

The Art and Science of Technology Planning

A Rich Consulting Point of View
January, 2006

Presented by:



Energy. Knowledge. Results.

Introduction

Delivering Results with Technology Investments

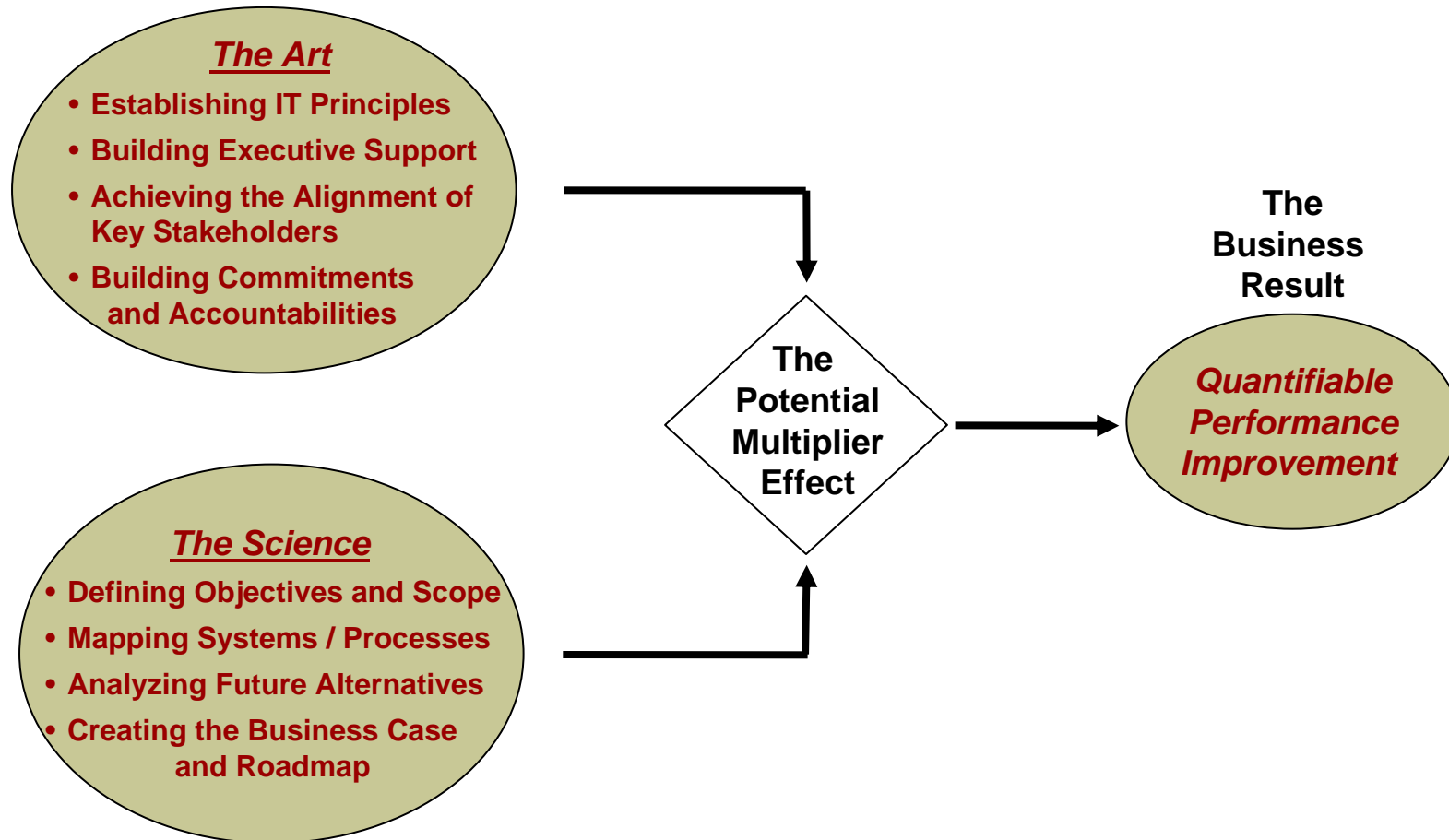
- The challenge in selecting and managing technology projects has always been the delivery of targeted results. Shortfalls generally occur due to a variety of reasons:
 - In the early stages of a project, problems can begin with poor definition of business requirements, inadequate business case models, lack of rigor in evaluating and selecting solutions, insufficient implementation planning, etc.
 - In the later stages of a project, failures are generally associated with poor execution of the implementation plan, or inadequate coordination with the client's user community.
 - In any stage, a project can fail, due to lack of executive support.

- Much has been written recently about 'Execution'. Consequently our focus has been on the early stages of project development, and we have found that there is an 'Art' and a 'Science' to doing this right. And if the art and science are properly applied, there is a multiplier effect on the business result.

- The following pages provide a brief overview of our approach to technology planning and include a few excerpts from some of our work in this area. We would welcome feedback from any of our readers who have thoughts or experiences to share in managing successful technology planning projects.

Introduction (cont.)

The 'Art' and 'Science' of technology planning and decision making... getting both right creates a multiplier effect that maximizes the business result.



The Art and Science of Technology Planning

The 'Art' of the process relates to:

- Establishing IT principles that provide *useful* guidance in technology decision making
- Building long-term executive support (including Board of Directors, when necessary)
- Achieving alignment of objectives and strategies among all key stakeholders
- Reaching shared commitments and individual accountabilities for required actions

The 'Science' of the process relates to:

- Defining project objectives and scope
- Mapping technologies to core business processes
- Analyzing alternatives in terms of the specific business benefits produced
- Building a business case with clearly defined assumptions, financial impacts, risks and mitigation strategies. *Note: The business case becomes the results management tool.*
- Developing a multi-year roadmap which integrates all relevant process and technology initiatives, and optimizes the overall economics

The Outcome:

- Executive and stakeholder commitment
- Best achievable performance improvement, with clear accountabilities for results

Our Suggested Approach

Our suggested approach combines both the 'Art' and the 'Science'



Objectives

- Define core business processes and key objectives
- Establish IT Principles

- Align on required performance improvements
- Identify potential solutions
- Create business cases

- Develop and validate integrated solution models
- Select optimal approach (best overall economics)

Supporting Tasks

- Validate core processes and key metrics
- Map applications to processes and identify current and planned initiatives
- Review architecture and integration capabilities
- Establish IT Principles

- Define and align on required process improvements
- Establish executive support
- Identify / analyze potential solutions
- Develop / evaluate the business cases for high priority initiatives
- Validate results with key stakeholders

- Group high priority initiatives for each core process
- Screen and adjust for best overall economics
- Finalize business cases for major initiatives
- Validate plan with key executives and stakeholders; align on targeted results

Deliverables

- Current state analysis of:
 - core processes
 - supporting apps
 - current architecture
 - current and planned initiatives
- IT principles document

- Alignment on high priority process improvements
- Identification of solutions, supported by detailed business cases
- Executive commitment
- Timeline for meeting future state requirements

- High priority initiatives grouped for each core process
- Detailed business case and accountabilities for each major initiative
- Consolidated technology roadmap, showing key points of integration and milestone dates

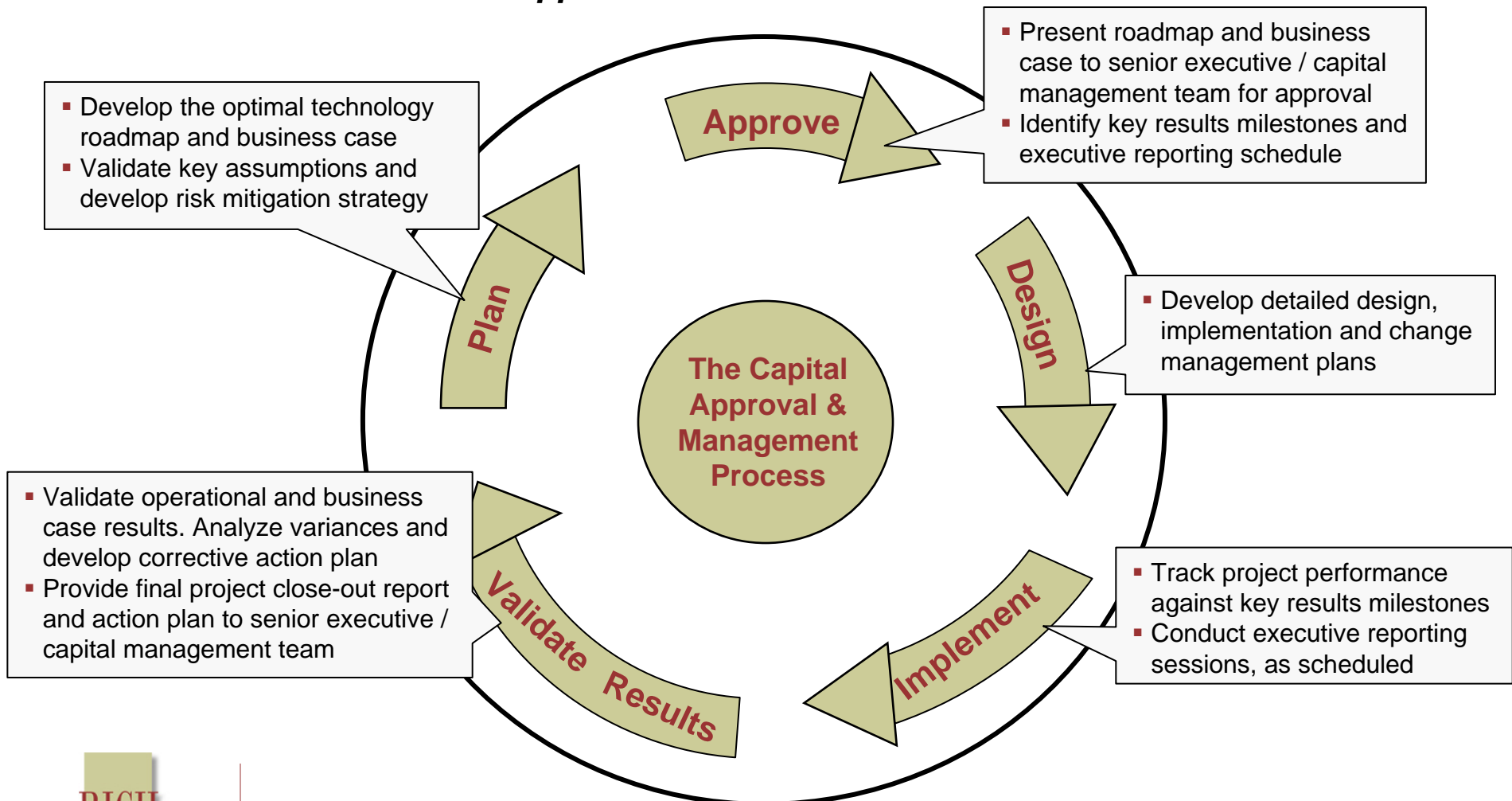
Establishing Useful IT Principles

A key element is the establishment of IT principles. Useful principles provide a clear basis for technology decision making. Some examples are shown below:

- Leverage and extend existing investments where feasible (applications, data, infrastructure)
- Evaluate potential upgrades or replacements on the basis of total life-cycle cost, including:
 - Initial capital investments for hardware and software
 - Ongoing licensing, staff support and maintenance expenses
- Define application maturity and implementation risks. Develop appropriate acquisition, implementation and maintenance strategy
- Fully integrate solutions to maximize sharing of data
 - Single point of data entry and system of record
 - Enter data close to the source

Winning and Maintaining Executive Support

A closed-loop capital approval and project reporting process drives accountability ... and maintains executive support:



Achieving Stakeholder Alignment

It is essential to develop and maintain alignment on objectives among key parties – especially Operations and IT stakeholders

A Common Situation

- Operational Imperatives – Better/Faster/Cheaper:
 - Customer satisfaction
 - Process improvements
 - Metrics and rewards
 - Organizational structure, roles, accountabilities
- Applications
 - Software
 - Data
 - Integration
- Infrastructure
 - Hardware
 - Middleware
 - Connectivity integration

Aligning on Improvements

- Coordinated View of Business Requirements and Technology Architecture
 - Defined performance improvement objectives
 - Agreed-upon technology roadmap, business case, and management system

Achieving alignment means building shared commitments for overall project results, with individual accountabilities for specific actions and outcomes

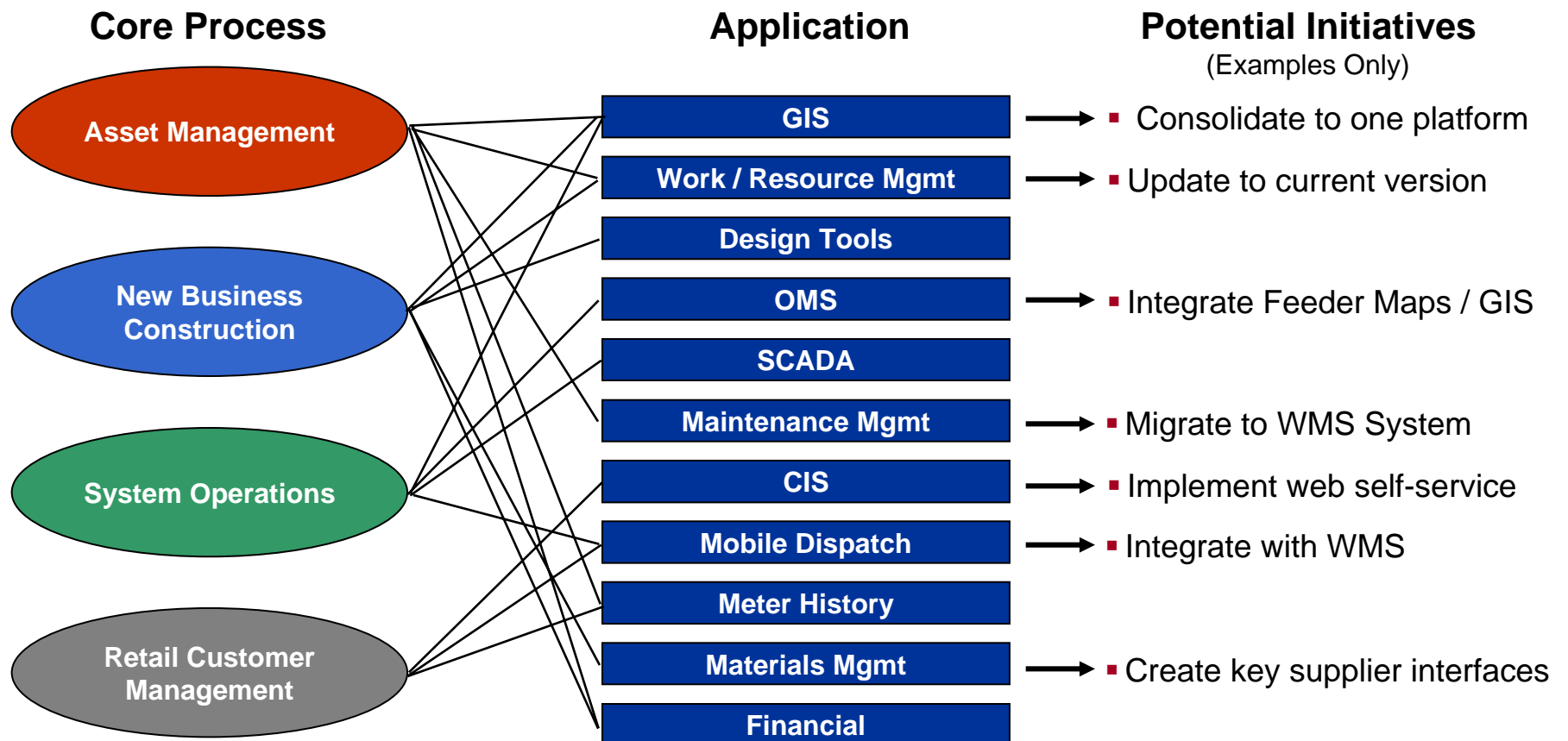
Mapping Technologies to Processes

The major technology platforms should be associated with specific business processes. Typical core processes for a distribution utility include:

- Asset Management
 - Sub-processes: System Planning, Relocations, Compliance and Maintenance
 - Applications: GIS, Work Management, OMS, Facilities Data Repository
- New Business Construction
 - Sub-processes: System Expansion, Work Scheduling, Feeder and Main Construction, New Service Connection
 - Applications: GIS, Work Management, Design Tools
- Operations
 - Sub-processes: System Control and Switching, Maintenance, Service Restoration
 - Applications: GIS, OMS, Mobile Dispatch, Maintenance Management
- Revenue Cycle Services
 - Sub-processes: Registration and Account Management, Billing and Collections
 - Applications: CIS / Meter History, CRM, Web-Based Account Management Tools

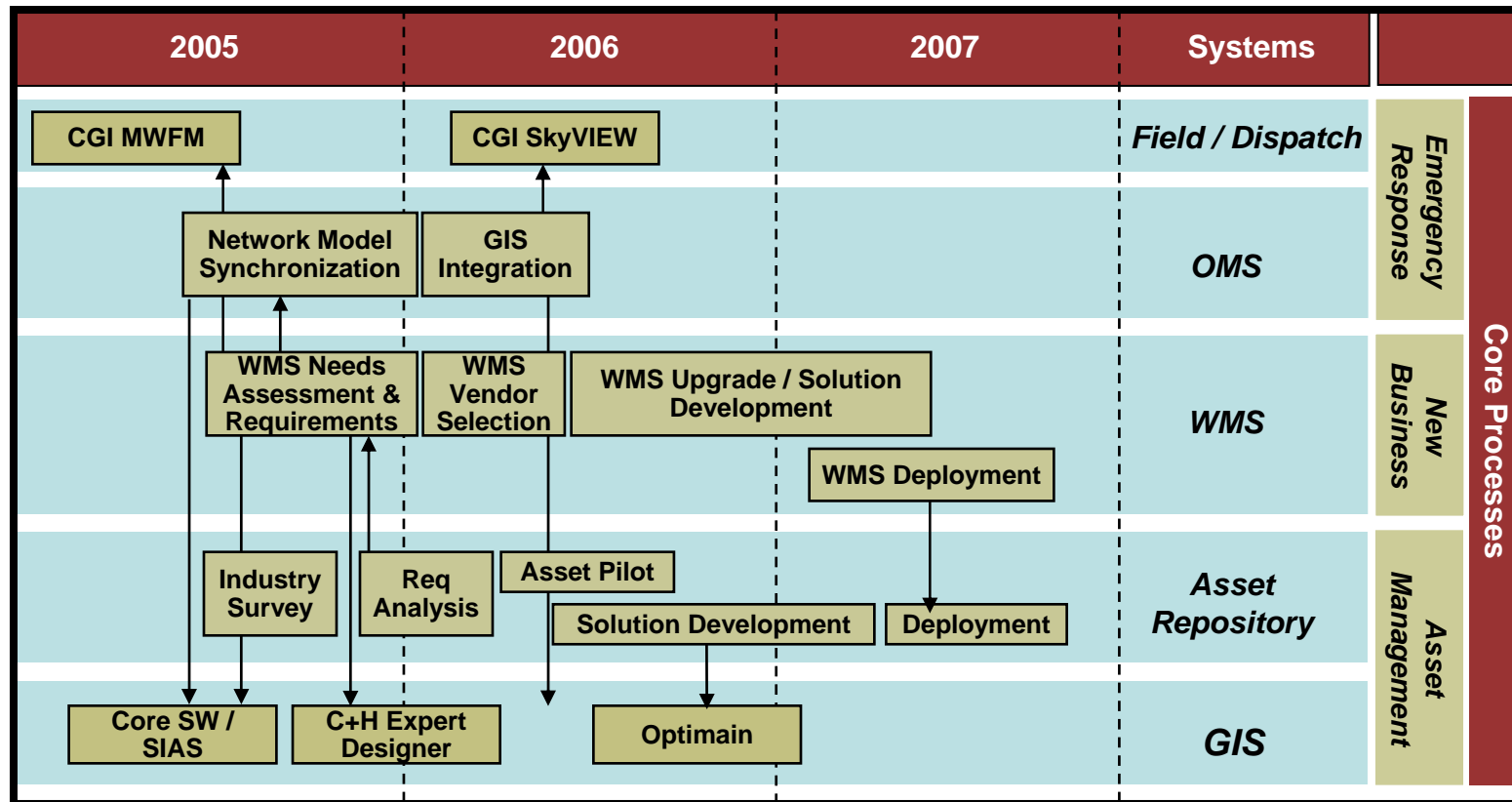
Mapping Applications and Initiatives to Processes

Map the major applications and potential initiatives to the core processes. A simplified example is shown below:



Building the Roadmap

Initiatives related to the various processes and applications are identified, validated and sequenced over the relevant time-frame. A high-level example is shown below.



Typical Business Case Outputs

Typical business case outputs include annual benefits and costs with clearly defined assumptions...

Illustrative

Microsoft Excel - ARM Business Case Tool_Gas_Only_BETA0.9.xls

Summary Input Sheet -- Adjusted Benefits and Costs

	Savings-Baselines	Adjusted Savings
OGM		
FTE's Field	\$ 3,396,500	\$ 3,396,500
Supervision (Foreman, Supervisors, Managers)	\$ 1,383,500	\$ 1,383,500
Administrative	\$ 800,000	\$ 800,000
Coordination / Analysis (Analysis, Dispatch)	\$ -	\$ -
Indirect (Back-office -- F&A, HR, IT)	\$ -	\$ -
Non-FTE Supply Chain (materials, inventory)	\$ 353,400	\$ 353,400
Supply Chain -- Contractor	\$ -	\$ -
Fleet	\$ 518,000	\$ 518,000
Facilities	\$ -	\$ -
Systems	\$ 560,000	\$ 560,000
Total	\$ 7,607,400	\$ 7,607,400
<i>Savings as a Percent of Budget</i>	<i>0.92</i>	<i>0.92</i>

	Savings-Baselines	Adjusted Savings
Capital		
FTE's Field (includes Sales, Engineering, and Field)	\$ 916,500	\$ 916,500
Supervision (Managers and Directors)	\$ 125,000	\$ 125,000
Administrative	\$ 320,000	\$ 320,000
Coordination / Analysis (Analysis, Dispatch)	\$ 108,000	\$ 108,000
Indirect (Back-office -- F&A, HR, IT)	\$ -	\$ -
Non-FTE Supply Chain (materials, inventory, handling)	\$ 350,000	\$ 350,000
Supply Chain Working Capital (one-time benefit or charge)	\$ (160,000)	\$ (160,000)
Supply Chain -- Contractor	\$ 3,300,000	\$ 3,300,000
Fleet	\$ -	\$ -
Facilities	\$ -	\$ -
Systems	\$ -	\$ -
Total	\$ 5,033,500	\$ 5,033,500
<i>Savings as a Percent of Budget</i>	<i>0.92</i>	<i>0.92</i>

Implementation Costs -- Initial and On-going	Year 1	Year 2	Year 3
OGM -- Implementation	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000
OGM -- Implementation (Adjusted)	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000
Capital -- Implementation	\$ 5,733,333	\$ 5,733,333	\$ 5,733,333
Capital -- Implementation (Adjusted)	\$ 5,733,333	\$ 5,733,333	\$ 5,733,333

Microsoft Excel - ARM Business Case Tool_Gas_Only_BETA0.9.xls

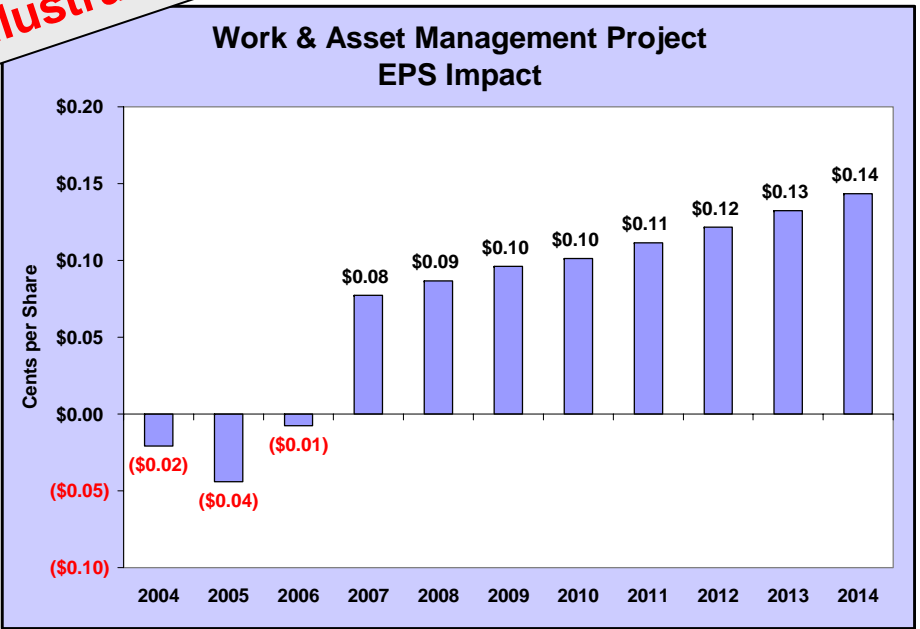
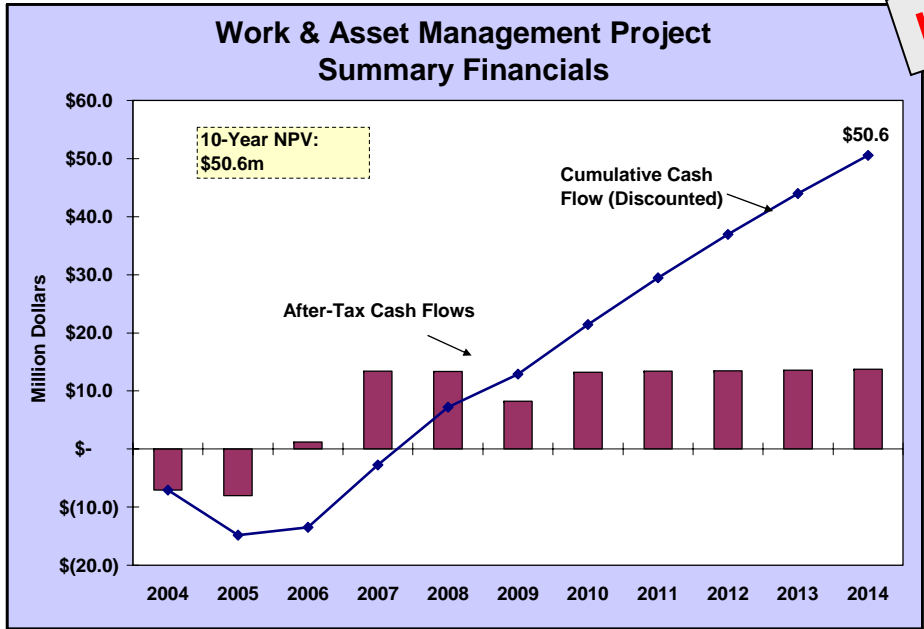
Financial Input Sheet

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Capital Payments:											
Capital Costs	5.7	5.7	5.7	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0
Implementation	5.7	5.7	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
On-going	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upgrade	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0
Capital Savings											
FTEs -- Field		-1.2	-1.3	-1.3	-1.4	-1.4	-1.4	-1.4	-1.5	-1.5	-1.6
FTEs -- Supervision		-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
FTEs -- Administrative		-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6
FTEs -- Coordination		-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
FTEs -- Indirect		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Supply Chain -- Materials and Inventory		-1.0	-1.1	-1.1	-1.2	-1.2	-1.2	-1.2	-1.3	-1.3	-1.3
Supply Chain -- Contractor		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Fleet		-0.6	-0.7	-0.8	-0.8	-0.9	-0.9	-0.9	-1.0	-1.0	-1.0
Facilities		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Systems		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital	5.7	5.7	-0.4	-2.0	-2.2	-2.3	-2.6	-2.6	-2.8	-2.8	-2.9
Revenues:											
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Typical Business Case Outputs (cont.)

... and clearly defined results, year-by-year.

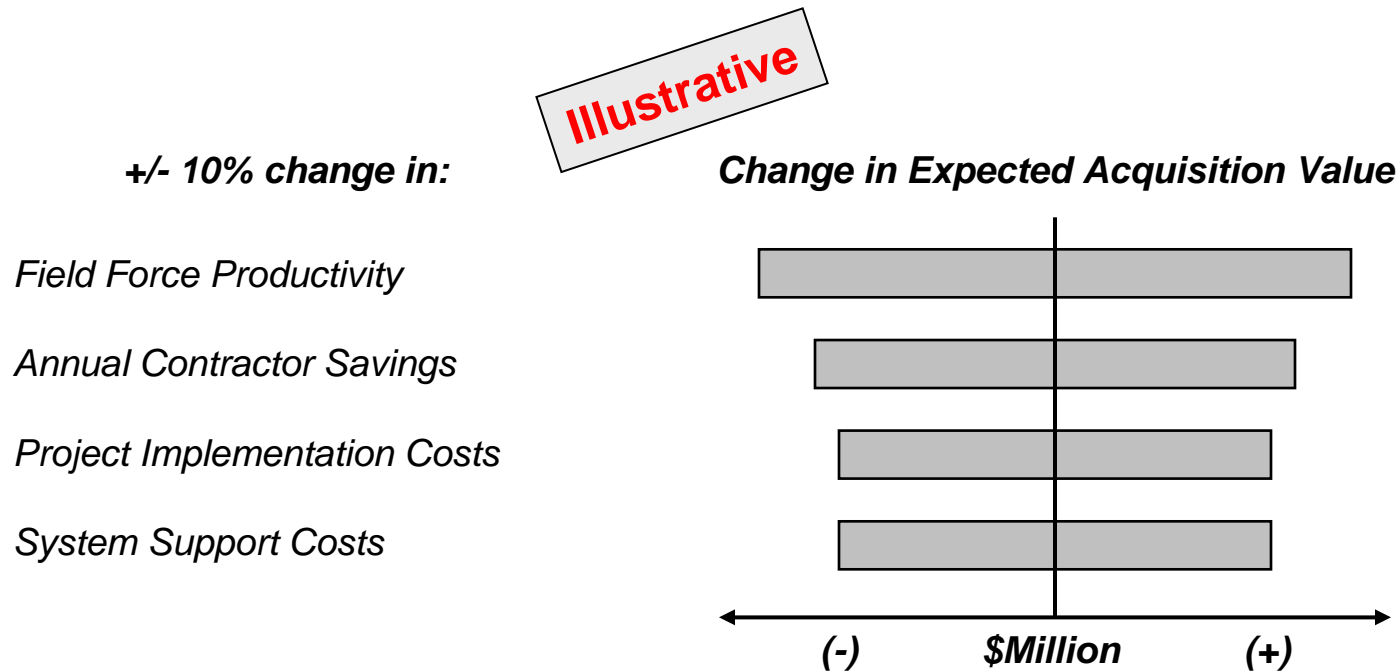
Illustrative



- In this example ...**
- **Expected NPV is \$50 million over 10 years**
 - **Break-even point occurs in Year 4**
 - **EPS is negatively impacted first three years and positive thereafter**

Typical Business Case Outputs (cont.)

A sensitivity analysis, similar to the one shown below, can also be employed to isolate the impact of key variables, identify critical risks, and drive the development of appropriate mitigation strategies.



Conclusion

Address Both the Art and the Science of Technology Planning to Capture the Multiplier Effect

- Align the objectives and targeted outcomes of the technology investment:
 - Confirm business strategies and objectives for affected core processes
 - Establish clear IT Principles that are to be applied
 - Establish and maintain executive support and key stakeholder alignment
- Do all the homework:
 - Clearly define the business requirements, in terms of future state performance levels
 - Map supporting technologies and initiatives to the processes targeted for improvement
 - Determine the architectural and integration issues that must be addressed
- Adhere to the discipline of effective planning:
 - Identify all the alternatives, and establish clear selection and evaluation criteria
 - Build the business cases on realistic assumptions and account for all project risks
 - Create a detailed implementation plan, showing all dependencies and milestones
- Lastly, validate with key executive and stakeholder groups every step of the way:
 - Build-in specific executive and stakeholder reviews at each project check-point. *Alignment is an asset that must be maintained!*



10 Forbes Road
Braintree, MA 02184
tel: 781.535.6460
fax: 781.535.6464
www.richconsulting.com