

Innovation Evolution

A Focus On New Methods For Solving
Today's Challenges



Traditional Method To Solving Problems

Step	Benefit	Weakness
Identify the Challenge		

Exemplified in a typical Design Bid Build approach

Traditional Model to Solving Problems

- Assumption
 - Product Service Focus
- Strengths
 - Meant to level the bid field
- Weaknesses
 - Assumes equality
 - Assumes separation
 - Does not adequately address interoperability
 - Leads to vagueness
 - Leads to fudge factor

**Vagueness =
higher bid
contingency**

A Juggling Act Of Challenges



**To Solve Requires
Something Unique**



Introducing A Solutions Based Approach

*“A Solution is an innovative combination of technology, products, and services providing a **high value unified response** to business customer needs”* (MIT Sloan Management Review Spring 2006)

Innovative:

A Unique and Creative Custom Approach

Combination of Technology, Products, and Services:

Looks at combined impacts, does not assume equality or clear separation

High Valued Unified Response:

Solves the problem.

Solutions Model to Solving Problems

- Assumption
 - Total Solution Focus
- Strengths
 - Solves The Problem
- Weaknesses
 - Requires Coordinated Well Defined Scope
 - Must Be Done Holistically
 - Requires Shift Of Responsibility And Risk

**Changes the way
a project is done
from top down**

Challenges Are Easy To Manage

- Possible Collusion

- Resolved By Bidding For A Solutions Team

- Coordination

- Becomes Responsibility Of Solutions Team

- After Project Service

- Can be defined in project



Traditional VS. Solutions

	Traditional Method	Solutions Method
Problem(s) Identification	Responsibility of Utility	Utility or Solutions Team
Scope Identification	Responsibility of Utility	Utility with Solutions Team
Financing	Responsibility of Utility	Utility or Solutions Team
Engineering	Sub Contracted	Solutions Team
Bidding	Responsibility of Utility with Engineering Firm	May not occur
Construction	Sub Contracted	Solutions Team
Project Management	Can Be Sub Contracted	Solutions Team
Risk	Partially distributed by contract.	Solutions Team
After Project Support	Responsibility of Utility	Utility or Solutions Team
Benefit Monitoring	Responsibility of Utility if At All	Utility or Solutions Team

Alphabet Soup

- F = Finance
- D = Design
- B = Build
- O = Own
- O = Operate
- M = Maintain



Alphabet Soup

- **FDBOOM**
 - Finance, Design, Build, Own, Operate, Maintain
- **DBOOM**
 - Design, Build, Own, Operate, Maintain
- **DB**
 - Design, Build
- **FDB**
 - Finance, Design, Build
- **DBOM**
 - Design, Build, Own, Maintain
- **FDBOM**
 - Finance, Design, Build, Own, Maintain
- **DBOO**
 - Design, Build, Own, Operate
- **FDBOO**
 - Finance, Build, Own, Operate



Implementing the Alphabet Soup

- **Requires Integrated Team**
 - Focused On Problem
 - Member Competitiveness Minimized
 - Problems Resolved On Give And Take
 - Not Formal Change Orders
 - Can Be Cheaper And Faster Projects





*How does this
change the
way I design*

*Can private
operations
companies
help?*

*Can this
impact my
supplier role?*

*Does this change
my construction
process?*

**Solutions Model
Changes
Traditional Roles**



How The Roles Have Changed

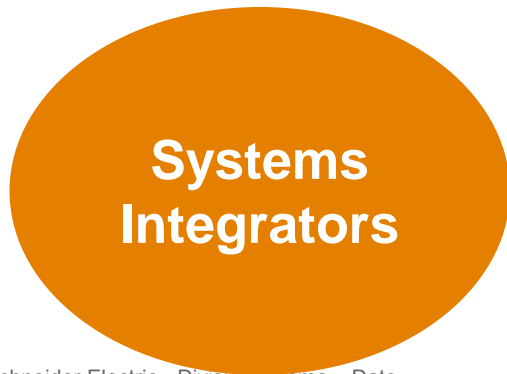


Consultants



Contractors

Traditional
Design Bid Build
Model



**Systems
Integrators**



Suppliers

Roles Overlap
Companies Expanded
to Adjust

How Have Companies Evolved?

- May Have Integrated New Capabilities
 - Consultants With Integration Capabilities
 - Merges Of Contractors And Consultants
 - Creation DB Firms
- Creates Partnerships
 - For Faster More Integrated Design



The OOM Companies

- Own Operate and Maintain Companies
 - Takes the responsibility from municipality
 - Often times decreases cost
 - Consolidated HR, and other tools
 - Leverage Buying Power
 - Takes all O &M risks



How this changes suppliers

- **Less Focus On Moving Products**
 - i.e. < Features & Benefit Selling
- **More Focus On Finding Right Solution**
 - Take Time To Learn Customer Challenges
- **Causes Expansion Of Services**





Scenario #1

Shelly Says “We are getting ready to build Cooper Road Pump Station”

Product Focus	
Supplier:	“Great. We have the perfect RTU for this, project. It has a range of I/O up to 256 points, 6 networks, several varieties of embedded radio, it programs in

Solution Focus	
Supplier:	“Great. Tell me more, how many pumps, VFD or constant speed, Indoor or outdoor”
Shelly:	“Its just a small station, three 20 HP on/off pumps in a NEMA 4X box. ”
Supplier:	“Hmm. Cooper Street. Isn't that on the back side of the hill?”
Shelly:	“Yeah, and the worst thing is that this is a temporary station for the Interstates construction site. We are going to have to put in three repeaters just to get around the hill”
Supplier:	Since this is temporary, have you thought about GSM.....”

Utilities Need To Ask Different Questions

PRODUCT FOCUSED QUESTIONS

- “What Networks Does your PLC Have?”
- “What Is The Sensors Operating Range?”
- “How Often Do I Change Membranes?”
- “Does it Come in NEMA 4X?”
- “How Often Do I Change Reagent?”
- “What is The Cost?”

SOLUTION FOCUSED QUESTIONS

- “Can You Help Me Stop Water Loss”
- “Can You Help Me Reduce OPEX By 15%”
- “How Do Containments Spread In Our Distribution System?”
- “My Service Guys Are Tired of False Deployments”
- “How Can I Meet My Nitrate Limit”



Scenario #2

City has an aging water plant that has been impacted by rising energy prices. But city exhausted its borrowing ability in pre-recession school and road projects

Traditional Focus

- | | |
|-------|---|
| City: | <ul style="list-style-type: none">• Seek State And Federal Assistance• Live With The Issue• Raise Rates/Taxes To Cover Retrofit |
|-------|---|

Solution Focus

- | | |
|-----------------|---|
| Solutions Team: | <ul style="list-style-type: none">• Conducts An Audit On Energy, Chemical, Gas, And Other Operations Expenses• Identifies Thousands Of Dollars Spent On Inefficiency Each Month.• Develops A Performance Contract That Pays For The Project Based On Energy Savings• Also Investigates Energy Pooling To Energy Cost |
|-----------------|---|

Performance Contracting

Goal: Use Energy Savings to Finance Project

- Detailed Audit Used to determine savings
- Scope of Desired Project Determined
- Portion or All of Savings used to Finance Project
- Saving Can Be Guaranteed to Assure Utility Does Not Lose Money



Energy Contracting

- Hire an Energy Management Company
- They will
 - Pool Facility Use to leverage discounts
 - Pool might consist of schools, hospitals, factories, etc.
 - Total Pool will drive savings due to size
 - Also look at optimizing rate structuring

Goal is not to
reduce energy.
But to spend less
for it.

Scenario #3

City has an aging distribution network. The city is suffering from repeated pipe bursts, and also pressure loss due to repair work. City wants a way to manage this proactively.

Traditional Focus

- | | |
|-------|--|
| City: | <ul style="list-style-type: none">• Looks at Traditional Pipe Leak Detectors.• Not designed for systemic approach• Still need a Hydraulic Engineer to determine when to shut down. |
|-------|--|

Solution Focus

- | | |
|-----------------|--|
| Solutions Team: | <ul style="list-style-type: none">• Real solution requires intensive data mapping• Software added above SCADA that looks at system behavior• Can be used mass balance on the fly. Thus, showing leaks just after they develop.• Can also predict how distribution system will behave during shutdown. |
|-----------------|--|

A southern California Utility was able to decrease its mass balance process from a few weeks to about an hour. Thus, decreasing the time leaks remain undetected.

Scenario #4

Town is experiencing fluctuating costs on operational expenditure. This is from fines, pipe problems, energy costs, and an aging facility. Town want a way to control operational expenditure.

Traditional Focus

- | | |
|-------|---|
| City: | <ul style="list-style-type: none">• City can rebuild, but is not willing to spend the money |
|-------|---|

Solution Focus

- | | |
|-----------------|--|
| Solutions Team: | <ul style="list-style-type: none">• Decision is made to allow a separate company own, operate, and maintain the system• Cost over a period is calculated. This is charged to the town.• OOM company combines operations with nearby towns to save money• OOM institutes a retrofit project based on savings |
|-----------------|--|

Conclusion

- **Traditional Design Bid Build Model Has Challenges**
 - Too much focus on project
- **Solution Models put focus on solving problems**
 - That should be the focus
- **To Adjust Companies have changed**
 - **Market Strategy**
 - Offer
 - Solutions

