Utility Industry Disruption: 4 Profound Trends Impacting IT Modernization Projects

Sponsor Solution Presentation
CS Week 2018

May 2018
Agenda

- Introduction
- Recent CIS Project Profiles
- 2018 CIS Modernization Drivers
- Five Profound Trends Impacting IT System Modernization Projects:
  - Evolving Customer Expectations
  - Desire for System Integration
  - Evolving Need for Agile Systems and Support
  - Increased Demand for Third Party Support
  - Cloud Solutions Now a Real Consideration/Option
- Conclusions
- Resources
Introduction
Introductions – Our Team

Mario Bauer - CEO
Mario has worked with over 50 utilities in North America on a wide range of consulting assignments including: business and IT strategies, effectiveness and efficiency studies, and business case development. Additionally, he has lead technology projects for many of the largest investor owned, municipal and public utilities in North America. Mario previously held positions at Colorado Springs Utilities, UMS Group, Bearing Point and Five Point Partners.

Tim Almond - President
Tim Almond, President of TMG Consulting, has more than 31 years of experience in IT and utility business operations and is recognized for his strong project management, knowledge transfer and customer service skills. Having worked on more than 35 projects, Tim is an expert in credit and collections, CIS (customer information systems), smart metering, utility analytics, and software development, services and implementations. Prior to joining TMG, Tim worked for leading financial and software companies as a data center manager, commercial software product manager and project director implementing CIS-CRM (customer relationship management) systems with medium to large utility companies in the U.S. and Europe.
Pam Glanvill – COO
Pam is the COO at TMG. She joined TMG after a long and successful career guiding and implementing mission critical applications. She has worked in the IT industry in South Africa and the United States for almost thirty years, specifically focusing on the utility and revenue verticals for the last eighteen years. Among other various positions within SPL World Group and Oracle, she was the VP of Delivery, responsible for leading and growing the CC&B product as well as the implementation services. She then became the President of Origin Consulting in 2011 and was responsible for growing that company into a successful consulting firm. At TMG, Pam is responsible for our Client-Side Delivery Support services. Her role will include overall responsibility for the project.
Recent CIS Project Profiles
Completed Projects - Utility Profiles

**LEGEND**

- Cooperatives
- Retailers
- Public utilities
- Investor-owned utilities (IOUs)

**TRENDS**

- Analysis represents more than 54 million accounts
- About one-third offer multiple commodities
- About one-half offer electric service
- About one-quarter offer water service
- About one-quarter offer gas service

Source: Insight™, TMG Project Database, retrieved May 2018
Where in the life cycle are these projects?

**LEGEND**

- Implementing
- Procuring
- Live
- Planning

**TRENDS**

- 16% are planning or procuring work, a decrease of 1% since TMG’s last analysis in 2017
- 77% are now live; in 2017 only 69% were live
- The total implementing has decreased 6% since 2017

*Source: Insight™, TMG Project Database, retrieved May 2018*
Applications In Use or Migrating To

LEGEND

- Harris Utilities Solutions
- Legacy
- SAP
- Oracle

TRENDS

- SAP: 72% projects at IOUs, 28% at public utilities
- Oracle: 66% projects at public utilities, 34% at IOUs, 8% at co-ops
- Harris: 92% projects at public utilities, 8% at cooperatives
- Several Legacy customers are on Customer 1 and Banner products

This graphic does not depict CIS market share; it’s a reflection of projects contained within Insight™, TMG’s project database.

Source:
Insight™, TMG Project Database, retrieved May 2018
Data Centers: In-house or Hosted

**TRENDS**

- The total on hosted data centers has increased by 7% since 2017
- The total of in-house solutions has decreased by 7% 
- The data and research indicates that cloud solutions will continue to grow going forward.

Source:
Insight™, TMG Project Database, retrieved May 2018
Implementation Timeframes

### LEGEND

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-29 months</td>
<td>14%</td>
</tr>
<tr>
<td>30-plus months</td>
<td>43%</td>
</tr>
<tr>
<td>18-20 months</td>
<td>26%</td>
</tr>
<tr>
<td>10-17 months</td>
<td>17%</td>
</tr>
</tbody>
</table>

### TRENDS

- Overall average implementation is 23.1 months
- Smaller public utilities have 10-18 month deployments
- Large multi-service/jurisdictions utilities of 2M accounts or more had timelines of 30 months or more
- Cloud solution appear to reducing implementations timelines by 25-33%.

Source: Insight™, TMG Project Database, retrieved May 2018
Tier 1 Projects: Cost Per Customer

<table>
<thead>
<tr>
<th>LEGEND</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SI Services</td>
<td>$5.62</td>
</tr>
<tr>
<td>Internal</td>
<td>$3.82</td>
</tr>
<tr>
<td>Hardware</td>
<td>$40.12</td>
</tr>
<tr>
<td>Software</td>
<td>$21.52</td>
</tr>
</tbody>
</table>

TRENDS

- Average total cost per customer: $82
- Highest cost per customer: $105
- Lowest cost per customer: $59
- SI Services will decrease in revenue among utilities who choose a Cloud solution because preconfigured offerings based on best practices.
- Contingency and product extensions (BI, CRM, MDM, Bill Print, etc NOT included)

Source: Insight™, TMG Project Database, retrieved May 2018
TMG’s Cost Guidelines (Tier 1)

- This represents TMG’s general pricing guidelines for the installation of a new CIS product solution including complimentary products and services.
- BOTTOM LINE: overall, a total price per customer generally ranges from $59 to $105.

<table>
<thead>
<tr>
<th>Costs Per Customer</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor Base Installation Costs</td>
<td>$20</td>
<td>$12</td>
</tr>
<tr>
<td>Solution Integrator Costs</td>
<td>$44</td>
<td>$25</td>
</tr>
<tr>
<td>Utility Installation Costs</td>
<td>$21</td>
<td>$13</td>
</tr>
<tr>
<td>Extended CIS Products Costs</td>
<td>$20</td>
<td>$10</td>
</tr>
</tbody>
</table>

**LEGEND**

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor Base Installation Costs</td>
<td>Hardware, software, services, expenses and contingency. Per metered service.</td>
</tr>
<tr>
<td>Solution Integrator Costs</td>
<td>Additional services (e.g. PMO, BPA) to implement the base CIS product and/or extended CIS products.</td>
</tr>
<tr>
<td>Utility Installation Costs</td>
<td>Payroll, benefits, marketing, project supplies, project room, training room, temporary services, etc.</td>
</tr>
<tr>
<td>Extended CIS Products Costs</td>
<td>Costs associated with software components that extend the capability of the base CIS e.g. bill print, EBPP, BI, CRM, MDM.</td>
</tr>
</tbody>
</table>
Tier 2 Projects: Cost Per Customer

<table>
<thead>
<tr>
<th>LEGEND</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor Professional Services</td>
<td>$6.72</td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>$4.17</td>
<td></td>
</tr>
<tr>
<td>Hardware</td>
<td></td>
<td>$17.13</td>
</tr>
<tr>
<td>Software</td>
<td>$12.91</td>
<td></td>
</tr>
</tbody>
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**TRENDS**

- Average total cost per customer: $57
- Highest cost per customer: $62
- Lowest cost per customer: $35
- Contingency and product extensions (BI, CRM, MDM, Bill Print NOT included)

Source: Insight™, TMG Project Database, retrieved May 2018
TMG’s Cost Guidelines – Tier 2

- This represents TMG’s general pricing guidelines for the installation of a new CIS product solution.
- BOTTOM LINE: overall, a total price per customer generally ranges from **$35 to $60**.

## Costs Per Customer

<table>
<thead>
<tr>
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<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor Base Installation Costs</td>
<td>$12</td>
<td>$6</td>
</tr>
<tr>
<td>Solution Integrator Costs</td>
<td>$22</td>
<td>$12</td>
</tr>
<tr>
<td>Utility Installation Costs</td>
<td>$16</td>
<td>$11</td>
</tr>
<tr>
<td>Extended CIS Products Costs</td>
<td>$10</td>
<td>$6</td>
</tr>
</tbody>
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2018 CIS Modernization Drivers
Participants

TMG Research Study:
CIS Modernization Drivers, April 2018

<table>
<thead>
<tr>
<th>CIS Age</th>
<th>Implementing</th>
<th>Live in last 5 years</th>
<th>5 - 10 years</th>
<th>11-15 years</th>
<th>Older</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11.4%</td>
<td>20.0%</td>
<td>22.9%</td>
<td>14.3%</td>
<td>31.4%</td>
</tr>
</tbody>
</table>
Participants – Metered Accounts

<table>
<thead>
<tr>
<th>Metered Accounts Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50,000</td>
<td>17%</td>
</tr>
<tr>
<td>50,000 to 100,000</td>
<td>17%</td>
</tr>
<tr>
<td>100,000 to 250,000</td>
<td>26%</td>
</tr>
<tr>
<td>250,000 to 500,000</td>
<td>9%</td>
</tr>
<tr>
<td>500,000 to 750,000</td>
<td>6%</td>
</tr>
<tr>
<td>750,000 to 1 million</td>
<td>3%</td>
</tr>
<tr>
<td>1 million to 2 million</td>
<td>6%</td>
</tr>
<tr>
<td>2 million to 3 million</td>
<td>6%</td>
</tr>
<tr>
<td>More than 3 million</td>
<td>11%</td>
</tr>
</tbody>
</table>

Utility Type

- **IOU**: 37.1%
- **Muni**: 54.3%
- **Other**: 8.6%
Participants – Commodities

- Electricity: 54%
- Gas: 37%
- Water: 69%
- Wastewater: 49%
- Refuse: 20%
- Stormwater (drainage): 17%
- Other: 34%

1 Commodity: 20%
2 Commodities: 37%
3 Commodities: 12%
4 Commodities: 11%
5 Commodities: 20%
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<table>
<thead>
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Metered Only:
- 1 Commodity: 48%
- 2 Commodities: 43%
- 3 Commodities: 9%
Upcoming Projects – CIS Modernization Drivers

1. Evolving customer expectations 61%

2. Improve Integration 52%

3. Aging Workforce 43%

4. Ease of implementation of new initiatives 41%

5. Improve data access / Upgrade path 37%

Top 5 Replacement Drivers
Upcoming Projects – CIS Modernization Drivers

- Evolving Customer Expectations: 60.8%
- Better Integration: 52.1%
- Aging Workforce - Future: 43.4%
- Flexible Architecture: 41.3%
- Data Accessibility: 36.9%
- Upgrade Path: 36.9%
- Aging Workforce - Current: 23.9%
- Agility: 21.7%
- Integrated Platform: 21.7%
- Alternate Revenue - Customer: 19.5%
- Multi-jurisdiction: 17.3%
- Cost of ownership: 17.3%
- Increased Security: 17.3%
- Improve 3rd party support: 8.6%
- One-stop-shop: 6.5%
- Alternate Revenue - Utilities: 4.3%
- Other: 8.6%
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Staffing and Support

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Upcoming CIS Projects

“When do you plan to replace your CIS?”

- Within the next 4 years: 54.3%
- Original plans put on hold: 6.5%
- Extend Current: 19.6%
- Future plans unknown: 17.4%
- Other: 2.2%
New Market Entrants

- Not at all likely: 57% (CIS), 36% (SI)
- Somewhat likely: 25% (CIS), 40% (SI)
- Likely: 16% (CIS), 21% (SI)
- Very likely: 2% (CIS), 2% (SI)
Driven by rising customer expectations

Non-Significant differences in demographics
4 Profound Trends Impacting IT Modernization Projects
1. Evolving Customer Expectations
Evolving Customer Expectations

- **Customer contact preferences** are subject to change for any reason and without notice.
- Low **customer satisfaction scores** are directly linked to poor rate case approval.
- Customers have a desire for **personalization**.
- Expect to receive **real-time access to information** like usage and billing data, and instantaneous communication 24 x 7.
- New generation of utilities considering bolting the **CRM to the CIS**, but no solid case studies proving the success of this approach.
- Customers are becoming "**energy experts**".
- "**Living off the grid**" will become mainstream due to the significant increase in solar panel programs.
- Consumers are **taking control of their energy consumption** through smart meters, smart home devices and mobile apps.
The Mobile Imperative

- All channels need to be accessible via mobile devices
- Website improvements are leading digital priority for utilities with mobile compatibility
- A little more than half of utilities interviewed have a mobile apps, but very few offer bill pay, usage, and outage info capabilities at this time
- When asked about using text, text-enabled bill pay showed the most promise but, overall, text-related initiatives are being spearheaded by early adopters
- More than two-thirds of utilities rate web and mobile self-service channels as essential customer experience priorities
- 48% of consumers prefer to use a mobile device to communicate with their utility
2. Desire for Integration
Technology Stack

- Enhanced and adaptable integrations are a requirement in the multi-application environments with independent upgradability.
Desire for Integration

- Increasing desire for **one view of the truth** through the integration of multiple systems – second leading CIS Modernization Driver in study

- Driven heavily by need for **data analysis** and creating **operational efficiencies**

- Conversations around the **CIS of the future**; should the CIS scope be expanded instead of integrating

- Some utilities are expanding their solution by **integrating CIS with other operational systems** (i.e. – GRID, Outage, WAM, AMI, etc.)
3. Increased Demand For Third Party Support
Interest in Third-party Services

Use of Third-Party Providers (2018-2020)

- Increase 48.8%
- Stay the Same 31.7%
- Decrease 7.3%
- Unsure 12.2%

Needed Third-Party Services

1. Core billing services and/or bill production: 12
2. Ancillary, complementary services: 16
3. Enhanced or premium services: 7
4. Supplemental services: 6
5. None of the above: 12
6. Other: 6

Use of Third-Party Providers (2018-2020)
Increased Need for Third-party Support

Modern Challenges

- Large IOU projects are **snatching up the most experienced resources** available in the industry, which leaves some projects with lesser qualified resources.

- **Retirees are leaving significant gaps** in a utility’s ability to support legacy systems.

- Utilities are **struggling with internal expertise** to support implementations and the data analysis needed to capitalize on “smart” investments.
Increased Need for Third-party Support

Modern Solutions

- Some large IOUs plan to hire multiple system integrators to deliver enterprise system replacements.

- Horizontal focus of third-party consultants, who have built their careers managing projects with ever-evolving complexities, reduce risk and help utilities secure the best SI resources.

- The support model for cloud/hosted solutions translates to less internal IT support staff and an increased need for third-party expertise.
Cloud-specific Vendor Questions

- How will the infrastructure that holds all my sensitive data be physically secured?
- Will you maintain and operate a proven incident response plan to ensure efficient recovery from a security incident/breach?
- How will your team ensure bills go out the door correctly and incoming payments are processed quickly?
- Are upgrades included in my monthly fees and how often will they be performed? Does this include new preconfigured functionality?
- How much is re-invested annually to ensure I have a CIS that is up to date in a rapidly changing industry?
- Can you provide me with complete pricing model for the next 10 years
4. Need for Agile Systems & People
Need for Agility

- System and process **flexibility/agility is the new imperative**
- Success is increasingly about the **ability to change in the future**, not just about achieving go-live and stabilizing the system(s)
- Rise of versatile resource who can **quickly become an expert** in the discipline of business transformation
- Agility to evolve alongside customer expectations and boost customer satisfaction (channels, personalization, etc.)
- Ability to easily modify core functionality
- Agility to sell revenue generating services like: EVs, net metering, energy efficiency, home warranties, water heaters, solar panels, other home services (internet, cable, insurance, etc.)
- Ease of which to upgrade or update CIS Solution
- Need to easily extract data for web-portals, mobility extensions, business intelligence and sophisticated financial reporting and leverage data analytics for business improvements
- Need for better integration across multiple systems
5. Cloud Solutions Now a Real Consideration/Option
Cloud Solutions

- **30%** Respondents say they would consider Cloud CIS in January 2017
- **66%** Considerations increased in 2018
- Diverse/very **different solutions** being called “Cloud”
- **Security** remains a concern with more education needed
- Cloud **can be more secure than on-premise solutions** but not all providers/protocols are equal
- Focus on **business needs and security requirements** and seek solutions that meet the needs

Source: TMG’s annual “2018 CIS Modernization Drivers”
Lessons Learned & Best Practices
Top 10 Reasons Why Projects Fail

1. Weak Governance Model
2. Unclear expectations
3. Inexperienced SI personnel selected
4. Poor solution due diligence / contract
5. Inadequate project staffing by utility
6. Too many enhancements
7. Poor data conversion
8. Premature go-live / Quality goals are ignored
9. Weak Support Organization
10. OCM is light and/or an afterthought

Similar for most complex IT projects (CIS, MDM, AMI, WAM, ERP, etc.)
Planning

- Define measurable success criteria
- Define a set of principles to guide your teams
- Establish detailed project scope
- Design a governance model that works
- Plan your procurement, project, and support teams
- Secure a realistic budget
- Identify and manage risk starting Day 1
Selecting

- Your business is complex, the solutions are complex; hire someone who understands both

- Establish expectations early and often with vendors

- Keep your executives engaged in the process

- Make your selection team accountable for their decisions

- Consider your limitations and strengths – they will help determine the best solution for you
Implementing

- Identify resources who are available for the full implementation
- Staff-up for cut-over!
- Understand the skill sets needed and properly vet internal and 3rd party resources (don’t settle for the B team)
- Don’t compromise on quality – focus on bill accuracy
- Control scope tightly; don’t get derailed by “nice to haves”
- Manage the vendor and yourselves by to the contract
- Actively manage your portfolio
- Measure, plan, manage, repeat
Operating

- The project is not done at go-live
- Keep an eye on back-office backlogs
- Efficiency will drop, initially – staff-up accordingly
- Establish a robust support organization
- Organizational Change Management is critical and often underestimated
- Measure goals, expectations and KPIs
Conclusion
“There is Nothing Permanent Except Change.”

- Heraclitus of Ephesus
Resources
TMG Services: Core Four

With the mission to de-risk strategic decisions and optimize IT investments. TMG offers four primary service lines:

- **Advisory Services**: Application Planning, Business Case Development and Procurement
- **Client-side Professional Services**: Implementation Leadership, Quality Assurance and Project Staffing
- **Managed Services**: IT System Stabilization, Ongoing Maintenance, and Upgrade Support
- **Research Services**: Industry and Cross-Industry, Custom Research, and Published Reports

Since 1992, more than 275 utility companies have trusted us with planning, justification, acquisition, implementation and support for mission-critical projects.
Publications & Events

- Report: 2018 CIS Modernization Drivers
- Report: The Evolution of Cloud Attitudes & Adoption
- Open Survey: Utility of the Future
- Event:

![Image of TMG Utility Forum: Managing Disruption 2018]

Learn More:
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