BIOGRAPHICAL INFORMATION

Paul J. Yarka
Vice President and Company Officer
TAG The | Asset | Group

Specific Responsibilities

Joined parent company (MWH) in 2001. Responsible for leading the Solutions Delivery and Development organization for TAG, providing productized asset management strategy and technology implementation services to the utilities industry and municipalities globally. Leads the delivery and development of a comprehensive asset management-focused service and solution portfolio that addresses asset management strategy, capital and operating expenditure investment planning, lifecycle cost analysis, asset-related financial strategy and planning, asset management utility business process and IT optimization strategy and implementation, asset data and asset management IT systems planning and implementation, asset management organizational design and change management, and asset management business process-driven systems integration.

Past Experience

Vice President, Strategy Consulting, SchlumbergerSema Utilities Group
Vice President and Chief Strategy Officer, Convergent Group
Vice President and Principal Consultant, Convergent Group
Director of Product Management, GDS Corporation
Research Program Manager, Applied Technology Center, Marathon Oil
Program Manager, Shell Development Company, Shell Oil Company, and Pecten International

Educational Information

B.S. - Geomathematics, Syracuse University
M.S. - Geomathematics, Syracuse University

Professional Memberships

GITA
AWWA

THE ASSET MANAGEMENT BUSINESS AND TECHNOLOGY PROGRAM

Paul Yarka
TAG The | Asset | Group
380 Interlocken Crescent, Suite 700
Broomfield, CO 80021

ABSTRACT

Learning Objectives:

1.) Learn the components of and roadmap for a comprehensive asset management program
2.) Develop an awareness of tools and technologies that can be used to implement asset management business processes
3.) Understand how existing systems can be integrated to better support asset management objectives

Utility infrastructure assets in the US represent a multi-trillion dollar investment that has grown predominantly over the last 100 years or longer. During this period, independently owned and public utilities and municipalities have traditionally focused on addressing infrastructure needs through capital investment programs, typically not recognizing lifecycle costs associated with operating, maintaining, and renewing these assets. The advance of the global economy has driven some utilities and regulatory agencies to develop a better understanding of asset management practices, tools, and technologies employed by Australasian and United Kingdom utilities and municipalities along with major benefits that they have realized by ensuring that scarce financial resources are used in the most cost-effective manner.

Increasingly constrained financial resources, evolving regulatory policies and requirements, and Americas' aging infrastructure assets are causing utilities to look for help with their lifecycle asset management approaches. These organizations are seeking best practices for managing asset-related capital expenditures and operating expenditures through asset management programs. Desired asset management programs must consider service levels, infrastructure asset capabilities, business capabilities, and the enabling elements of asset capacity, condition, and performance, along with the critical elements of people, process, and technology, particularly systems integration. All of these are essential, holistic, asset management components that will be managed by utilities to do essentially more with less. Goals of this presentation are to provide attendees a more complete picture of important asset management program components and modern systems integration approaches and methods that can be employed to deliver successful asset management programs.

KEYWORDS

Asset Management Reference Model, Business Capabilities, Business Drivers, Infrastructure Asset Capabilities, Service Levels

INTRODUCTION

THE ASSET MANAGEMENT REFERENCE MODEL

Implementing an effective asset management program requires a simple, robust, and flexible asset management reference model that can be adapted and applied to utility needs. The asset management reference model (Fig. 1) provides a frame of reference against which utilities can develop their individual strategies. The model integrates factors that depict how a utility will implement effective asset management business discipline and is developed around good business practices that apply equally to public and private agencies.

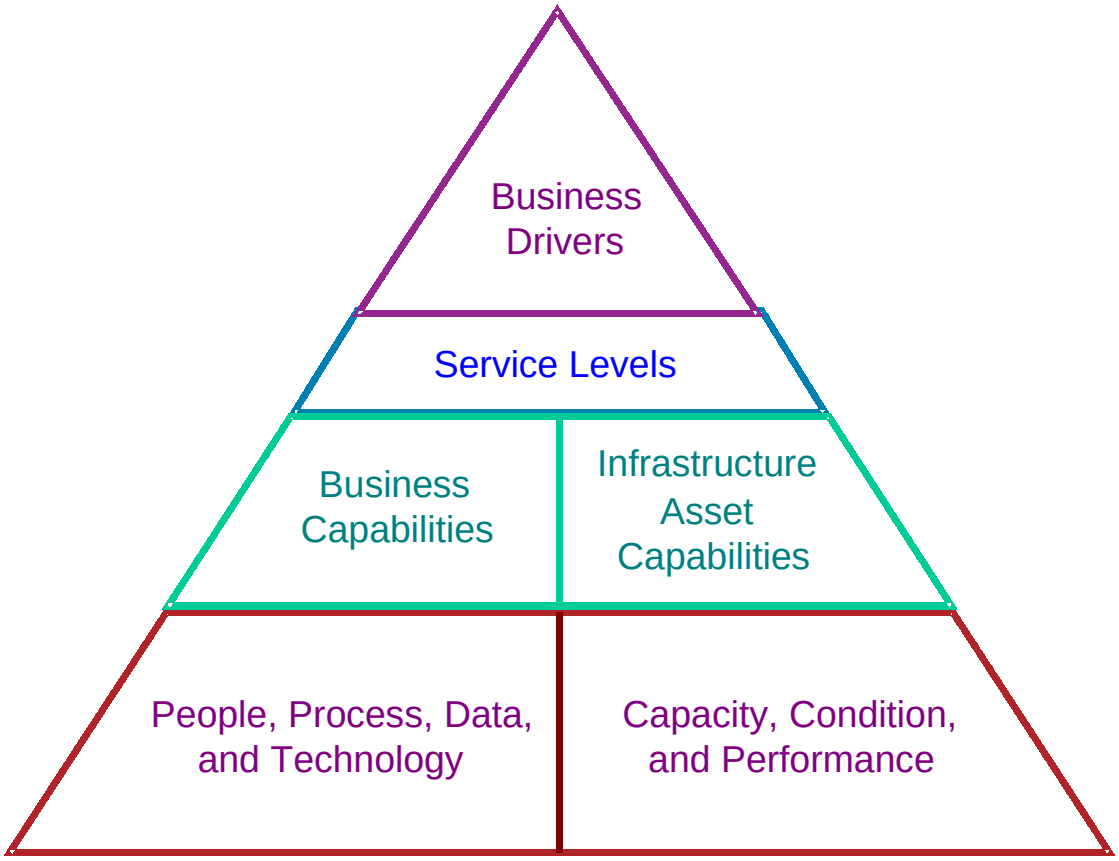

Figure 1. Asset Management Reference Model.

BUSINESS DRIVERS AND SERVICE LEVELS

Major influences on a utility are it's business drivers. These are mainly external in nature and are defined by stakeholders, who come from various sectors including the customer, environmental, regulatory, legislative, political, and financial sectors. A business driver can be thought of as an influence on a business that stimulates pressure to change behavior. An example business driver is regulatory compliance with FERC regulations, state-level regulations, or EPA environmental standards, for example, as all of these regulatory authorities own the responsibility to administer compliance and impose fines on a utility for non-compliance. In addition, they may apply influence on the utility's management if they do not make measurable steps to improve in problem areas.

Service levels comprise the set of business performance measures and associated target levels related to customers and public service against which business effectiveness and/or efficiency can be measured. Stakeholders also determine acceptable service levels. Employing a sports analogy, it is important for utility executives to have a clear understanding of who their major stakeholders are, the rules of the game (business drivers), and how to measure how well they (and the utility) are playing the game (service levels) through their ability to achieve service level objectives.

BUSINESS AND INFRASTRUCTURE ASSET CAPABILITIES

The reasons a utility does not achieve its desired service levels are typically because their infrastructure assets are deficient (infrastructure asset capability gaps), which in turn may be caused by ineffective asset work planning and funding processes (business capability gaps). An example of this is an energy utility that experiences an excessive number of power outages, which are caused by poorly maintained transformers, circuit breakers, substations, and other equipment. These conditions are likely due to either ineffective planning processes, inadequate funding, or both.

Business capability gaps are caused by issues related to people, process, technology, and data. It is important to define and assess these capabilities in specific terms so that capability gaps can be easily communicated to and addressed by utility management. Relative to the asset management reference model, business capability is the capacity, competency, or ability a business develops and uses for a specific purpose. Infrastructure asset capability is the capacity, availability, and reliability of an asset to achieve desired service levels. Infrastructure asset capability gaps are frequently caused by system capacity, configuration, and asset performance issues.

ASSET MANAGEMENT SOLUTION APPROACH

The solution approach of a utility that applies the asset management reference model also needs to be defined in clear terms that align business drivers and service levels with investments to be made to improve infrastructure asset capabilities and business capabilities (Fig. 2). Investments are made in terms of specific projects that relate to infrastructure asset solutions and business solutions. Funding levels and infrastructure asset and business solution investments needed to effectively manage and preserve enormous utility asset investments over the long term must be clearly documented and substantiated. The industry’s preferred approach clearly documents, aligns, and substantiates required business and infrastructure asset funding levels. In addition, this approach shows how these investments will be prioritized based on risk management principles that will achieve the target service levels at agreed funding and acceptable risk levels.

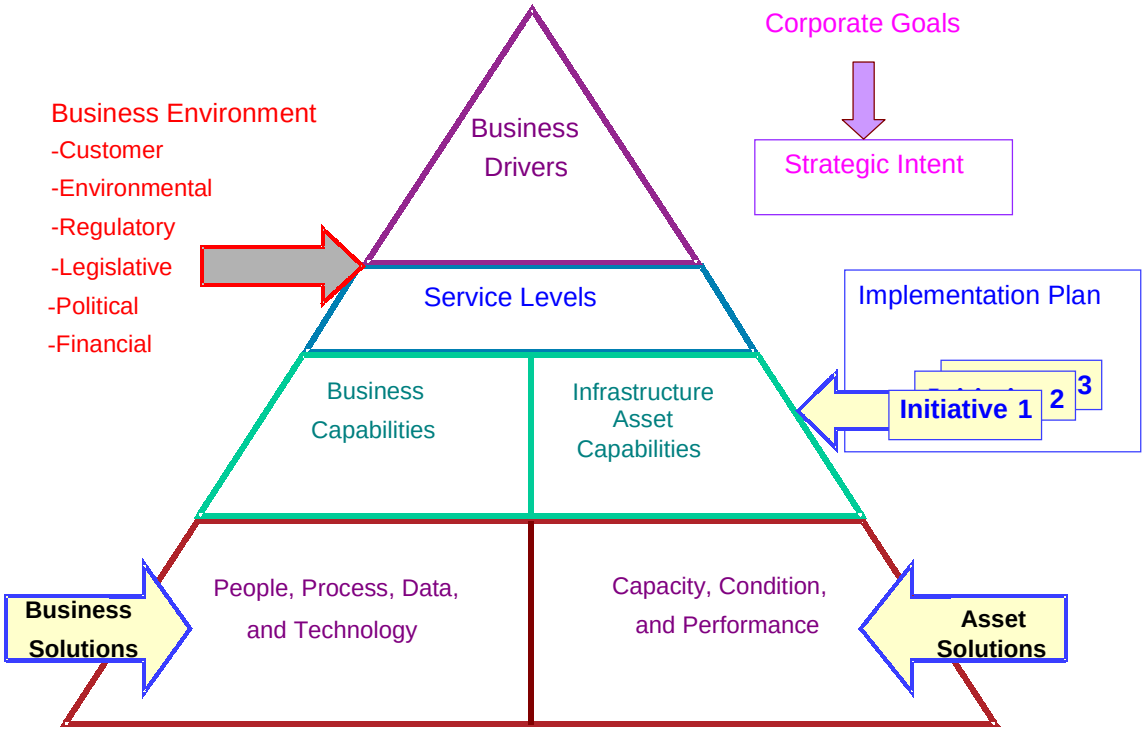

Figure 2. Aligning Strategic Asset Management Solutions With the Asset Management Reference Model.

DEVELOPING ASSET MANAGEMENT AWARENESS

The first step in implementing asset management business discipline is to develop an adequate level of organizational awareness and understanding regarding asset management. A program that appropriately targets employees by role or specific contribution to an organization's asset management thrust is typically most successful. A comprehensive agenda that differentially targets the following topics, according to organizational role, is required. The following topic list is a sample agenda that has been employed to develop successful asset management awareness programs:

- An Introduction to Business-Centric Asset Management
  - History of Asset Management, Infrastructure Report Cards, Lifecycle Activity and Cost Analysis, and Business Drivers That Encourage an Asset Management Focus
- Key Elements of Modern Asset Management
  - Service Levels and Performance Measures, Defining and Achieving Business Capability Goals, Infrastructure Asset Capability Goals, and Risk Assessment and Management
- Effective Business Processes for Successful Asset Management
  - Preventative and Corrective Maintenance Best Practices, How Organizations Are Reshaping Themselves for Effective Asset Management, Organizational Change to Facilitate Asset Management Business Discipline, End-to-End Business Process Definition, and Enabling Systems Integration That Supports End-to-End Process Execution
- IT Systems Required to Achieve Successful Asset Management

    - Key Roles of Asset Data, Practical Asset Data Stewardship, and the Role of the Integrated Asset Register and Enabling GIS Technology
    - The Critical Role of Systems Integration in Achieving Asset Management Business Discipline
- Potential Asset Management Outcomes
    - Benefits Estimation, Benefits Realization, Performance Measurement, and Avoiding Performance Pitfalls
- Evolving Regulatory Considerations
    - Infrastructure Asset Valuation and Depreciation, Capacity, Management, Operations, and Maintenance Compliance, GASB34 Compliance, and General Asset Management-Aligned Requlatory Compliance
- Overview of Successful Enterprise Asset Management Plans and Asset Management-Enabling IT Programs
- Asset Management Case Histories – Successes and Failures
    - How Systems Integration Can Support, Enable, and Help Deliver Asset Management Successes

BUSINESS ENVIRONMENT ANALYSIS

Utility executives must identify their major stakeholders and define business drivers that will influence their response. External stakeholders can come from many sectors, such as customer, regulatory, and political sectors. The next step is to define desired service levels in terms of clear measures and target objectives. Following this, the utility needs to assess its current performance compared with target performance levels. Reasons for major service level gaps must be identified and prioritized to increase the utility's probability of achieving them in the future.

ESTABLISHING THE STRATEGIC INTENT AND IMPLEMENTATION PLAN

Based on the previous analysis, the asset management strategic intent is defined in a few well-crafted statements that summarize the utility's vision, strategy, business drivers, service levels, risk profile, business capabilities, infrastructure asset capabilities, and investment strategy. This document provides the asset management direction and strategy for initiatives defined in the implementation plan. Once the reasons for performance gaps have been identified, recommended initiatives for focusing and budgeting future solution projects can be developed. Required funding levels can be used to validate and temper selected performance levels established by the stakeholders.

A risk management-based approach is recommended to prioritize investment projects across proposed business and infrastructure asset solutions. This ensures that investments are applied to business and asset solutions that deliver the 'biggest bang for the buck' and that agreed funding levels will determine the levels of risk exposure. Utility executives may then present substantiated analysis for required funding and associated risk levels to achieve stakeholders' desired service levels and motivate appropriate changes.

SOLUTION PROJECTS

Once target performance levels and ballpark funding levels have been validated and agreed, required projects can be designed and implemented to address capability gaps. At this point, investment programs are refined based on specific project details. For the utility, these projects take the form of business solutions or infrastructure asset capital, operating, renewal, and replacement solutions. Business solutions are projects that address specific people, process,

technology, and data issues. Asset management-centered, business process-enabling, systems integration is an example of a preeminent priority solution project that many need to address business capability gaps on the road toward asset management business discipline. Infrastructure asset solutions are projects that optimally address specific capacity, operations and maintenance, or refurbishment and replacement issues over the lifecycle of assets.

Business solutions focus on streamlining core end-to-end, asset management business processes (Fig. 3) that span functional and departmental boundaries. This involves changes in asset management business processes, organizational roles and design, enabling IT systems, systems integration, and data. The set of core end-to-end business processes that a utility leverages is presented in Figure 3. Core end-to-end business processes are supported by a vertical process view that focuses on optimizing common or shared processes. This business process model can be used to define key roles for the stakeholders involved in the stewardship of public or private infrastructure.

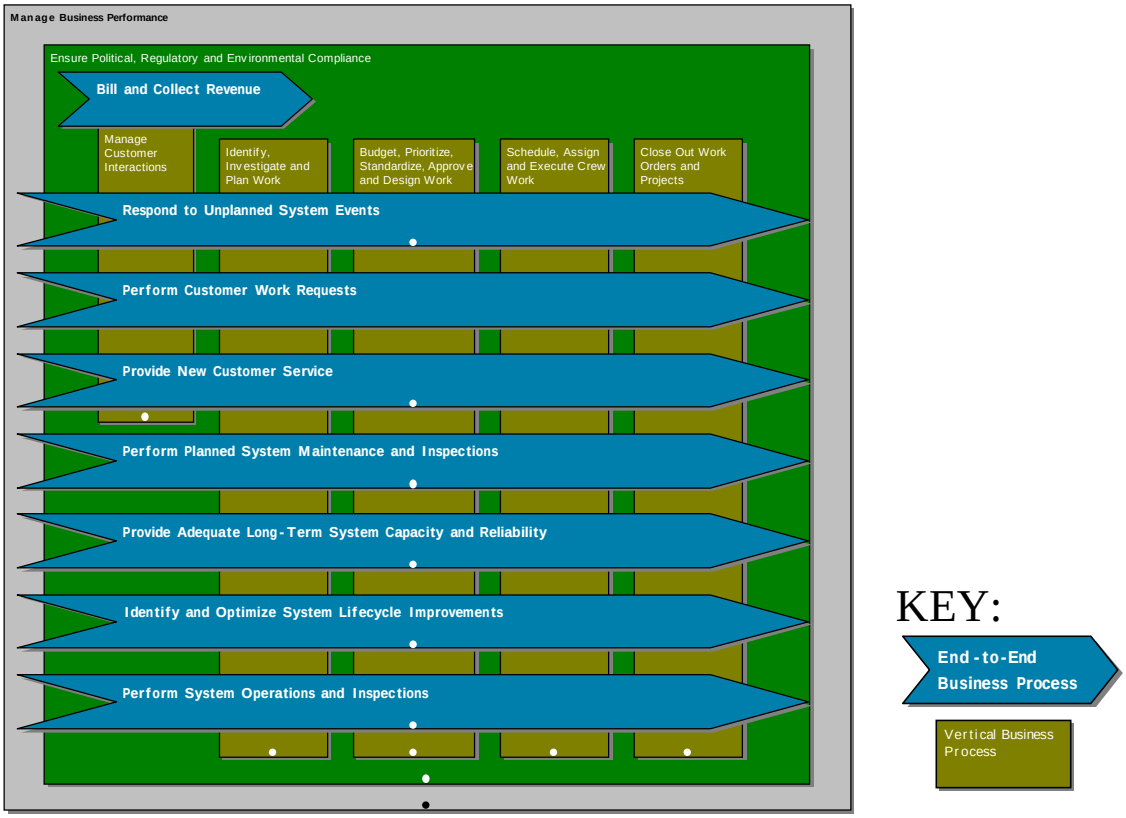

Figure 3. Utility End-to-End Business Process Model.

The “holy grail” of achieving advanced asset management business discipline requires optimization of all end-to-end business processes depicted in Figure 3. The “golden nugget” of asset management, however, resides in the end-to-end process titled “identify and optimize system lifecycle improvements.” This process is sometimes referred to as the asset lifecycle investment optimization (ALIO) process. Typically, enablement and automation of this process through business process, event-driven, systems integration is a critical business solution that closes one of the most difficult business capability gaps most utilities have in achieving asset management business discipline.

CONCLUSIONS

In summary, successful implementation of asset management business discipline requires the application of a holistic asset management reference model that addresses infrastructure asset capabilities and issues, along with business capabilities and issues. Successful asset management implementation cannot be accomplished without addressing both. Organizations that are successfully implementing asset management business discipline have developed role-appropriate levels of asset management understanding and awareness. Synchronously, a pragmatic asset management strategy and vision must be developed along with an actionable plan to achieve them. Achieving the strategic intent requires that utilities have an appreciation for their infrastructure asset and business capability gaps and an appropriate asset data framework in place that is supported by business process-driven, asset data stewardship.

Success with advanced asset management requires an optimized, asset process-centric organization, optimized asset-centric business processes, and enabling IT systems and systems integration that can stand scrutiny through performance benchmarking and ongoing improvement. Finally, the ability to annually address infrastructure asset capability gaps by identifying, prioritizing, cost estimating, scheduling, and budgeting what, when, and where infrastructure assets should be implemented, better/more frequently/less frequently maintained, refurbished, or replaced is a cornerstone to the implementation of successful asset management business discipline.