

January 1, 2024

Prospective Client Executive Management
Large Enterprise Data Center
Midwest Region

Subject: Introduction to KLM Services
Office of Strategic Management & Execution
Sales & Services Binder for 2024

To whom:

The information contained herein is typically utilized for Sales, Services, and Project related presentations in order for new prospects and existing clients to develop a better understanding of the breadth and depth of professional services offered by KLM Services' Office of Strategic Management & Execution.

We are confident that once you better understand our approach, our dedication to your success, and our commitment to the highest level of quality professional services inside the Data Center, you'll agree that our journey together should begin. At KLM Services, we are Consultants, IT Project Managers & Execution Consultants dedicated to improving IT Project Outcomes by eliminating the gap between Strategic Initiatives Management (SIM) and Operational Project Management (OPM).

We work directly with your Executive Management and PMO to develop the IT Project, manage the IT Project, and complement existing process and procedures, so that we don't disrupt normal day to day operations. Additionally, we ask that all project team members understand the Strategic Initiatives that drive the priorities for the project, execute the appropriate adaptive hybrid project management techniques, and collaborate such that we significantly improve the IT Project Outcome – On Time, On Budget, On Scope!

Within the pages that follow, you'll find...

- KLM Services Bio & MLS Bio
- Our Journey Presentation
- What Our Clients Are Saying
- Technology Debt Reduction

Please review this information and let us know whether you have any questions or require any additional information. We appreciate your time and consideration.

Sincerely,

Mike Schaberg

Mike Schaberg
Principal – KLM Services, LLC.
Phone: 816-518-1201

"Driven Leadership, Maximizing Client Value"

TECHNOLOGY HUMAN RESOURCES INFRASTRUCTURE



Professional Services for Mission Critical IT Projects

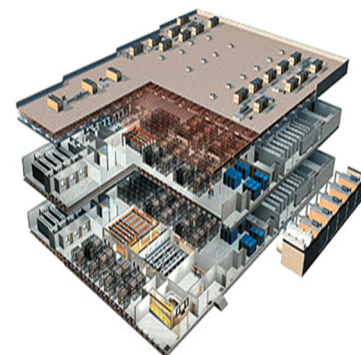


Eliminating The Gap – Strategic Initiatives Management & Operational Project Management

Prepared by:
KLM Services, LLC

Enterprise Class Data Center Subject Matter Expertise

- **Compute**
- **Network**
- **Storage**
- **Power**
- **Cooling**



January 2024



The KLM Services Story

Since January 2004, KLM Services has been providing professional project development and project management services within the Data Center marketplace. Our initial focus was to deliver turnkey Information Technology project outcomes focused on the Micro Data Center (Compute, Network, Storage, Power, & Cooling). Through our success, KLM Services quickly realized there remained a gap between corporate strategies and these IT project outcomes. We started to question how often these IT project outcomes properly aligned with corporate strategies. The more we investigated, the more we learned. 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 Executive Strategy & Execution Consultants (SECs) that Eliminate “The Gap” between Strategic Initiatives Management (SIM) and Operational Project Management (OPM) Within Information Technology.

To our clients we deliver owner advocacy and incorporate enterprise strategic initiatives into every project meeting, improving business plans, delivering comprehensive work scopes, accurate budgets, precise project timelines, competitive pricing, transitional training, and the best Information Technology project development and project management services in the business. The sole purpose of KLM Services' Office of Strategic Management & Execution is to more closely align corporate strategic initiatives with improved project execution to significantly improve IT project outcomes. Our turnkey Buy Smart Program delivers SIM to OPM along with KLM Services' Project Development Manual (PDM), Project Procurement Manual (PPM), and Project Management Office (PMO).

The KLM Services Road Map & Leadership Experiences

- 1987-1989 Design Engineer Supporting Data Centers
- 1989-1996 Executive Management & Sales for Turnkey Construction Design Build Retrofits within the Data Centers of Northern California (Silicon Valley)
- 1996-2004 Executive Management & Sales for Turnkey Construction Design Build Retrofits within the Data Centers All Across the United States
- 2004-Pres Executive Management & Sales for Project Development and Project Management Professional Services within the Data Centers of Kansas City MO, Midwest, and All Across the United States

KLM Services has been serving the Data Center and Mission Critical Systems marketplace by delivering performance-based project development and project management professional services for over thirteen years. Our goal is to become your Executive Strategy & Execution Consultants (SEC). KLM Services embodies what it takes to be an IT Project Developer, IT Project Manager, and Data Center Subject Matter Expert.

The Foundation of any business involves a Strategy, a Vision, and a Plan. In addition, what's allowed KLM Services to be successful, is our focus on Knowledge Management (Owner Advocacy), Workflow Management (Owner Operations), Project Management (Owner Operational Project Management), and Strategic Management (Owner Strategic Initiatives Management). These four cornerstones of our business symbolize to our clients that we're dedicated to improving their IT project outcomes and their overall corporate success.



Knowledge Management



Workflow Management



Project Management



Strategic Management

Please ask us about our marquis enterprise Data Center project experiences.

KLM Services, LLC.

Mike Schaberg
Principal
5464 NE Northgate Crossing
Lee's Summit, MO 64064
816-518-1201

<http://www.klmservices.com/>

Bio for KLM Services, LLC Owner, Mike Schaberg

As an IT Project Developer, IT Project Manager, and Subject Matter Expert in all aspects of mission critical data center operations, systems, and interconnected information technology, Mike Schaberg leads KLM. Direct (1099) experience includes consultative project development and project management roles, managing and directing data center operations in concert with large multi-million-dollar construction and IT refresh projects, and building mission critical IT infrastructures utilizing traditional, agile, and hybrid project management proficiency within large enterprise-wide global organizations.

My current Goals & Interests include continuing to improve upon KLM Services' strategic planning and turnkey project development and project management professional services inside OSM&E and the Micro-Data Center. Become the Principal Implementation Consultant Executive that eliminates "The Gap" between Strategic Initiatives Management (SIM) and Operational Project Management (OPM) Within Information Technology by taking on long term, high profile, mission critical projects for our clients. With KLM Services' 3-Step Mission Critical Construction Process (PDM, PPM, and PMO), clients receive turnkey IT Project Outcomes at a significantly reduced price! Strategic Initiatives Management (SIM), Project Development (PDM); Project Procurement (PPM); and Project Management (PMO) must all be inter-connected, inter-dependent, and properly executed in order to achieve high quality, high return, IT Project Outcomes within large enterprises.

Mike Schaberg PMP, PMI-ACP

Bachelor of Science Electrical Engineering, University of Missouri, 1987

37+ Years (May 1987) of Experience within the Enterprise Class-Data Center

20+ Years (January 2004) Doing Business As KLM Services, LLC

Project Management Experience with All Types: PMP (traditional), PMI-ACP (comprehensive Agile), Hybrids, Agile, LEAN, and Scrum

Excellent Communications Skills for Technical, Non-Technical, Sales, and Business Professionals

Typical experiences working with large enterprise C-Suite, Executive Managers, & PMO to promote Strategic Initiatives; Lead, Collaborate, and Influence Project Teams Towards Much Improved IT Project Outcomes; Manage IT PM's on Multi-Faceted, Inter-dependent Project Work Scopes

By continuing to take on high profile, mission critical projects, I want to continue to complement my experiences in the Enterprise Class-Data Center, Informatics Processes, Compute, Network, and Storage Management/Support Software, High Availability, Mission Critical Operations & Systems, Software Engineering Management, Software Development, Database Management, Strategic Initiatives Management, and IT Project Management.

With improvements each year in technologies, solutions, and processes, I'm very interested in identifying the best SLA's, improving client operations, the lowest achievable costs, and the highest achievable resource utilization in the Enterprise Class-Data Center. Focused on KPI's: Quality of Service, Cost Efficiency, Effective Utilization of Assets & Capacity.

Really enjoy bringing to each opportunity accountability for project and business success. By promoting the use of consistent project performance measurements and metrics, the Project Team improves. I like to evaluate project performance and achievement by consistently assessing all aspects of practicing project management – technical, schedule, and financial performance.

Former Enterprise Class Experiences:

Affiliated Computer Services, Inc.

- Multiple Data Center Sites

American Presidents Lines

- Multiple Data Center Sites

Department of Justice

- Data Center

General Services Administration

- Data Center

Internal Revenue Service

- Data Center

Evergy, Inc.

- Multiple Data Center Sites
 - Legacy Kansas City Power & Light
 - Legacy Westar
- Greenfield Upgrade/Integration of Energy Management Systems Post Merger
 - Primary and Backup Corporate/EMS Data Centers
 - Emerson/OSi Monarch SCADA Platform
 - Legacy KCP&L – Monarch
 - Legacy Westar – Siemens
- Wolf Creek Nuclear Operating Corporation

MCI Telecommunications

- Multiple Telecommunications Sites

T-Mobile/Sprint

- Multiple Telecommunications Sites

Union Carbide Corporation

- Data Center

Westlake's Ace Hardware

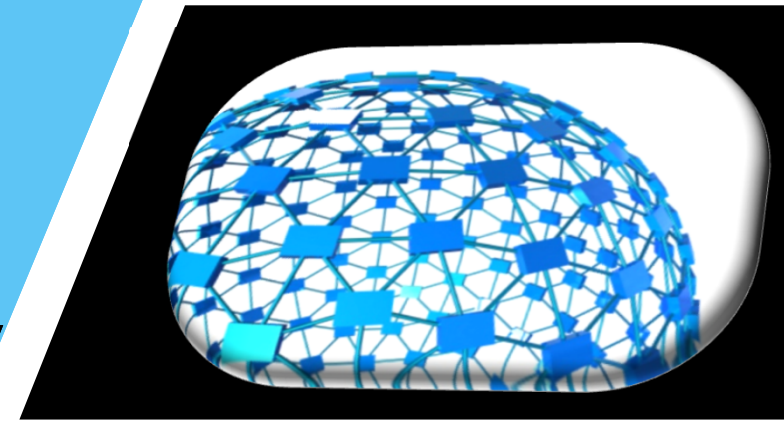
- Data Center

Mike Schaberg, PMP, PMI-ACP



Partnering on your Journey

OSM&E, PMO, Traditional, Agile, Hybrid



Office of Strategic Management & Execution

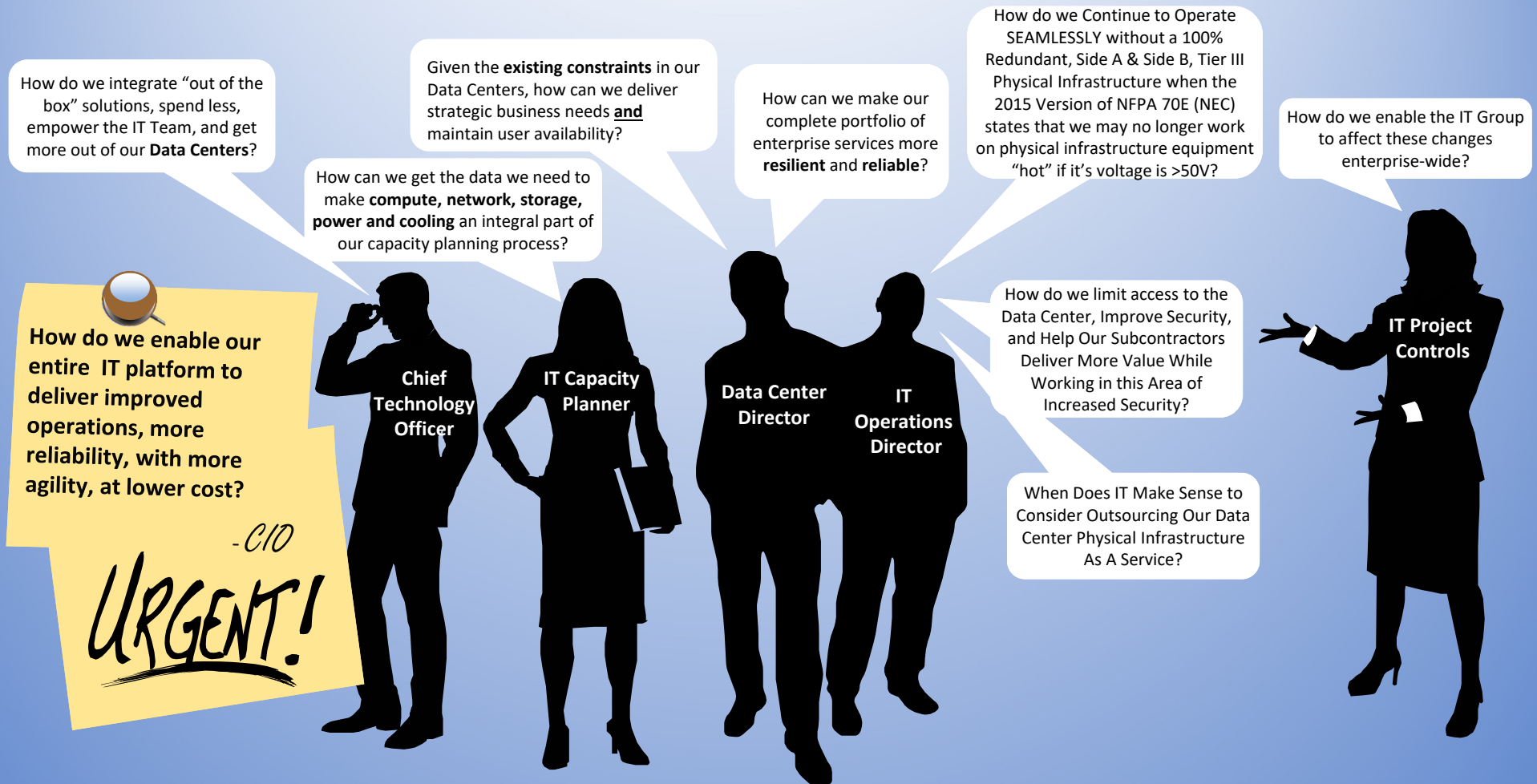
In Business Since January 21, 2004

*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

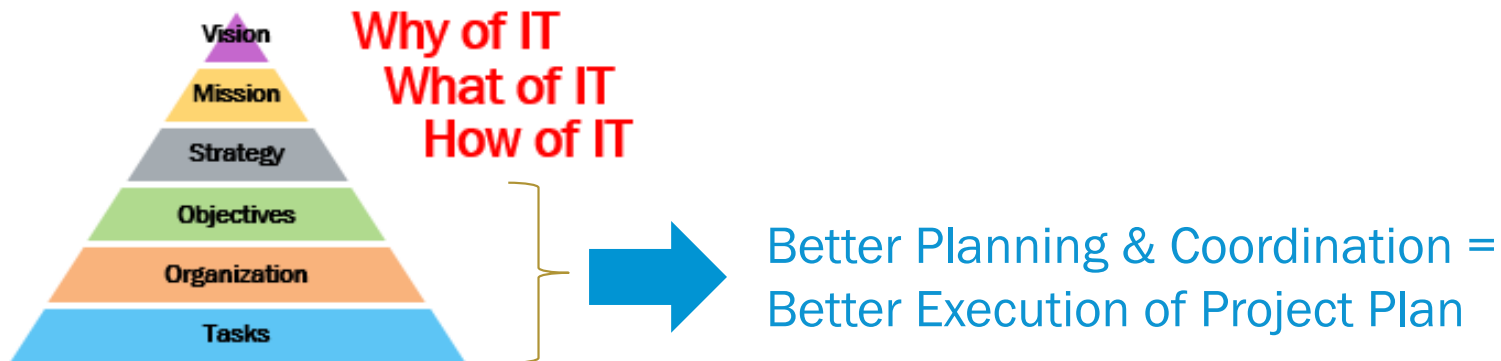
- *Decisions Need to be Balanced between Revenue Generation, Capital & Operating Costs, ROI, Value, Technology Debt Reduction, etc.*
- *Need to Address Regulated/Non-Regulated*
- *Modular & Scalable – Grow As We Go*
- *Build Own Operate, Colo, IaaS*
 - *Security (Physical & Data) Associated With Each*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

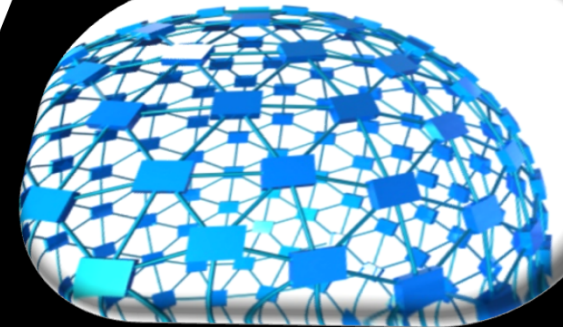
How Did This Evolve

- 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)

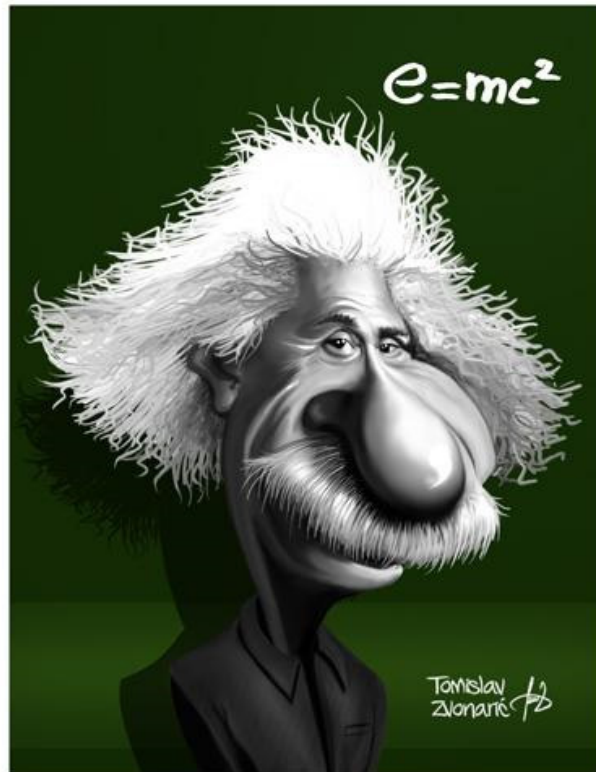


Implementation Executives

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

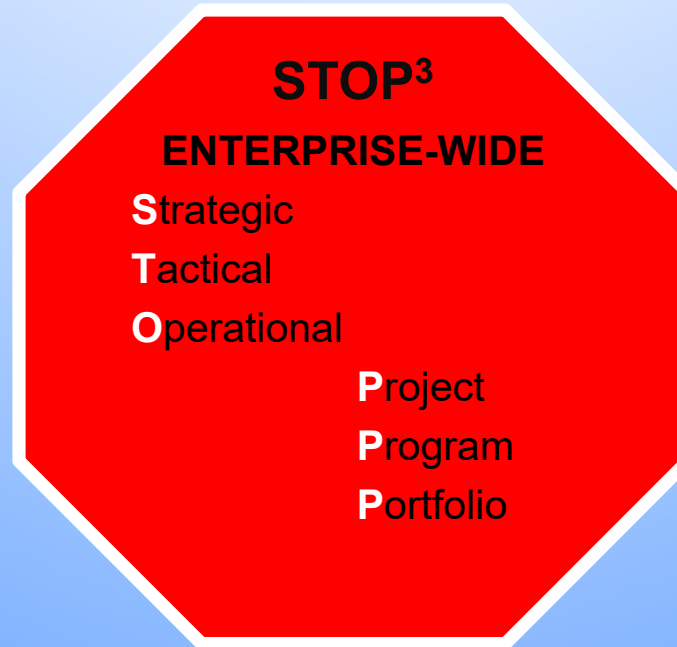
Help Needed & Independent Review

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

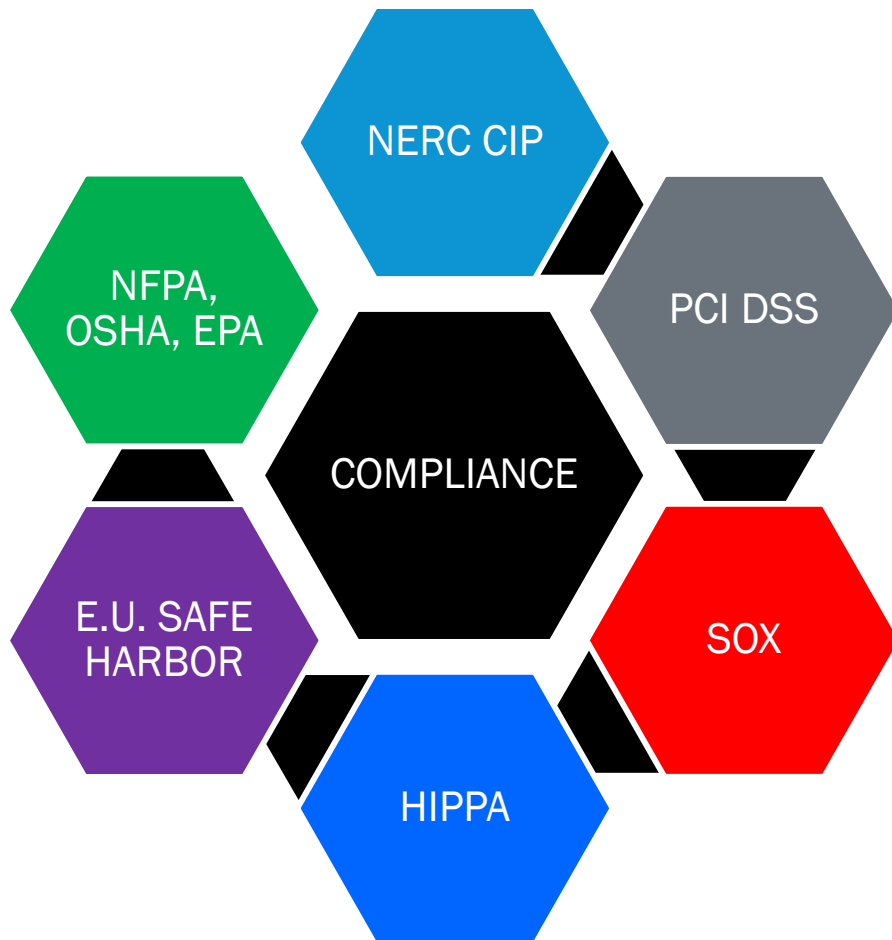
- Change Management
- Communications
- Standardization

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

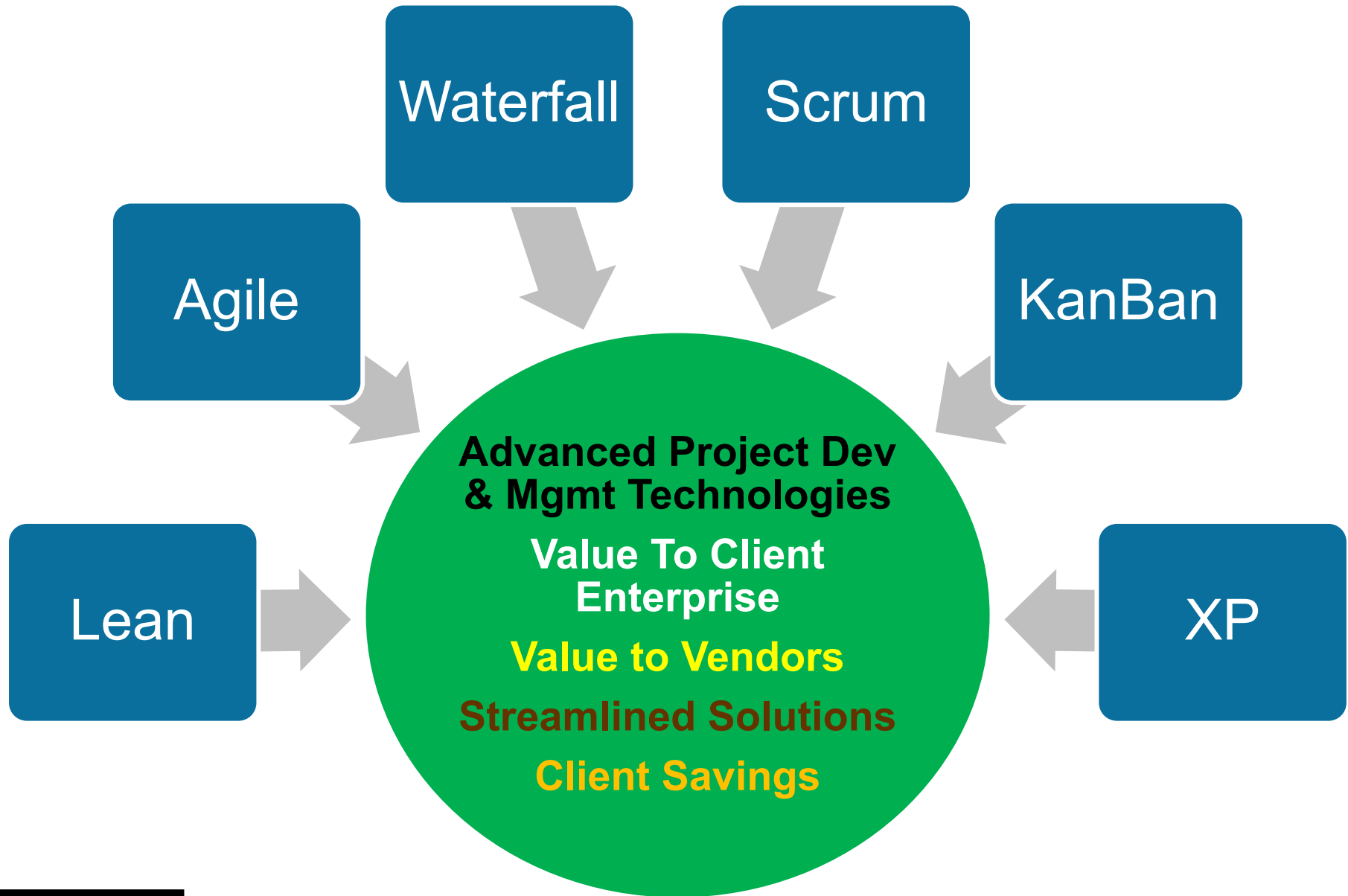
Regulatory Compliance & Cyber Security



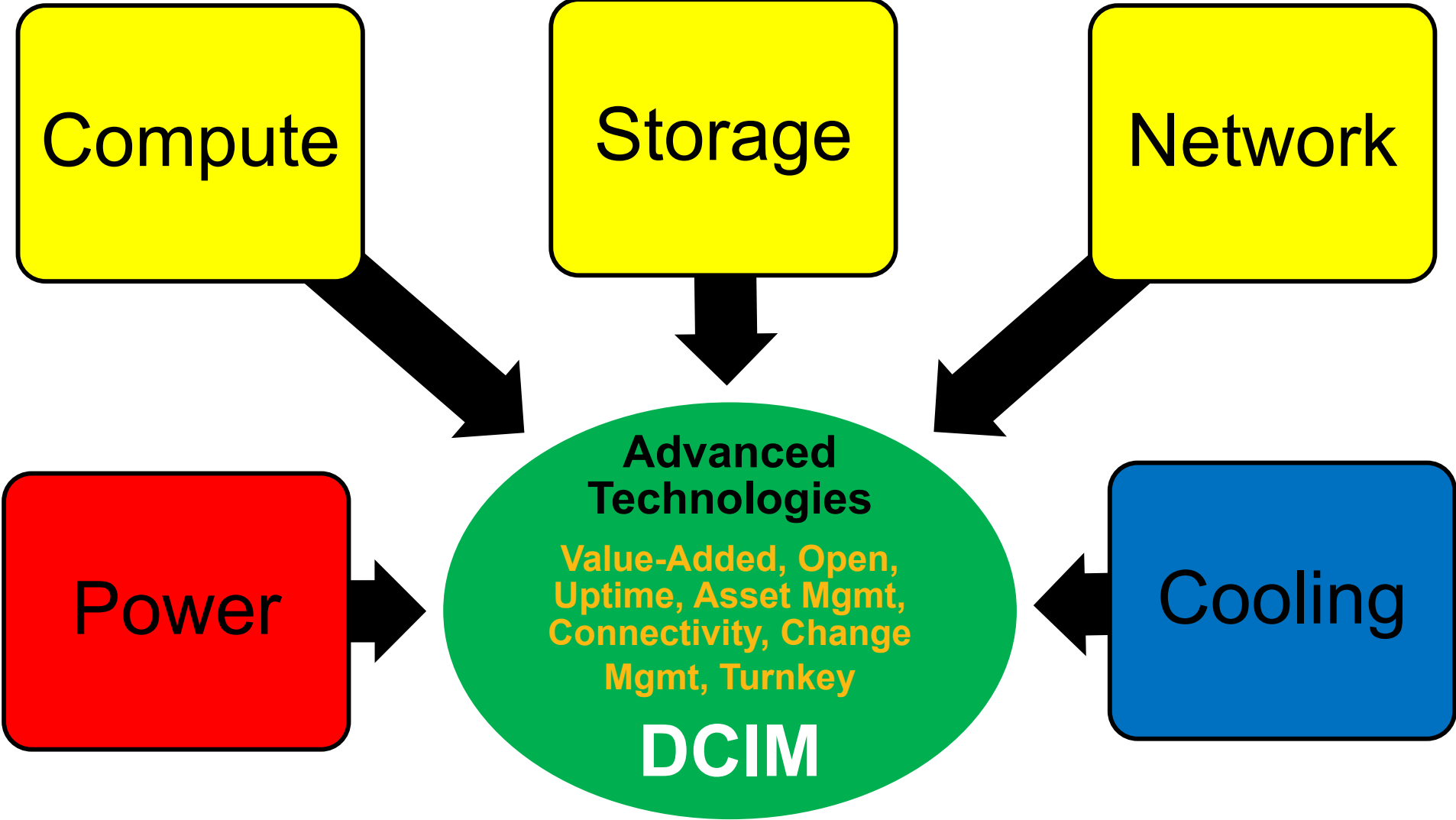
Must Move Beyond Cyber Security as a Control Function to an Integrated and Resilient Approach/Strategy

- 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

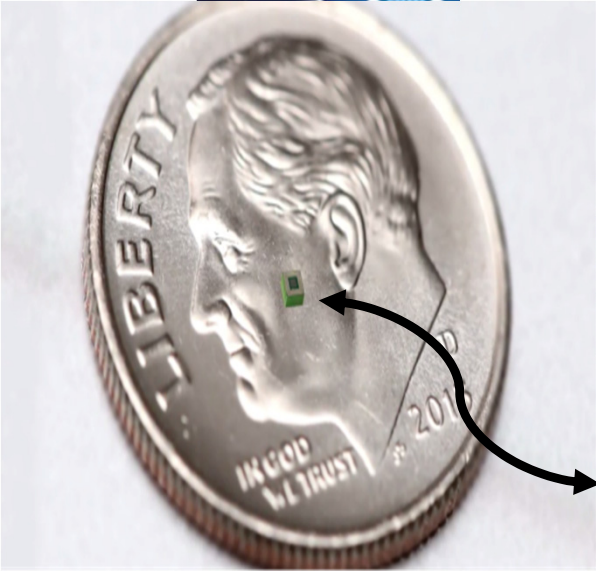
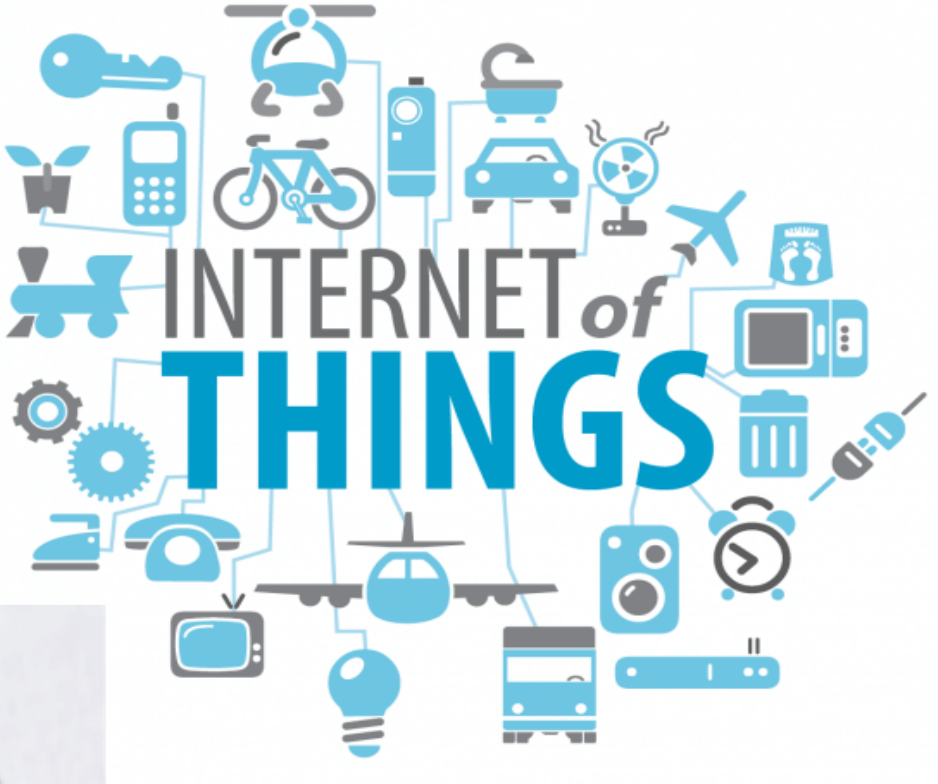
Project Management Using Adaptive Hybrid



The Big Five or “Micro DC”

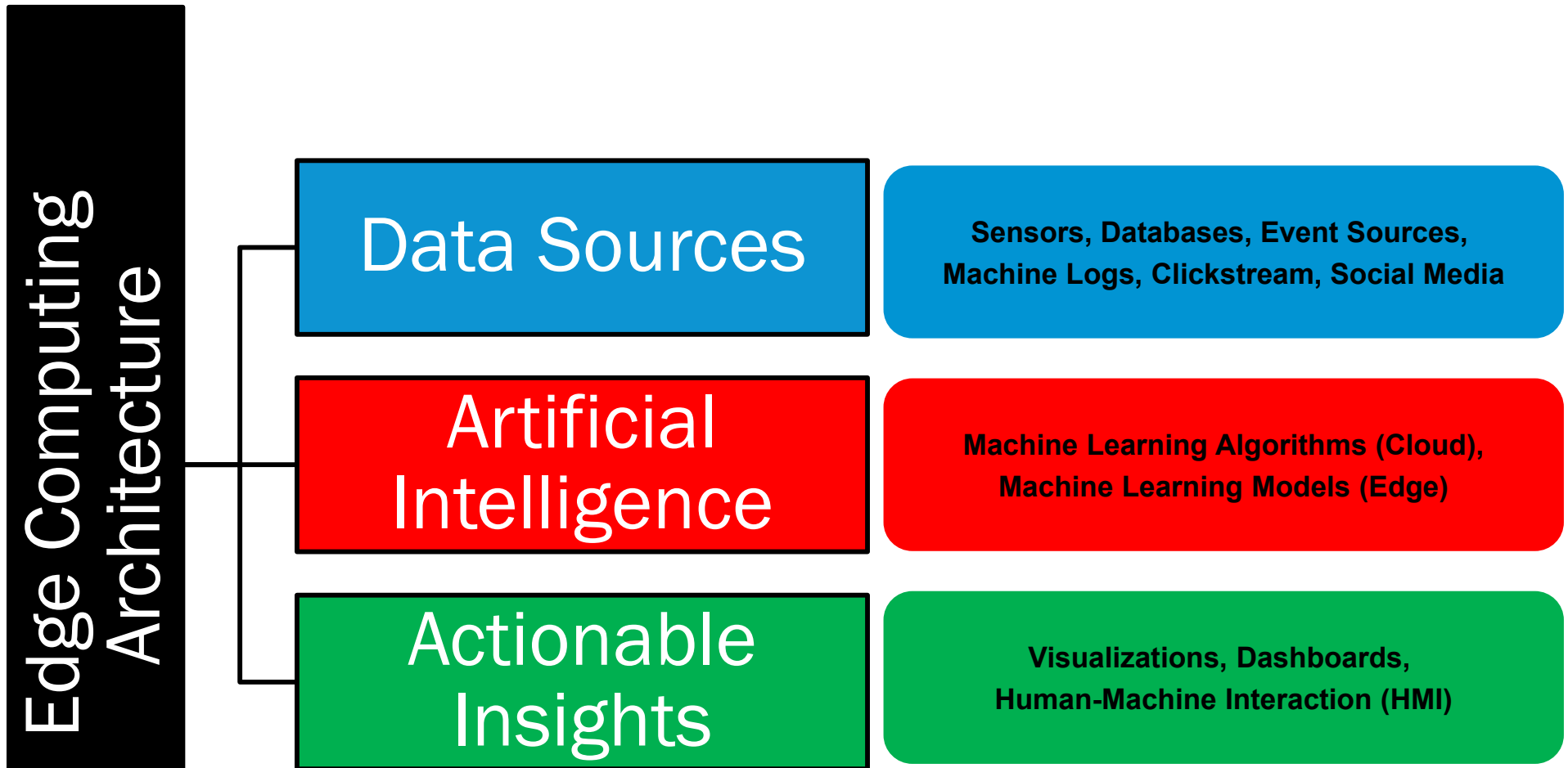


Why Must We Prepare



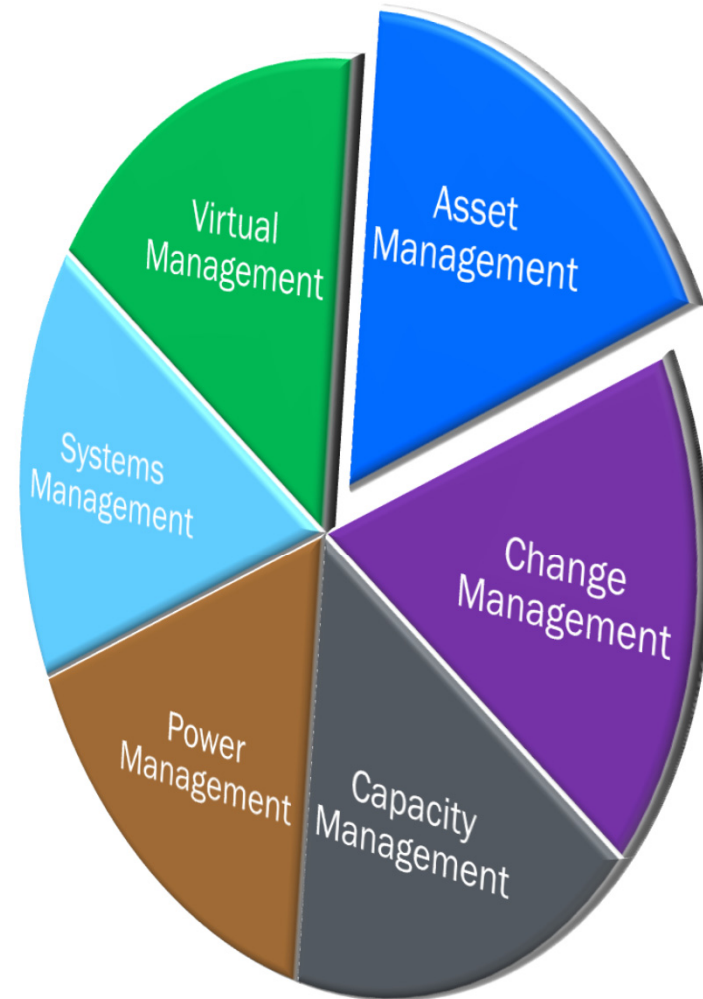
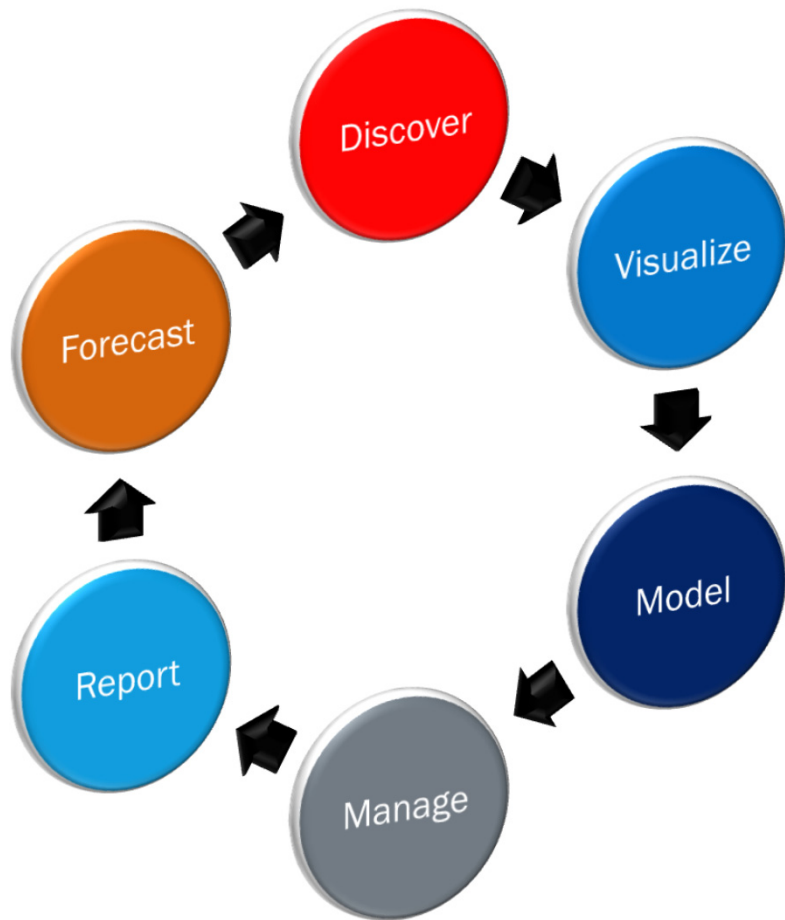
MEMS
MicroElectroMechanicalSystems

Edge (On-Premise) Computing Influence

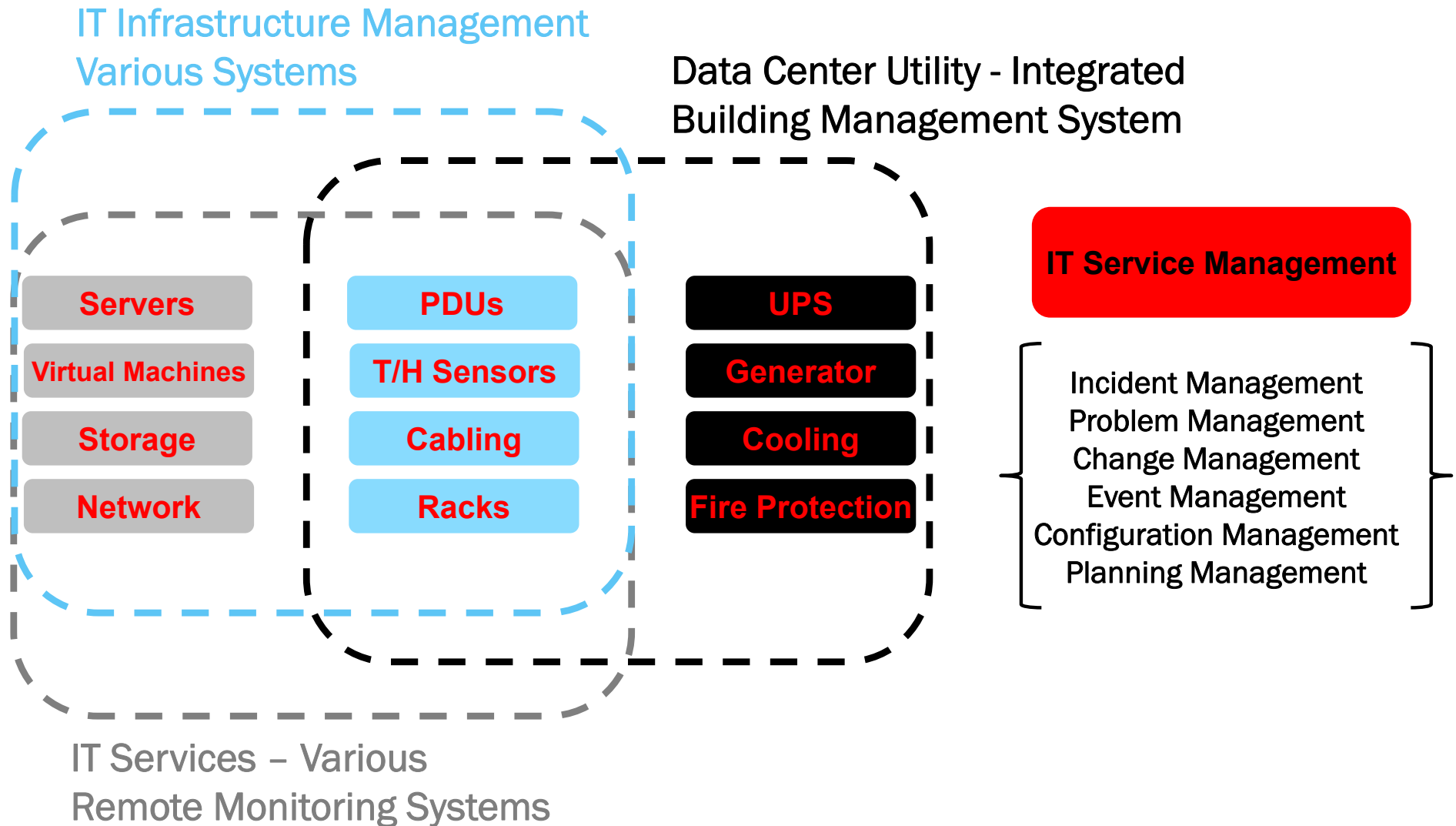


Edge Computing needs “real-time” execution. Edge Solutions allow processing at the device or gateway level reducing latency and connectivity dependencies. Will help improve data compression and transfer in the connectivity layer of the technology stack, reducing network bandwidth and making a wider range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

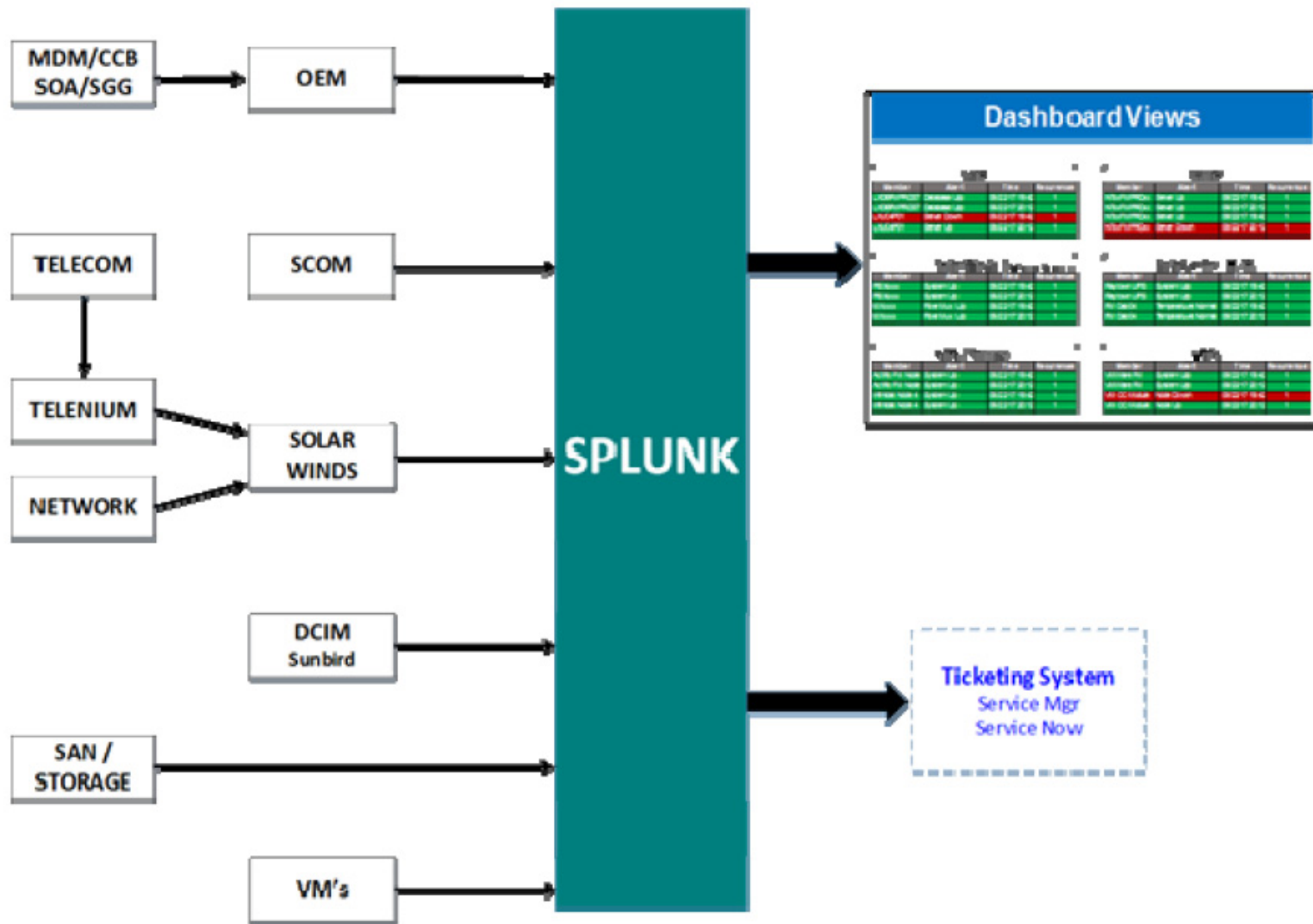
DCIM – What We Know



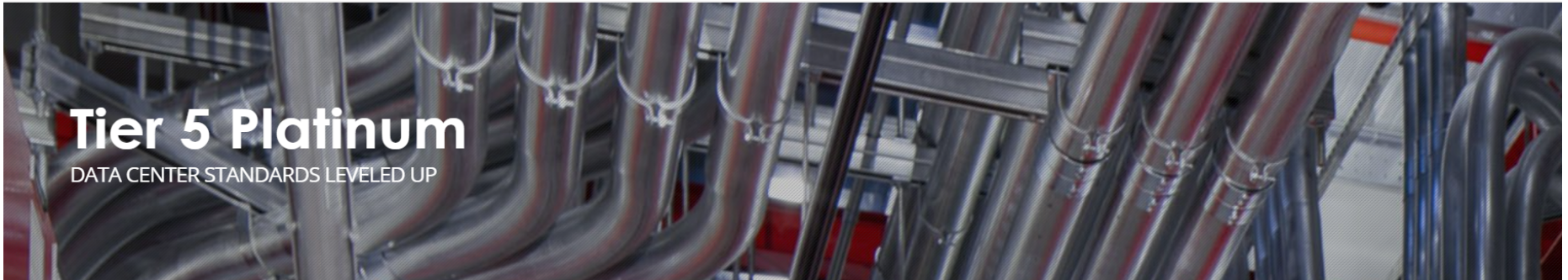
DCIM Integrates With All & Fills The Gaps



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.

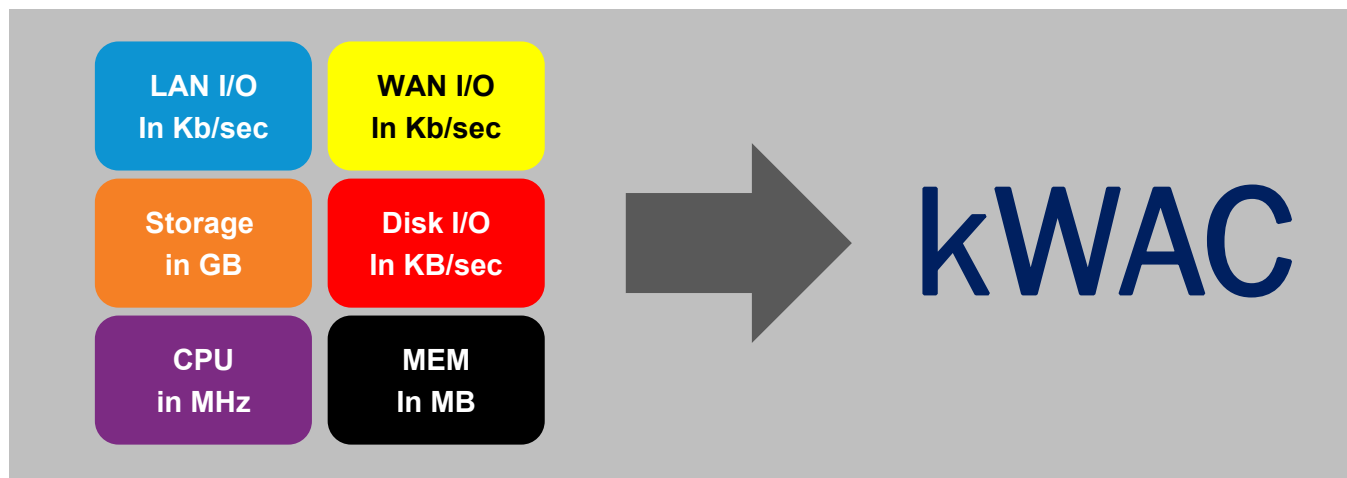
When I certified Switch's SUPERNAP 8 as Tier IV Gold in 2014, and Switch's SUPERNAP 9 as Tier IV Gold in 2016, I realized there were no other data centers that matched Switch's patented designs, facilities and operations. After being involved in the certifications of so many other data centers, I realized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

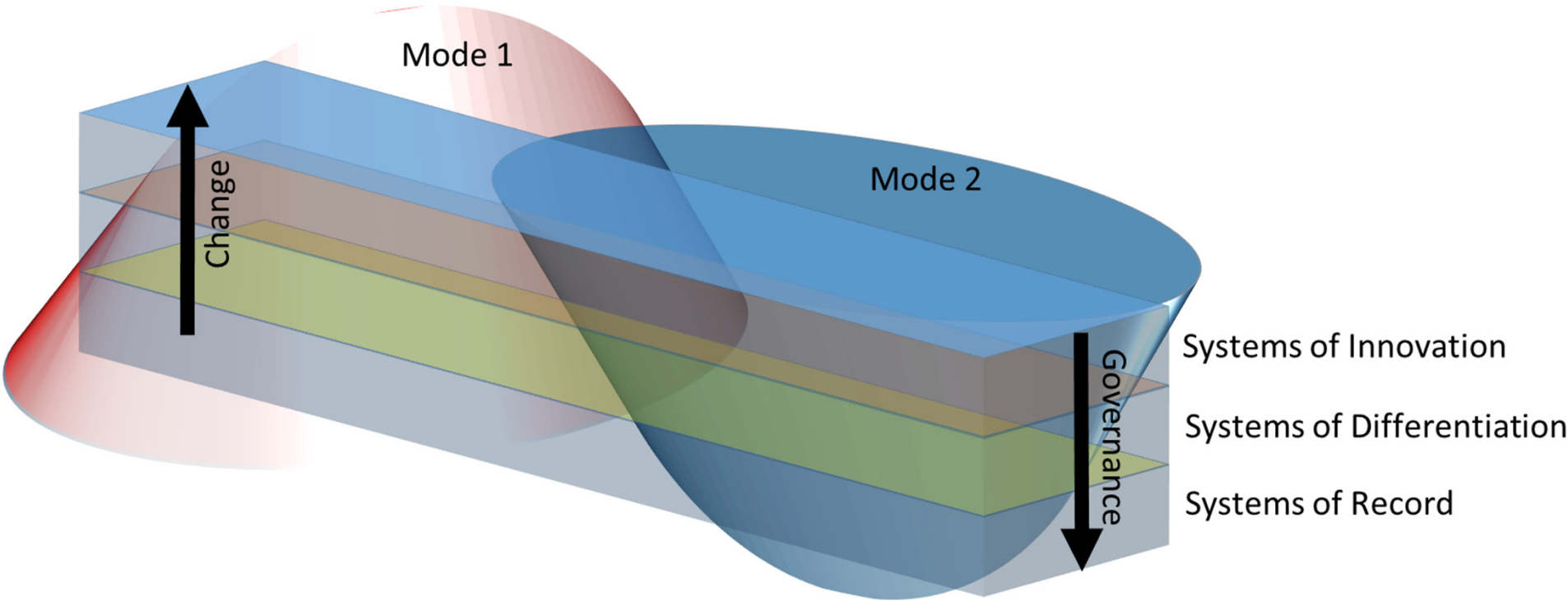
- From Infrastructure Mason's & 6Fusion Comes The New MVUM in the Data Center
- Work Allocation Cube



- 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.**

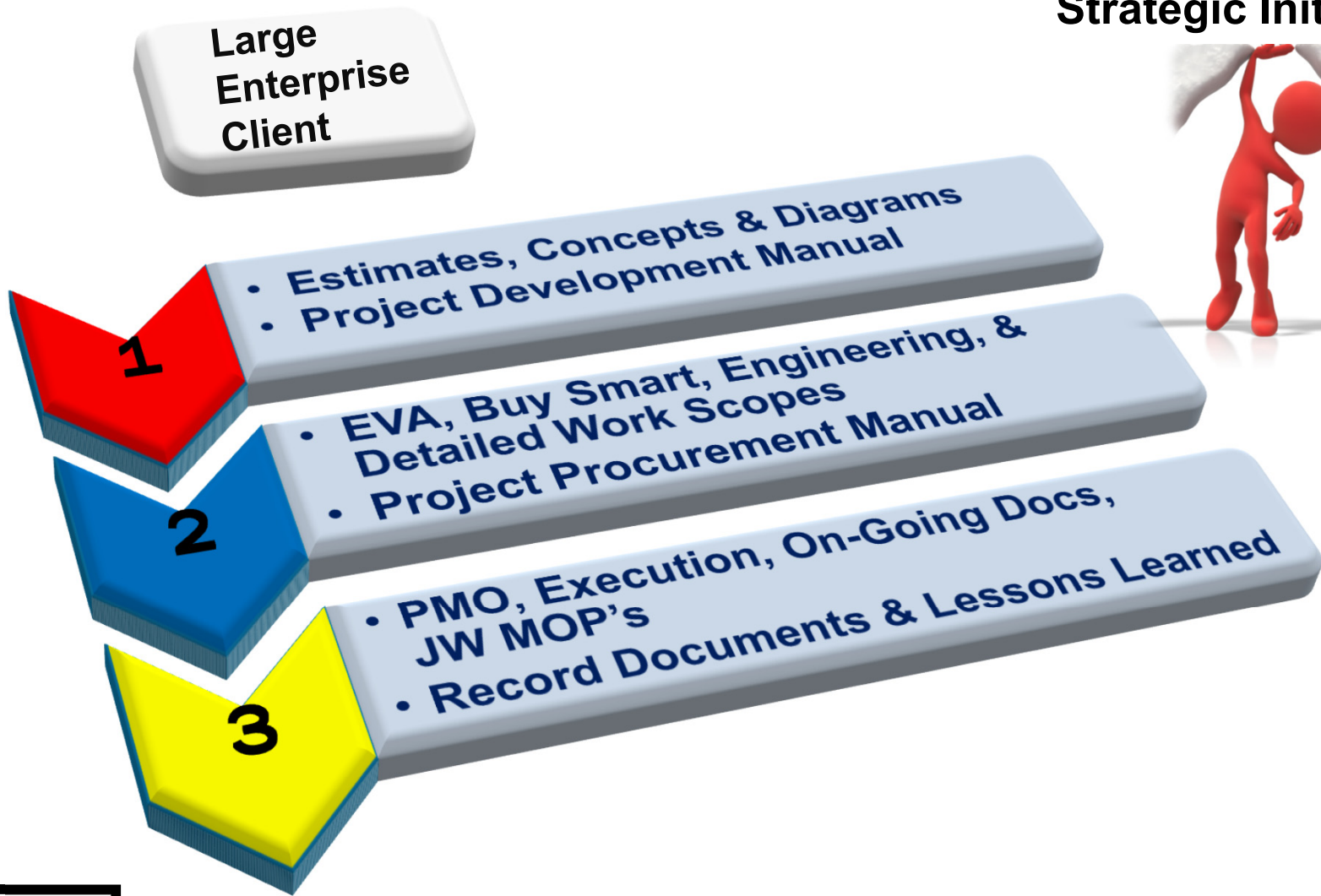


**But What
About
Procurement?**

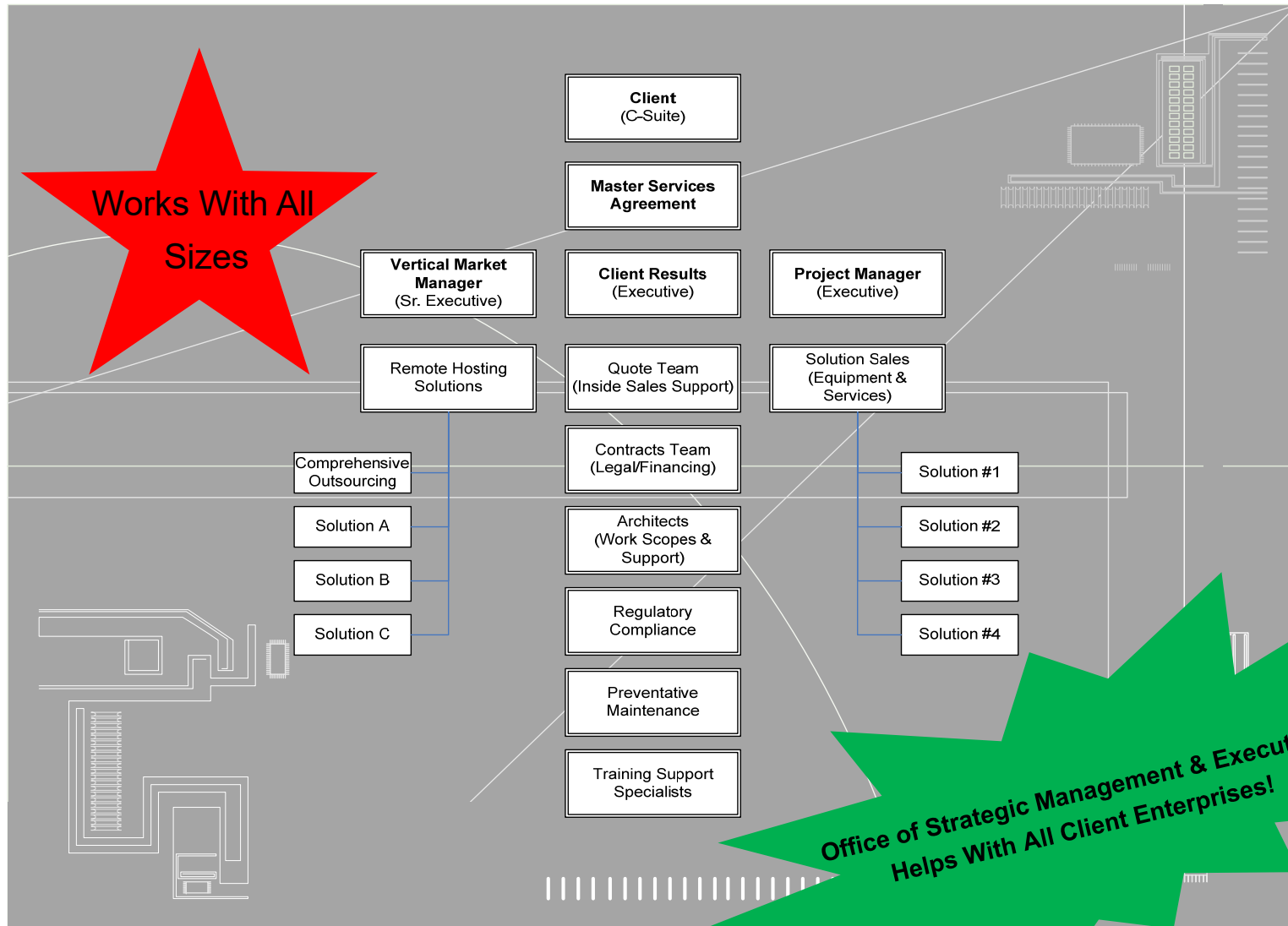
Early Contractor Involvement (ECI) Process

- 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

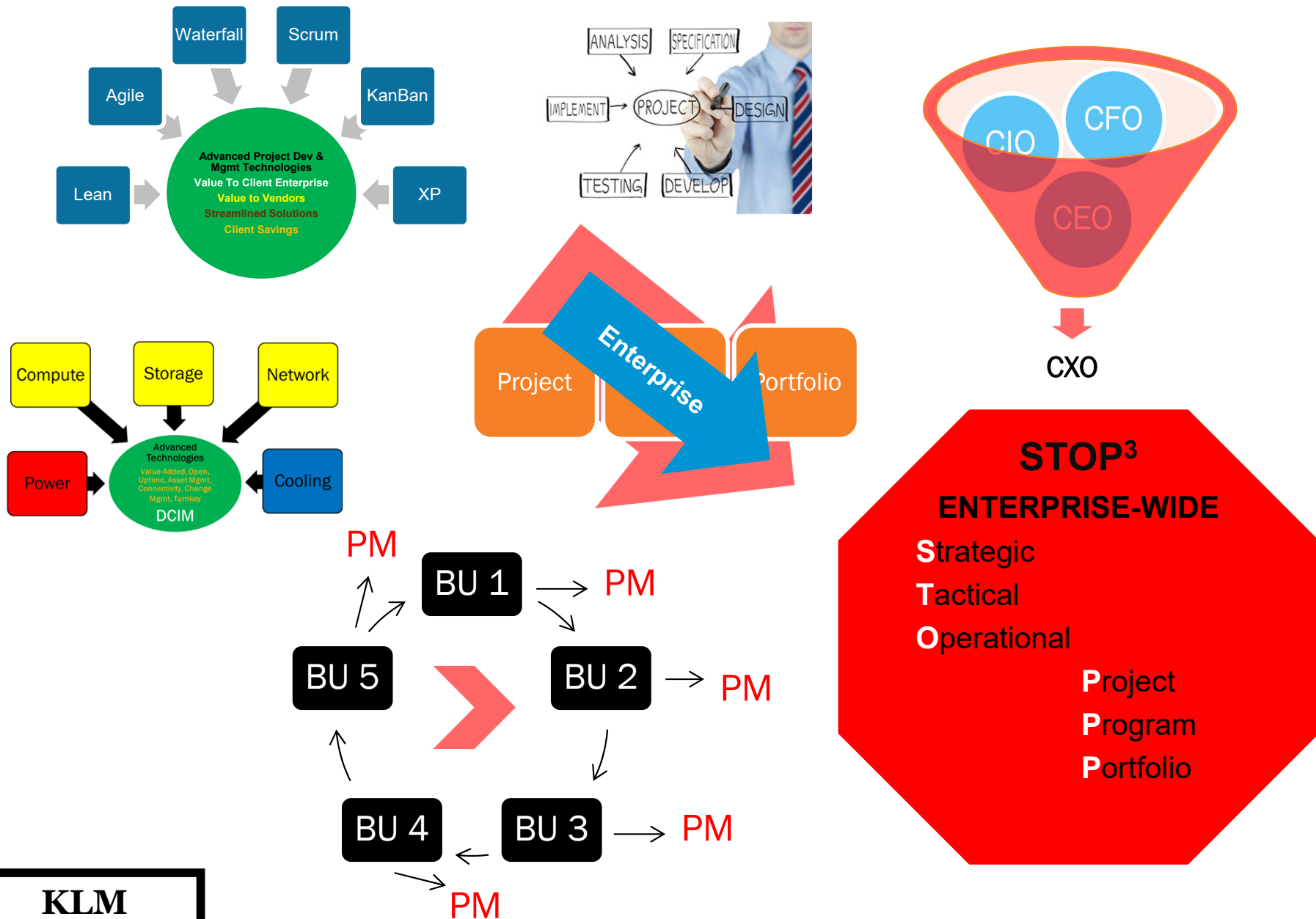
The OSM&E ECI Turnkey Process



Client's Enterprise – Works With All



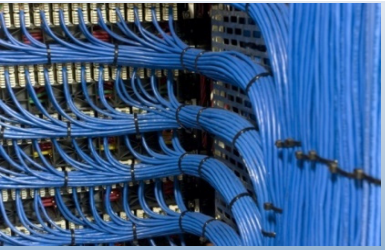
OSM&E Delivers Comprehensive SIM & OPM



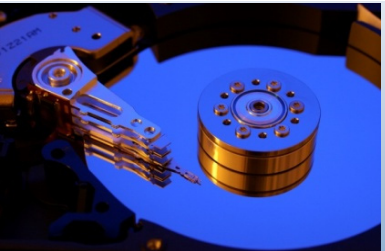
OSM&E Benefits



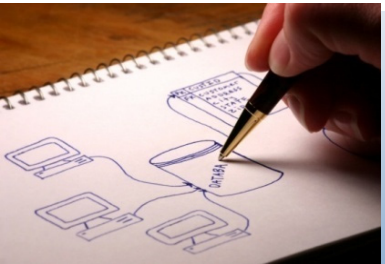
Delivers highest quality Enterprise collaboration with owner advocated **STRATEGIC INITIATIVES**, project objectives, and expectations disseminated to entire project team (internal and external).



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)

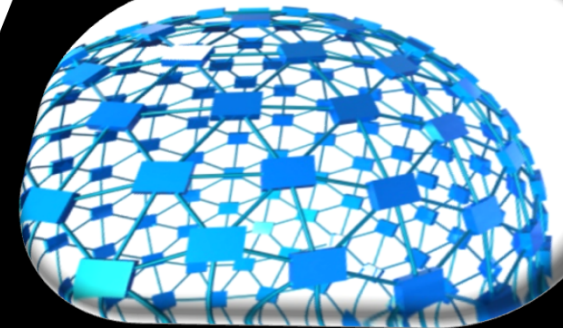
- **Structured Project Proposal with Full Disclosure**
 - *True Owner Advocacy Role with Subject Matter Expert*
- **Disclosing Client Strategic Initiatives, Familiarity with Client Standards, Industry Standards, and Existing Site Conditions, Promotes Improved Execution Through OSM&E**
 - *Improved Focus & 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

Office of Strategic Management & Execution

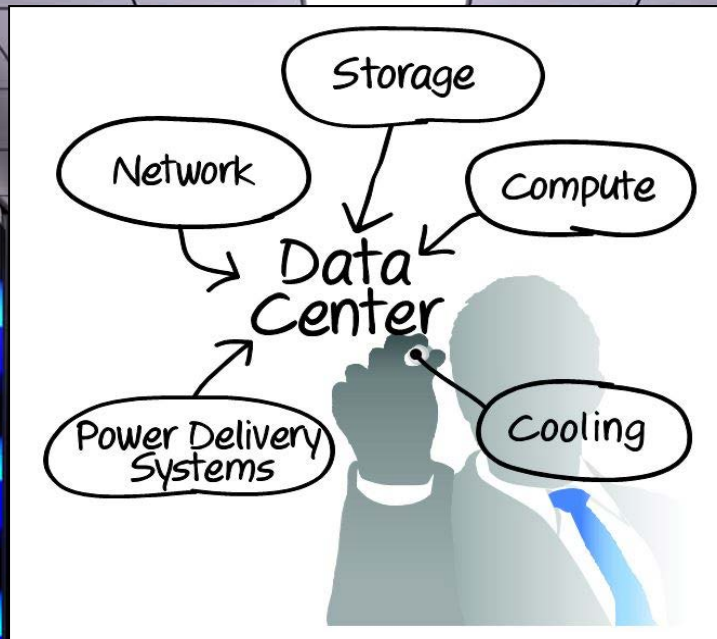
5464 NE Northgate Crossing

Lee's Summit, MO 64064

816-518-1201

mschaberg@klmservices.com

www.klmservices.com



The subject matter expertise inside the data center is simply remarkable. Their knowledge of the interdependencies inside the Micro Data Center (Compute, Network, Storage, Power, and Cooling) significantly improved the team's understanding of how one thing affects the other. Once we were informed, we were able to make better project decisions leading to significantly improved project outcomes. Staying on task, meeting our project timeline, and remaining under budget impressed executive management.

Data Center Manager



Bringing their data center subject matter expertise, flexible/hybrid project management style, and knowledge of enterprise business practices was a little intimidating at first. However, once we got to know their level of commitment to our success, these initial fears, quickly turned to mutual trust and admiration. The project meetings fostered a true sense of collaboration, attention to detail, and lots of owner advocacy. KLM Services is not your ordinary project management professional services firm. They worked with us from project development to commissioning and even coordinated the transitional training from all the vendors.

Director Project Management Office



Helping us follow a detailed project execution plan that included explaining how our project outcomes will significantly improve as they more closely align with our strategic initiatives, business case, and benefits realization. It was nice to hear our strategic initiatives recanted by the project team members. We wanted better project outcomes, KLM Services delivered.

Chief Information Officer

What Every Information Technologist Should Know About Technology Debt

by *Mike Schaberg*, Principal, KLM Services, LLC.

As Information Technology subject matter experts (SME's), we all have the responsibility to understand how our decisions are meeting, exceeding, or falling short of meeting our company's strategic direction and vision for Information Technology. Often times a considerable challenge with strategy is knowing how to identify, quantify, and properly describe the benefits of any investments in a business case for stakeholders such that the executives may make the most informed decision. Unfortunately, many business cases do not address the impacts of, nor the importance of, consistently identifying and reducing Technology Debt. Technology Debt means different things to different people, and impacts everyone differently, but the net result is always the same for everyone...The longer Technology Debt is allowed to compound itself, the harder it is to overcome. Knowing how to identify, quantify, and properly describe the benefits of Technology Debt Reduction will help Information Technology better understand the overall ROI for the Business Case .

So where do we start...



Technology Debt – “The tangible and intangible costs associated with not being able to invest in innovative technologies due to previous decisions respective to legacy IT systems and/or IT services perceived to be required to maintain the Data Center’s Current State of Operations. Further compounding this issue is when, at the same time, a viable, affordable, and technologically advanced solution could be deployed, but has not been implemented due to misunderstanding work scope benefits, costs, or both!”

Mike Schaberg

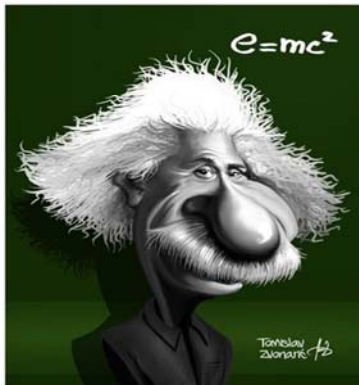
All IT Business Cases should include a section that discusses the Current State of the Data Center, the targeted Future State of the Data Center, and any existing Technology Debt (including what the industry terms Technical Debt) within the Current State. By using this type of diagrammatic approach within the Business Case, one should always be able to compare the Current State Diagram, Future State Diagram, and salient points identifying how to reduce the current Technology Debt in the most cost effective manner. Often times, it not just about spending money to improve the Current State, it's really making sure we understand the limitations of the Current State, the benefits of the Future State, and the real effects that spending money is going to have on getting us closer to the Desired Future State all the while reducing any Technology Debt. Whether the Business addresses infrastructure, hardware, software, or all three, crafting an excellent business case with these references will impress the financial executives and significantly help all stakeholders better understand where we are today, where we're planning to/wanting to be in the near future, and any constraints that are preventing us from getting there.

As we consider taking all these items into account and utilizing this information to help us create our business case, we should also anticipate the significance of promoting creative enterprise-wide collaboration with our team members, peers, counterparts, and executives. Making sure we have the right approach during the creation of this business case will reap incredibly high rewards. I believe, Albert Einstein stated it best, and Tomislav Zvonaric's caricature depicts it perfectly...

Recommended 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

"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

Samples from the industry as far back as 2011 addressing this debt

Gartner
 IT Research and Advisory
 Estimated \$500 Billion of "IT Debt" in 2010

Gartner Estimates Global 'IT Debt' to Be \$500 Billion This Year, with Potential to Grow to \$1 Trillion by 2015

"The issue is not just that maintenance keeps on getting deferred, it is that the lack of an application inventory and the absence of a structured review process for the application portfolio. This means the IT management team is simply never aware of the true scale of the problem"

led i neoaropoulos
 Technical Debt Practitioner
 Proposed "Stakeholder Perspective" at SEI in 2011

"Technical debt is any gap within the technology infrastructure, or its implementation, which has a material impact on the required level of quality."

Salient Points – Technology Debt

- Gaps that impact any required levels of quality represent technical debt
- If decisions are made to borrow against the ideal solution to speed initial delivery, interest must then be paid in the form of lower production, incremental risk, lower quality, etc. resulting in lower customer satisfaction overall
- Operations, Maintenance, Product Improvements, all become more difficult and proportionately more expensive
- The desire to infuse workarounds on top of workarounds compounds this interest continuously increasing the debt
- Capturing this type of Technology Debt may more accurately convey a direction that focuses efforts on an “Out of the Box” solution in lieu of continuously supporting more and more technical debt

The Big Five or Micro Data Center – Compute, Network, Storage, Power, and Cooling. The operational responsibilities were typically split into two separate areas of discipline within the enterprise – Information Technology (Compute, Network, & Storage) and Facilities (Power & Cooling). We've long since optimized this Data Center operational and organizational support structure to include a position that manages the Data Center in its entirety. Inside the Mega Data Center marketplace these positions are typically called Site Directors which are responsible for all aspects of Data Center operations and maintenance. The Site Director manages the P/L, all Data Center specialists (IT & Facilities), 3rd – party contractors, and typically reports to the CIO or COO. With this revised top-down reporting structure, the enterprise can remain acutely focused on fulfilling Information Technology's strategic direction, capture and define the Data Center's Current State, its Technology Debt, and its Desired Future State.

The Next Generation Data Center managed by a **Site Director** is typically concerned about the following items and focuses their team to know and understand them all. Without this top-down executive level management structure, there tends to be some Technology Debt associated with how the Data Center is being owned, operated, and maintained.

- | | | |
|--|---|--|
| • Analytics | • Strategy | • Data Center Operations Manager |
| • Cloud | • Architecture – Open Standards | • Critical Environment Technician Manager |
| • Cognitive Awareness | • Cloud Optimization | • Senior Engineer |
| • Commerce | • Desktop Optimization | • Security Operations Manager |
| • Technology Debt | • Unified Networking | • Data Center Infrastructure Management Specialist |
| • Internet of Things | • Unified Computing | • CET & DCO Technicians |
| • Industry Solutions | • Storage Optimization | • 3 rd Party Contractors |
| • IT Infrastructure | • Intelligent Automation | • Site Coordinator |
| • Mobility | • Operations Optimization | |
| • Security | • Converged Infrastructure & DCIM | |
| • Software Defined | • ITIL-based Management & Outcome-based metrics | |
| • Autonomy Using Patterns of Expertise | | |
| • Continuous Availability | | |

Whether we know it or not, within Information Technology, we deal with Technology Debt every day and it affects our investment strategy, how we operate the Data Center, and our attitude respective to escaping from it. As an Information Technologist, THE area of investment most critical to any organization is the ROI with TECHNOLOGY. If the CFO can rely on the CIO to understand and manage the technology along with its strategic direction, then the CFO must gain and have a full understanding of the company's technology costs and debt to effectively guide the organization to financial success along with conforming to its strategic direction.

Where does the Debt come from?

The first place to look for any type of technical debt is within software development. Consider this debt the work, re-work, or additional work required before a particular project, job, or service may be considered complete or proper. If this debt is not properly managed, quantified, and repaid, it continues accumulating interest, making it increasingly more difficult to implement future changes. For instance, when a company rushes a product to market as soon as possible either to gain market share, defend against a competitor, or both, it often times makes sense to launch the product knowing that everything isn't exactly as it should be but it's good enough to either gain market share, stop/slow down competitive encroachment, or both.

The second, and most costly, type of technology debt is with software, hardware, internal IT support, 3rd – party support, and any development costs used to support systems that are at the end of their respective life cycles. These are the end of life systems we know should have been replaced, written off, and their legacy forgotten. However, for whatever good reason at the time, these legacy systems were not demolished or written off, and they continue to operate today. As a CFO, these systems are identified by all of the time consuming, high-cost project budgets that have been approved over the years with the sole business value of “maintaining status quo” or simply having to do them to “stay in business”. Another area of technology debt are those technology projects that drastically fall short of the promised business case benefits. This debt is typically due to cost overruns associated with trying to gain the promised business case benefits.

Good or Bad?

Good technology debt increases your net worth and/or helps the company generate value. Going to market with a minimally viable product to gain market share and/or slow down competition, knowing that your roadmap addresses this technology debt and makes sure it gets paid off during the remainder of the lifecycle while also continuing to generate additional revenue over that lifecycle is a good thing. The key is to ensure that, just as with regular debt, you have a plan in place to pay it off in order to maintain your strong financial/technical position. This creates awareness, understanding, and a timeline for how long you expect to have this technology debt.

In contrast, bad technology debt does not increase revenue or market share and/or has no lasting value that decreases costs or improves the ability to go to market faster on future endeavors. Bad technology debt can also be any type of project or system that has extremely high support costs and/or project queues going forward that will/could unexpectedly consume your technology budget and staffing resources. Chances are that right now you have a multi-million dollar project in front of you where the sole purpose is to move an on-premise system from an “end-of-life” version to a currently supported version. Due to your customizations and integrations, this is probably a multi-year project that, when completed, will be one to two years from being “end-of-life” again and your company and your customers will be no better off for the effort. That is bad technology debt. You will never get that investment back and in no way will it positively impact your company's future success.

Having this good and bad insight about technology debt will not only allow you as the Information Technologist to manage yourself more soundly, but will also allow you to work smarter and more strategically with your C-Suite on how best to invest in your company's future.

At **KLM Services, LLC.**, we pride ourselves on helping our clients manage The Office of Strategic Management & Execution. It's this exemplary project management that helps define and develop projects, business cases, eliminate the gap between SIM & OPM, and constantly review the three most important operational and planning priorities for the Data Center...

1. Defining the Current State (Diagrammatic Representation Is Best)
2. Defining and Always Attempting to Escape or Eliminate Technology Debt
3. Defining the Desired Future State (Diagrammatic Representation Is Best)

Eliminating The Gap Between SIM & OPM

Strategic Initiatives



Future Topics Affecting Data Centers Include...

1. IoT – Planning Strategic Initiatives To Address Impacts
2. Scalable Data Center Infrastructures
3. Improving Horse Power & Connectivity @ the Edge of the Network
4. Key Performance Indicators Driving Data Center Retrofits, Consolidations, & Infrastructure Improvements
5. How Does Required Compliance to NFPA 70E Version 2015 Affect The Data Center