July 11th, 2016

ICT – The Achilles Heel of Commercial Construction

Presented by:
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Avistas

• 14 Year-Old Independent Management & Technology Advisors
• International Practice
• Specialize in Secure Information & Communications Technologies (ICT) accelerating growth and transformation.
Avistas Master Plans Secure ICT - Illustrative Projects Vital for *Agile* Critical Infrastructure

“Smart Cities”

King Abdullah Economic City

Opportunities for all in the city of the future

Total land area: 168 km²
Size of Washington D.C.

Smart City Operator

“Smart Power”
National Power Grid – 11 Time Zones

EAC/Rwanda - “Smart Countries”

“Smart Natural Gas” Distribution

“Smart Island” Wireless Broadband Overlay

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ICT Master Plan - J.C. Penney Company HQ

- Relocated from New York in 1995
- 3 Year Planning Cycle
- Occupied Temporary Office Space Across Dallas
- Designed to Support 10,000+ Employees
- Site Selection Keyed on split LATA for Redundancies
- Largest Fiber-to-the-Desktop in the World
- Original Copper Cabling Still in Place (Cat 5e UTP)
- Modular Phone System Survived 20+ Years With Upgrades
$5 BILLION MILE

- 1 Mile
- 4 Mixed Use Developments
- $5+ Billion USD in Capital Investment
Avistas Streamlines Enterprise Operations

Results
(The Right Things)
- Revenue Growth
- Profit/Cost Improvement
- Risk Mitigation

People
(Doing the Right Things)
- Customer Relations
- Sales & Marketing
- Human Capital
- Financing & Accounting
- Information Technology
- Inventory & Logistics
- Manufacturing & Design
- Research & Development

Processes
(Doing Things the Right Way)
- Program, Project & Product Management
- Services Delivery Management
- Change & Asset Management
- Project Portfolio Optimization
- Business Intelligence
- Acquisition, Merger & Divestiture
- Governance & Compliance
- Business Process Optimization
- Knowledge Performance Management

Technology
(Using the Right Tools)
- Applications & Integration
- Infrastructure & Systems
- Development Support

Line Of Sight
ICT Roles in Development & Relocations

*Protect Revenues, Reduce Risk, Optimize*

ICT Master Planning for new construction, renovation, “Smart Cities”, Global Economic Development & Revitalization Initiatives all include:

- Program & Project Management
- Technology & Operations Architecture Development
- Technical Spaces, Data Center Requirements and Design
- Physical Layer Cabling & Routing
- Integrated Network Infrastructure
- Voice & Video over TCP/IP
- Audio/Visual Requirements and Design
- Security & Building Management Systems
- Wireless Infrastructures
- Sensors & Internet of Things
- Business Continuity and Disaster Recovery
- Team Development and Management
- Transition to new facility with no business interruptions
Real Estate Perspective
Construction Project (CapEx Oriented)

Real Estate “Concept – to – Cash” Cycle: 6 – 18+ Months
(Based on Square Footage & Tenant Business Complexity)

Contract Broker / Developer
Contract Architect
Schematic Design
Design Development
Construction Documents
Procurement RFP (Subs)
Construction
Inspections
Certificate of Occupancy
Move In

Real Estate Transaction Drivers (Change Management)
1. Corporate Growth & Expansion
2. Corporate Consolidation, Restructuring or Austerity
3. Merger, Acquisition or Divestiture

Capital Project Drivers
1. Space & Functional Requirements (sq. ft.)
2. Location & Amenities
3. Value - Incentives

Typical Partners
1. Legal
2. Broker/Developer
   • Architect
   • General Contractor

Corporate Economics & Risk Objectives
1. Grow Revenue
2. Increased Profitability (While Minimizing Expenses)
3. Mitigate Risks
Client Staff – **Avistas is an independent representative**

1. **Infrastructure Technology** (Move, Merge/Upgrade, Replace or Outsource)
2. **Applications** (Move, Upgrade, Merge, Replace or Outsource)
3. **Business Processes** (Maintain, Merge/Enhance, Outsource)
4. **Staffing & Support** (Hire, Fire, Assimilate, Train, Outsource)
5. **Develop OpEx & CapEx Budgets** (non-linear, based on licensing, seats, storage, processors, concurrent sessions, etc.)
   a) Operations Budgeting & Planning
   b) Capital Budgeting & Planning
Partnering to Assure Success

Team Avistas – Your “ICT Program Manager”

- Business Continuity
- Disaster Recovery
- Master Planning
  - Data Center
  - Call Center
  - Technical Spaces
  - Collaboration Spaces
    - Board Rooms
    - Conference Rooms
    - Training Rooms
- Networks
- Telephones
- Applications
- Processing & Storage
- “Green” Design
  - Power
  - Computing Systems
  - Infrastructure
    - Cabling
    - Wireless
    - Audio Visual Systems
    - Security

- Operational Requirements
  - Planning & Initial Budgets (CAPEX & OPEX)
  - Detailed Design & Specifications
  - Scheduling
  - Procurement
  - Implementation Management

- Technology Requirements Packages

- Construction Coordination and Testing

- CAPEX Management - Facilities

- Broker/Developer

- Architect
  - Civil Engineers
  - Structural Engineers
  - MEP Engineers

- General Contractor & Trades
  - Site Planning
  - Construction
    - Shell Building
    - Interiors
  - Mechanical/HVAC
  - Plumbing
  - Electrical

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Infrastructure Objectives:
Target 10+ Year Life Cycles

- Define Operational and Technology Requirements
- Develop Rational Architecture and Designs for New Facility
- Provide the Best Overall Value to the Company
- Maintain Transparent LAN/WAN Operations
  - Minimum End User Disruption
  - Minimum Applications/Services Interruption
- Provide Effective Program and Project Management
  - Integrated Teaming with the Client
  - Meticulous Planning
  - Business Continuity and Rollback Plans
  - Change Management
  - Construction and Implementation Coordination and Control
Small Technical Spaces

Huge Revenue Impact

Examples – Typical “Small Technical Space”

500 sq. ft. Data Center
- 10 IBM Blade Center Racks
- Mixed processors and disk
- 3 Blade Centers per rack
- 1 Networking Cabinet

Power:
- Blade Centers
  - 2,900 Watts per Blade Center
  - 30 Blade Centers
  - 87,000 watts
- Network Units (routing & switching)
  - 6,000 Watts per Network Unit
  - 2 network units
  - 12,000 watts
- UPS rating – 120KVA
  - Losses – 9,900 watts
  - Total Approx. 108,900 watts

Weight:
- 350 lbs per Blade Center
- 250 lbs per rack
- UPS – 3,000 lbs
- Batteries – 5,000 lbs
- Total Approx. 19,000 lbs

Emergency Services:
- 48 hour run times
- Fuel dispatch within 24 hours

Summary:
- 218 watts per square foot for systems
  (office space is < 5 watts per square foot)
- 31 tons of cooling (30% more power)
- Total power requirement – 140Kw (165KVA)

Business Impact
- $2,000,000 in hardware and software installed
- $200,000+ in annual support costs
- Supports 1,000 – 5,000 employees enterprise-wide
- Supports $1+ billion in client transactions and annual revenue

Services Companies Require Careful Consideration

A major Internet Service Provider:
- Developed $150 million facility
- Installed $1 billion in equipment
- Generates over $4 billion in annual revenues

Local DFW Financial Services Companies:
- “A” Generates $4 million per hour unrecoverable revenue
- “B” Generates $5 million per day unrecoverable revenue
Questions?

Thank You!

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