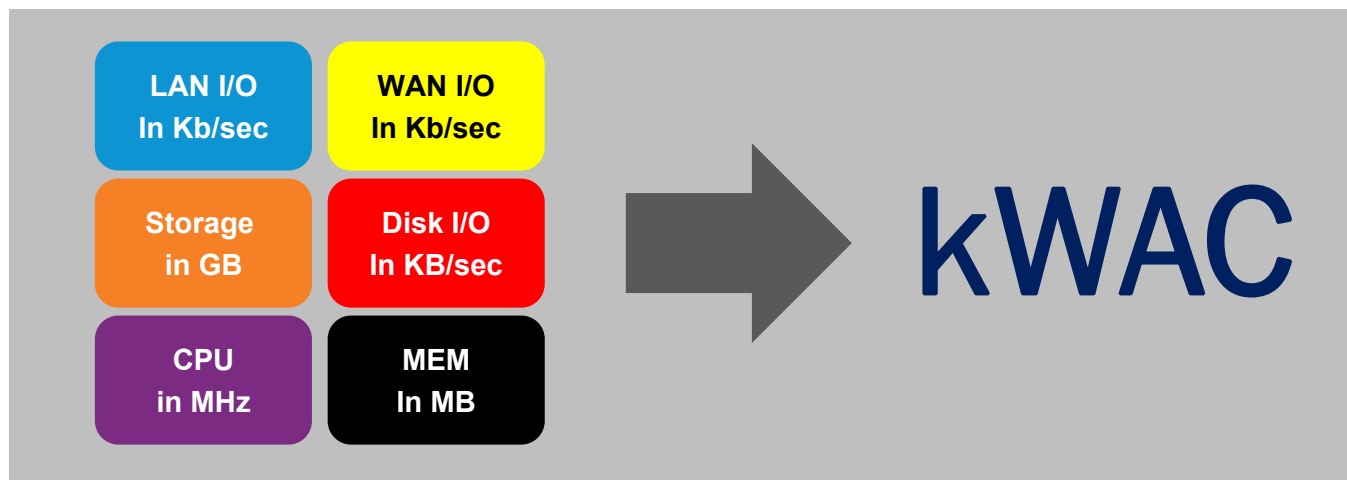
When I certified Switch's SUPERNAP 8 as Tier IV Gold in 2014, and Switch's SUPERNAP 9 as Tier IV Gold in 2016, I realized there were no other data centers that matched Switch's patented designs, facilities and operations. After being involved in the certifications of so many other data centers, I realized that Switch is the world's first Tier 5 data center."

"After being involved in the certifications of so many other data centers, realized that Switch is the world's first Tier 5 data center."

- **Ed Rafter**, Former Senior Uptime Institute Electrical Engineer and Current VP of Critical Systems at Switch.

Most Valuable Unit of Measure

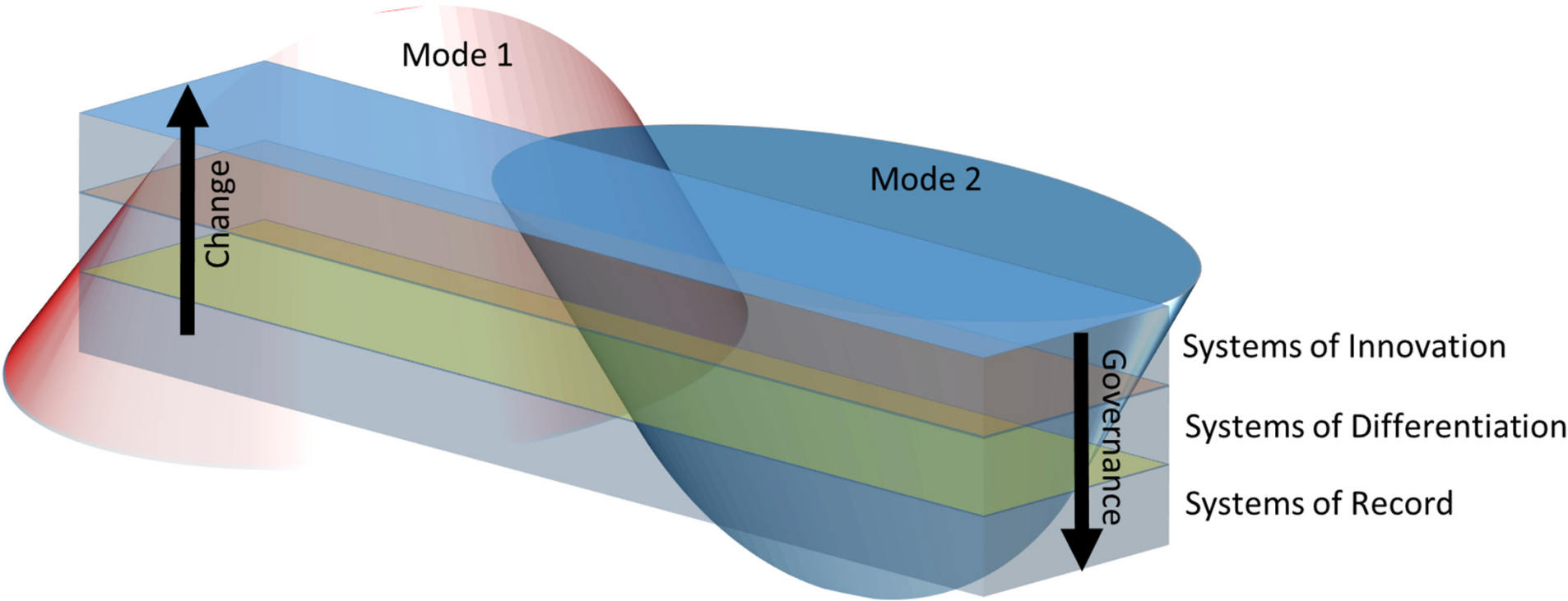
- From Infrastructure Mason's & 6Fusion Comes The New MVUM in the Data Center
- Work Allocation Cube



- Now, More Than Ever, It's Important to Understand These Units of Measure, Making Real-Time Monitoring & Management Even More Valuable Within the Data Center

Innovative Organizations Embrace Bimodal

Gartner's Pace Layering Model Maps to Bimodal Organization



Biggest Issues In Today's Data Centers

- **Lack of Documented (& Practiced) Power Recovery Process**
- **Fully Deployed & Optimized DCIM System**
- **Integrated Software Based Asset Management Software For Data Center As Part of Larger Enterprise Wide System**
- **Real-Time Testing, Auditing, & Certification of 3rd Party Vendors**
- **Real-Time Backup Solutions Testing**
- **Infrastructure & Operations Compliant with NFPA 70E, 2015**
- **Optimized Security**
 - *Lack of Company Culture Recognizing & Emphasizing Data Security*
 - *Not Just Information Technology Issue*
 - *Managing Risks with Audits, Self-Imposed Compliance, 3rd Party Certs*
 - *Assessing 3rd Party Vendor Security, Policies, Operations & Audit*

Emulate The Early Contractor Involvement (ECI) Process Benefits

- **Streamlines Resources To Accelerate Results!**
- **Reinforces Open, Honest, Initiatives-Focused Communications with Accountability throughout the selected Contractor Team!**
- **Studies indicate the ECI approach has same results as Design Build, with dramatic effects on starting, thus finishing projects sooner compared with Design Build:**
 - **78%** believe it increases trust among affected parties
 - **82%** believe it increases open, roundtable communications
 - **85%** believe it decreases adversarial conditions
 - **85%** believe it increases planning capabilities
 - **96%** believe it improves quality
 - **90%** believe it improves safety
- **33% Faster Completion compared to traditional Design-Bid-Build**
- **Prime Contractor and selected subcontractors become a focused design build team allowing owner to leverage resources from all. Delivers motivated contractor experience streamlining decision making, schedule, and quality.**



**But What
About
Procurement?**

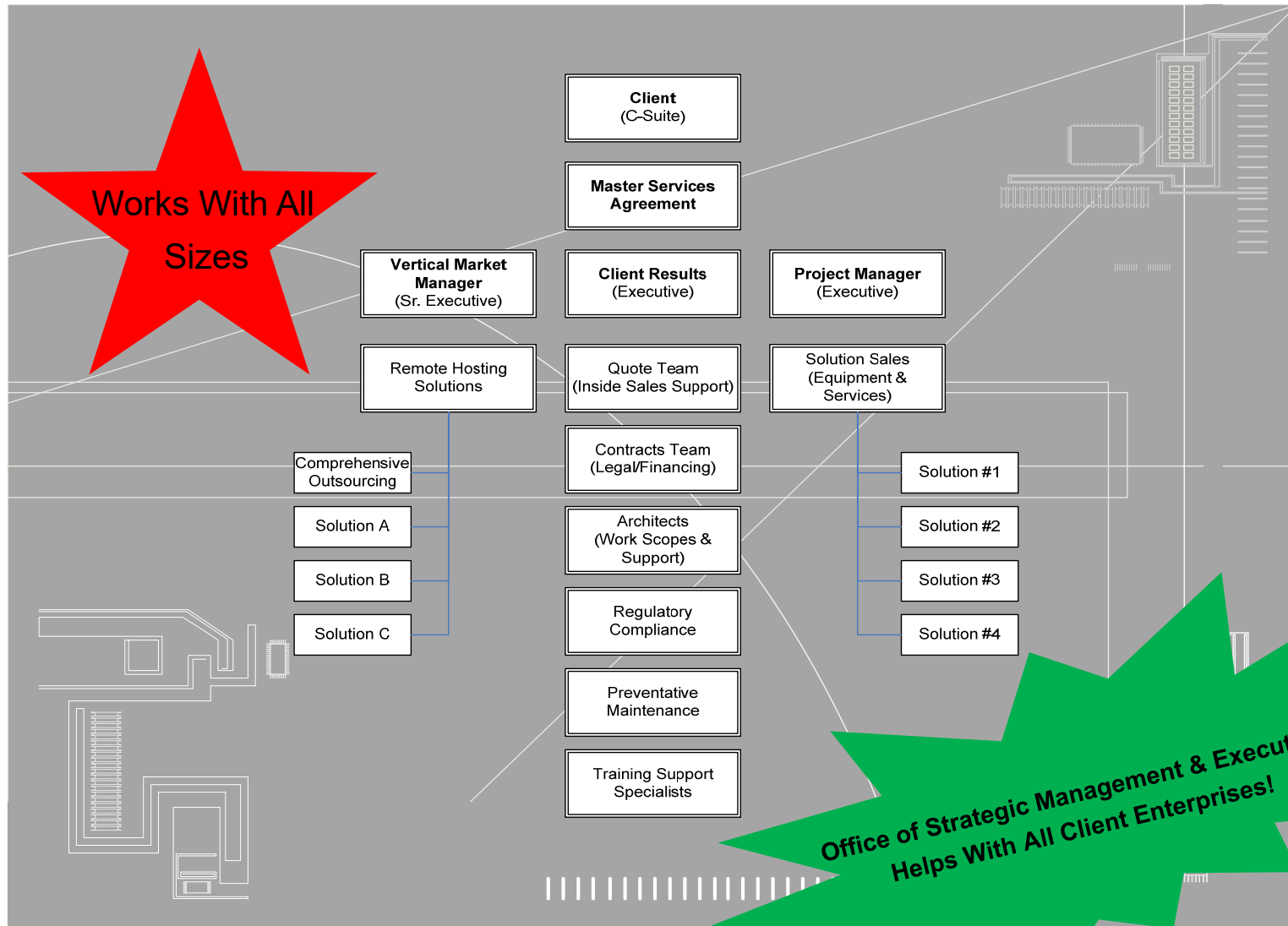
Early Contractor Involvement (ECI) Process

- Can be used for all types of Information Technology Projects
- Acquisition Strategies Utilized by KLM Services' Clients
 - ❖ Design, Bid, Build
 - ❖ Design Build Turnkey
 - ❖ Construction Management (Design, Bid, Build)
 - ❖ OSM&E ECI (Bid/No-Bid) Build Turnkey
- Clients prefer OSM&E ECI (Bid/No-Bid) Build Turnkey
- OSM&E ECI (Bid/No-Bid) Build Turnkey Utilizes...
 - ❖ Pre-Qualified Value Added Contractors
 - ❖ Value Engineering from All
 - ❖ Earned Value Management
 - ❖ Initiatives-Focused Communications with Accountability
 - ❖ Clear, Concise, and Agreed To Work Scopes
 - ❖ Budget Caps
 - ❖ Accurate Timeline

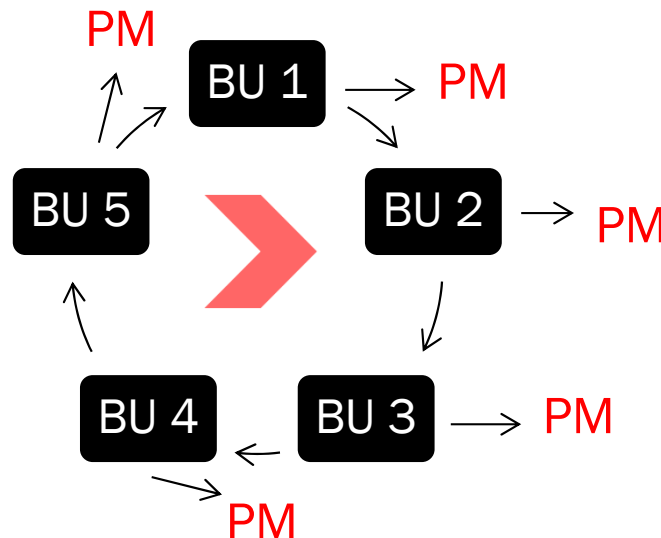
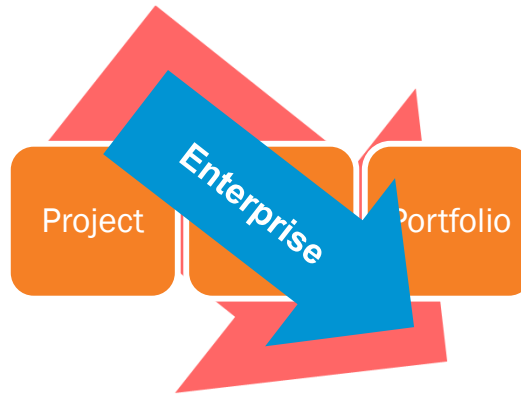
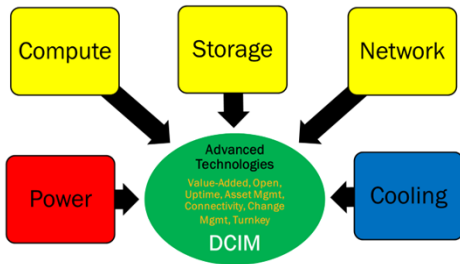
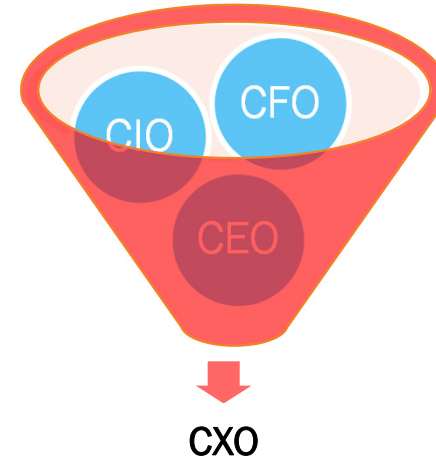
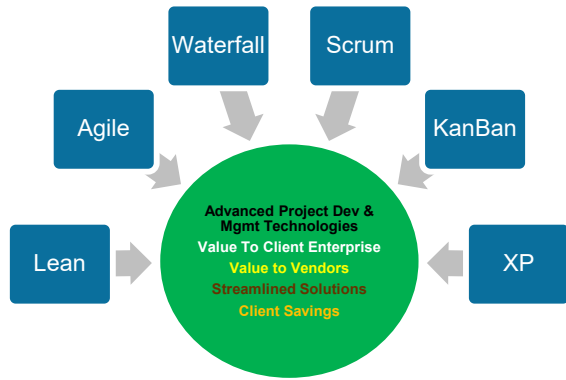
The OSM&E ECI Turnkey Process



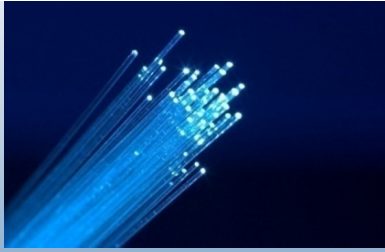
Client's Enterprise – Works With All



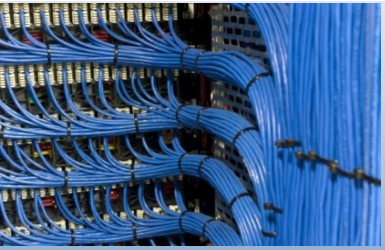
OSM&E Delivers Comprehensive SIM & OPM



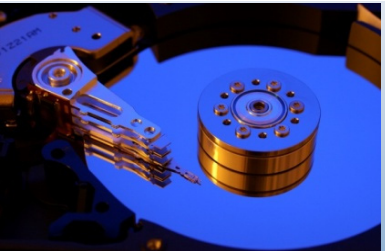
OSM&E Benefits



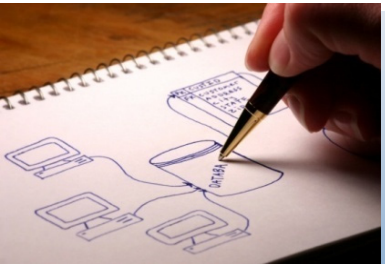
Delivers highest quality Enterprise collaboration with owner advocated **STRATEGIC INITIATIVES**, project objectives, and expectations disseminated to entire project team (internal and external).



Project Development & Management “**STOP³**” Approach with Concepts & Diagrams significantly improves team understanding, mitigates risks, & significantly improves time to market for project.



Project MOPs deliver comprehensive understanding to Executives & Transparency to current operations. Business as usual without any unplanned interruptions.



Focuses Leadership to positively affect quality outcomes during design, integration, implementation, training, and turnover at all levels of organization.

Strategic Goals

- **Target for Completion – Benefits Realization Not Go-Live**
 - *Go-Live Should Be A Critical Milestone – Not Target for Completion*
 - *Success Should Be Defined In Terms of Performance Measures & Targets*
 - *Focus On The Ability of Software Vendor to Facilitate the Achievement of Targeted Benefits So That Client Receives Benefits Realization ASAP!*

- **Consider SaaS – Use As Comparative Model if Client Owns**
 - *Even If Client Plans To Own, Consider & Plan For SaaS*
 - *Compare Monthly Subscription Rates, Hosting, Training, Consulting, Etc.*
 - *Once SaaS Is Completely Understood – Use To "Buy Smart" For EAM Ownership*
 - *Important Note: If SaaS is seriously considered, Know Who's Supplying Services*

- **Select Best of Breed with Strong Open Systems Functionality**
 - *Vendor Needs to Demonstrate Open Systems Capabilities*
 - *Consider Outside the Core Functionality*
 - ▶ *Aligning Maintenance & Production Schedules*
 - ▶ *Labor Data Entry For Asset History & Payroll*
 - ▶ *Applications Specific to Mobile Devices*
 - ▶ *Chargebacks For 3rd – Party Billing*
 - ▶ *Accounting for Large Capital Projects Involving Maintenance*

Strategic Goals

■ Focus On Benefits

- *To Enterprise, Plants, Locations, Divisions*
- *Involve Stakeholders From All Affected Business Units*
- *From Corporate to Shop Floor Along The Entire Asset Life Cycle for Any Asset Class*

■ Focus On Needs

- *A Minimum of Three Years Out*
- *Integrate Strategic Initiatives & Business Case Requirements*
- *Span Requirements of ALL Departments (Maintenance, Operations, Engineering, Purchasing, Finance, Real Estate, IT, Fleet, etc.)*
- *Workflow Engine Flexibility – Quickly Redefine Processes*
- *Configurable KPI's To Easily Change Priority Measures for Analysis & Reporting*

■ Green Is Good

- *Manage & Control Energy – A Competitive Edge*
- *Best Practices Examples*
 - ▶ *Measuring Energy Use At Asset Level*
 - ▶ *Understanding Carbon Footprint*
 - ▶ *Incorporate Energy Efficiency Into Asset Life Cycle Practices*

Strategic Goals

- **Look For Key Performance Indicators Most Relevant To Improve Asset Life Cycle & Associates Ability To Do Job Better**
 - *What If Associate Could Arrive Every Morning and See Dashboard Display of KPI's*
 - *Quickly & Easily Analyze Data*
 - ▶ Configurable KPI's
 - ▶ Dashboards & Business Intelligence
 - ▶ Analytics & Maintenance Optimization Tools
 - ▶ Risk Mgmt & Compliance
 - ▶ Warranty Mgmt

- **Dynamic Data & Reporting – Not Static Data & Reporting**
 - *Notifications, Alarms, Alerts, Workflow Engine – Real-Time Monitoring 24X7X365*
 - *Knowledge Management*
 - ▶ Predictive Maintenance Instead of Fire Fighting

- **Not Just Functional Fit But Vendor Partnership is Key**
 - *Vendors Should Be Able to Help With*
 - ▶ Assess Org Readiness & Gap Analysis to Determine Successful Implementation Criteria
 - ▶ Process Design Expertise to MAP Software Configuration
 - ▶ Guidance With Industry Best Practices

Strategic Goals

■ Don't Focus ON “Look & Feel” Rather Best Fit

- Look For Excellent Tools that Allow Software to be Tailored to Significantly Improve User Interface
- One That Allows User Customizing
 - ▶ *Helps With Divisional Ownership*
 - ▶ *Personalization Motivates Associates*

■ Training

- Prior to Design & Implementation
 - ▶ *Stakeholders, Business Unit Managers, PMO Staff*
 - ▶ *Significantly Improves Design Criteria & Enterprise Benefits Realization*
 - ▶ *Improves Understanding of GAP Analysis, Subsequently Improves Roadmap*
- In Preparation For Go-Live
 - ▶ *Users, Managers, Executives*
 - ▶ *Significantly Improves User Experience & Management of EAM*

Client Benefits – OSM&E Process

- **Client Strategic Initiatives Continually Influence Enterprise**
- **Project Development Manual (PDM)**
 - *Project Budget Estimate w/ MSA Vendor Proposal Support*
 - *Detailed, Diagrammatic, and Conceptual Project Work Scope*
 - *Detailed Professional Services Descriptions*
- **Improve Procurement – Project Procurement Manual (PPM)**
 - *Reducing Time to RFP*
 - *Competitively Bid All Work Scopes With More Details*
 - *"Buy Smart"*
 - *Reduce Time To Make Buying Decisions/Evaluations*
- **Provide Improved OSM&E To Reduce Burden on Project Controls**
 - *Work with Other Enterprise Groups (Facilities, Operations, Maintenance, Distribution, Switching, etc.) to Coordinate Equipment Approvals, Client Support Responsibilities, Training, and Preventative Maintenance*
 - *Always Discussing Work Scope Impacts Respective to CIP, SOX, HIPAA, etc. Compliance Issues & Standards (Reliability)*
- **Digital Record Documents, Issues Log, & Lessons Learned**

Client Benefits (On-Going Value)

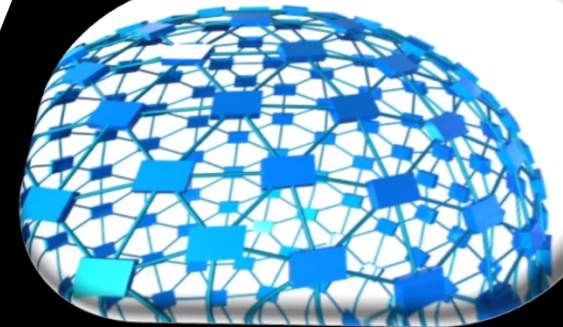
- **Structured Project Proposal with Full Disclosure**
 - *True Owner Advocacy Role with Subject Matter Expert*
- **Disclosing Client Strategic Initiatives, Familiarity with Client Standards, Industry Standards, and Existing Site Conditions, Promotes Improved Execution Through OSM&E**
 - *Improved Focus & Involvement from Client Groups for their perspective and approvals (Facilities, Operations, TCC, etc.)*
 - *Continuous Operations Improvements & Considerations*
 - ▶ Procedures For “What To Do When Data Center Operations are Interrupted”
 - ▶ Ability to “Diagnose Complex Systems, Work With Them and/or Determine Why They Didn’t Work as Expected”
 - ▶ Evaluating When to Work With Vendor versus Internal Resources
- **Strategic Initiatives Are Integrated Into All Levels of Project Execution & Future Projects**

Closing Thoughts...



Partnering on your Journey

OSM&E, PMO, Traditional, Agile, Hybrid



Thank YOU!



KLM Services, LLC.

Driven Leadership, Maximizing Client Value

Michael Schaberg

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