Panel Presentation: Hurricane Impact: Damage, Recovery and Rebuilding Assessment

Session E
Robust Infrastructure

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May 11, 2007
New Orleans, Louisiana

Tulane University 2007 Engineering Forum
Science Applications International Corporation (NYSE: SAI)

Who We Are...
SAIC is a leading systems, solutions and technical services company offering a broad range of Expertise in:
- Defense modernization efforts;
- Intelligence, homeland security;
- Logistics and product support;
- Health and life sciences;
- Space and earth sciences; and
- Global commercial services.

The Facts...
✓ Long-Term Relationship with Entergy (2010)
✓ $7.8B in annual revenues for FY06 (8% Growth)
✓ Greater than $2B in outsourcing
✓ More than 42,000 professionals worldwide
✓ More than 30,000 engaged in IT Delivery
✓ Over 5,000 engaged in Energy Industry

#2 Top 25 Systems Integrators
Federal Computer Week | September 2006

#4 America’s Most Admired Companies – IT Services
FORTUNE | March 2007

#13 Defense News Top 100
Defense News | June 2006

#21 Top Environmental Firms
Engineering News Record | July 2006

#285 Fortune 500
FORTUNE | April 2006
<table>
<thead>
<tr>
<th>Weeks</th>
<th>Day</th>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Week 9</td>
<td>57</td>
<td>25-Oct</td>
<td>Infrastructure Assessment Sponsorship Meeting</td>
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<tr>
<td>Week 10</td>
<td>64</td>
<td>1-Nov</td>
<td>Preliminary Submittal to Nuclear BU</td>
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<tr>
<td>Week 12</td>
<td>81</td>
<td>18-Nov</td>
<td>Telecommunication Lessons Learned (Retrospect) Published</td>
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<td>Week 20</td>
<td>137</td>
<td>13-Jan</td>
<td>First Draft of Report</td>
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<td>Week 24</td>
<td>162</td>
<td>7-Feb</td>
<td>Assessment Technical Tabletop Walk-through</td>
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<td>Week 26</td>
<td>176</td>
<td>21-Feb</td>
<td>Entergy Sponsorship Briefing</td>
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- Assessment initiated less than 60 days after Katrina
- Completes 6 months after Katrina
The Process

- Identify Scope – Include all telecommunications; exclude Data Center
- Identify Approach – Comprehensive View to “Harden” infrastructure
  - Need Requirements – include ALL Business Units and Grid Blackout
  - Corrective Actions – Weaknesses identified or perceived
  - New Initiatives – Gaps in current program
- Not to be taken as criticism
  - Restoration work was “exceptional and extraordinary”
- Approach to Action – Alignment to justification and budget process
The Process

“Approach to Action”
Systems Model

Inputs
- Need Requirements
  ALL Business Units
- Corrective Actions
  Weaknesses
- New Initiatives
- Gaps
The Process

"Approach to Action" Systems Model

**Inputs**
- Need Requirements
  - ALL Business Units
- Corrective Actions
  - Weaknesses
- New Initiatives
- Gaps

**Process**
1. Synergies among BUs
2. Identify Cost
3. Implementation Ease

**Outputs**
- 24 Initiatives
  - 2006 “Quick hits” before next storm season
  - 2007 funding evaluation
  - 2008 & future funding evaluation

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The Process

“Approach to Action” Systems Model

**Inputs**
- Need Requirements
  - ALL Business Units
- Corrective Actions
  - Weaknesses
- New Initiatives
- Gaps

**Outputs**
- Approved Business Cases
- Approved Funding

**Process**
1. Synergies among BUs
2. Identify Cost
3. Implementation Ease

**24 Initiatives**
- 2006 “Quick hits” before next storm season
- 2007 funding evaluation
- 2008 & future funding evaluation

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The Systems

- **Circuits**: AT&T, BellSouth, SBC
- **Cell Phones**: Sprint, Nextel, Verizon, T-Mobil
- **PDA**: Blackberry, Trio or Palm
- **Pagers**: Teletouch, Metrocall

Carrier/Vendor
Last-Mile and
Commercially Available
The Systems

ENTERGY 800 MHz
2-way radio system
Service territory covers 133,000 square miles
with 2 ½ million customers.

Entergy 800MHz Radio
133,000 Square Miles
181 tower site
7,800 Subscribers

64 Dispatch Positions
182 Sites
8,000 Devices

Customer locations (distribution transformers)
Service Area
Zone Controller site
Antenna site
The Systems

- Satellite Portable Phones
  - GlobalStar, Mobile Satellite Ventures carriers
- No data services

Entergy’s Satellite Communications
GETS provides emergency access and priority processing in the local and long distance segments of the Public Switched Telephone Network (PSTN). It is intended to be used in an emergency or crisis situation when the PSTN is congested and the probability of completing a call over normal or other alternate telecommunication means has significantly decreased.

Public Health, Safety, and Maintenance of Law and Order

- Critical logistics functions and public utility services

http://gets.ncs.gov/
The Lessons

Results:

- Power loss longer than designed in telecommunications systems
- Lack of connecting infrastructure creates single point of failure for telephone communications
- Power loss is single point of failure for HVAC systems required to cool electronics
- Wind damage/extended power loss and flooding of commercial carrier offices, towers and communications relaying hubs shut down communications capabilities

Failure Modes:

- Flooding
- Hurricane Force Winds

Secondary:

- Heat
The Lessons ... Elements for Change

1. Additional system integration
2. More technology layering
3. Alternate access for critical systems
4. New designs need stand-alone sustainability
5. Infuse new commercial technology
6. Consider elevation when possible
7. Always take into account water and heat
The Recommendations

- Leverage cell phone “push-to-talk” feature
- Broaden use of text messaging
- Continue use and central support of Blackberry
- Continue control and use of standards when upgrades or repairs are made
- Include water intrusion assessment
- Include back-up power requirements
- Update voice infrastructure plan to include command and control centers as priority sites for expanding IP-enabled capabilities;
- Some fiber rings currently exist to provide a diverse path for traffic - Review "Important" command and control locations
- Design satellite trunking/telephone plan as a “system” plan to reduce cost and leverage vendor/contracts; and
- Use of GETS

Tech Areas

1) Carriers/Vendors
2) Assets of Entergy
3) Wireless
4) Satellite-enabled
5) Government
The Improvements

Telecommunications Assessment
- All 24 initiatives have been addressed
- 11 “Quick Hits” identified

SAIC Support of Projects Due to Assessment and DR
- 74 projects have been identified
  - 22 Complete
  - 41 Active
  - 2 Pending
  - 9 Others being Planned