Across Time
Around the World
Understanding Technology

Telecommunications

Compliance

Operating Systems

Data Center

Mainframe

Strategy

Development

Mobility

Information Technology

Technology Strategy & "Vision"

April 2010

Topics

- The Value of Technology Strategy
- Elements of Technology Strategy
- Establishing Architecture Principles
- Developing Delivery Initiatives ("Roadmaps")
- Creating a Technology Vision
  - "Scenario Planning"
    - Monitoring Industry Perspectives
    - Defining Possible Long Term Actions
- Status of Technology Strategy

The Value of Technology Strategy

- Most people respect the importance of “business” planning, but sometimes struggle to break this process down into manageable pieces:
  - (1) Establishing “financial” objectives
  - (2) Defining strategic direction of your markets, products, & services
  - Combining the results of these two items effectively results in the “what” part of your business strategy.
  - The “how” part of your business strategy defines the actions that you’ll be taking.
- In businesses that are dependent on Information Technology we often focus on the “daily” deliverables to the business strategy and forget the importance of strategic planning for the technology components themselves.
- Ensuring that technology deployments have direction and continuity can result in greater opportunity to meet your business strategies, reduce time to market for products & services, and lower the cost of delivery.

This presentation does not pretend to provide any singular solution for developing Technology Strategy, but offers key topics to consider in your environment for beginning that process.

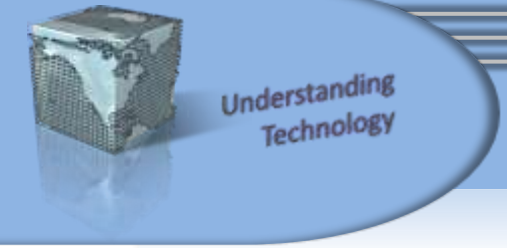
Elements of Technology Strategy

- Developing “Technology Strategy” is really an emerging discipline as business begins to understand its’ impact on business plans.
- Different approaches are emerging in accomplishing strategic planning for technology, but three common elements are becoming clear:
  1. Establishing the “Architecture Principles” that will govern your use of technology and provide guidance for your other technology decisions.
  2. Developing “Roadmaps” for active projects and short-term deliverables.
     This is what most places actually do accomplish pretty well under the banner of “Project Management”
  3. Creating a “Technology Vision” for your environment that outlines expectations for long-term drivers to change and possible responses in tools, techniques, & deliverables that will compliment your business strategy.

Establish Architecture Principles

- One of the great failures of technical organizations is to not “sit down” and define what the fundamental characteristics of their technology deployments will consist of. You should consider including:
  - Absolutes
    - Vendor dependencies, SLAs, Regulatory, Physical limitations, Code limitations
  - Desirables
    - Performance Characteristics, Resource Optimization, Development Speed
  - Operational Rules & Objectives
    - Internal Governance, Operational Consistency, Customer Satisfaction & Success
- Your Architecture Principles provide the foundation of your technology governance.
- New project requirements and designs should always be “tested” against your Architecture principles.

Your Architecture Principles should be reviewed and revised over time given changes in business and technology, but such change should be infrequent and minimal.



"Example" Architecture Principles

Company "XYZ" technology deployments will comply with the following:

- Shared Resources / Reusablility (elements with physical properties)
  - Maximize Availability / Minimize Points of Failure
- Modularity / Flexibility (methods used to combine "resources")
  - Code, Resource Pools, processes,
- Network deployment must be carrier independent. Primary & secondary routing must use diverse carriers.
- Provide Service Availability for Customers (internal & external) targeted at 24 hour/day by 7 days/week expectations
- Multiple Data Centers with Geographical Diversity
- Industry Standards & OPEN Systems foundations
  - IPv6 internal networks, SIP, SOA library "x", etc.
- Support Centralized Operations/Monitoring

Developing Delivery Initiatives ("Roadmaps")

- This topic may go by a variety of names in many businesses but ultimately refers to "technology activities having specific deliverables in a "near-term" timeframe". The phrase "near-term" may have different meanings as well, but we will suggest that focus to be on things in a 12-24 month horizon for this discussion.
- Strategies for managing activities under the banner of "Delivery Initiatives" will fall in one of two Project Management areas. There certainly can be overlap and even some confusion between the two, but it is important to understand and try to classify your work if you are to understand the real costs and benefits of your technology.
  - Technology Focused: You might also choose the term "infrastructure focused" as this refers to activities that enable your business and keep technology current, but not necessarily related to any singular business deliverable or product.
    - Data Center functionality, Telecom/Networking, Testing environments, Administrative software, R&D supporting 'near-term' projects
  - Business Solutions Focused: Technical work that is required to deliver specific service functionality that is part of a business plan or specific customer needs. This can also include changes to your infrastructure as well as application development, if those changes are required to meet the business need and were not previously in use.

Creating a Technology Vision..!

- A “Technology Vision” is an effort to articulate what you expect the impact of technology to be in your business in a longer horizon than we have previously discussed.
  - You must define “near-term” and “long-term” based on <u>your</u> specific details, but a suggestion would be to look at 2 to 5 year future windows for change.
- Creating a Technology “Vision” should be an integral tool in long-range planning for your business (and your clients) of equal importance with other types of Market, Product, Client-need, & Financial analyses.
- In the wild pace of technology change we are faced the old metaphor…
  - What came first……

The Chicken or The Egg???

The Market or The Technology???

- So what can you do to try to answer this challenge…?

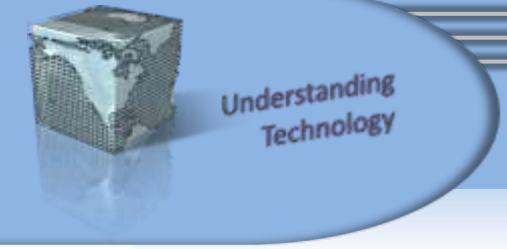
"Scenario Planning"

- Scenario Planning (sometimes called scenario thinking or scenario analysis) is a strategic planning method that some organizations use to make flexible long-term plans. It is in large part an adaptation and generalization of classic methods used by military intelligence.
- Many businesses uses various forms of Scenario Planning to combine known facts about the future with plausible alternative social, technical, economic, and other trends to attempt to predict key driving forces to their companies and their strategic business planning.
- In considering how to "Create" your own technology vision; defining your own form of Scenario Planning may be useful. It can take many forms of brainstorming, speculation, and imagination but it should result in two primary activities.
  1. Examine "Industry Perspectives" for a wide range of technology scenarios that may affect your business.
  2. Articulate opportunities and priorities for research, preparation, and future specific work that would contribute to future activities. In other words, create a "Vision" of what the future will look like and is likely to drive your sorter-term "Delivery Initiatives".

Monitoring Industry "Perspectives"

- The first step in creating the long term vision is to determine what areas of change in technology are, that will likely impact your business and services. What are the "perspectives" on your future?
  - Have fun! This really is brainstorming what you see as possibilities. Do not over-analyze at this level. Just list the things that you believe may happen.
  - It can be helpful to "classify" these into categories.
  - Many "perspectives" may cross categories, but that's OK

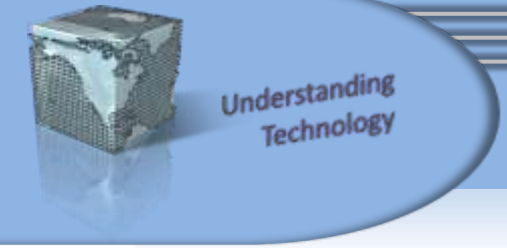
- Remember; these are the seeds of change for your "Architecture Principles" and your "Delivery Initiatives". While speculative, it can have a huge impact on your direction decisions.
- Example categories:
  - **"Core" IT Capabilities**
  - **Telecommunications**
  - **Industry-specific**
  - **Economy**
  - **Consumer**
  - **Energy**
  - **Transportation**
  - **Regulatory**



Example: Industry Perspectives

- "Core" IT Capabilities:
  - We are not seeing the rapid turnaround of processing technology in computing. Basic processor technology has changed little in three years. We now see "multi-core" solutions based on older technology. Will that continue?
  - Is the storage capability of "data warehouses" exceeding our ability to manage the volume of data effectively?
  - The concept of "Server Virtualization" is becoming more and more practical with regard to common hardware servicing different computing services. What will the impact of this be in our environment?
  - What's more important: "Standards" or "Open Source"?
- Telecommunications:
  - Will the residential trend for LESS landlines and more WIRELESS impact business solutions more?
  - Will IPv6 finally be significantly deployed? More "Mobile" devices with IP addresses?
  - Is **Mobile Technology** really the paradigm changer on a scale of the invention of the PC or Internet expansion?
  - What are realistic and practical solutions for "Anytime/Anywhere" communications? "Unified" Communications?
- Industry Specific Topics:
  - Security will continue to be a critical requirement no matter what mechanism(s) for communication is being used.
  - How will "Standards" evolution affect the requirements that we have for your business?
- Economy:
  - In our challenging marketplace, what is the impact to corporate decisions on "Build vs. Buy"?
  - Will technology deployments be slowed in the future due to continuing CapEx challenges?
  - Consumer pricing challenges are impacting margins and technology expansion schedules. What (and how long) impact do we expect on delivery of services?
- Consumer:
  - Is "your" mobile device going to REPLACE your desktop/laptop computer?
  - What opportunities will there be for "Personalizing" voice and mobile interfaces?
- Energy:
  - Is the push for "GREEN" going to have significant impact on the solutions that we develop?
  - Energy (power & cooling) issues are major problems with data center expansion opportunities today. This is driving a trend for more, smaller, data centers geographically dispersed. Will this trend continue?.....how long?
- Transportation & Regulatory:
  - List the same kind of possibilities as above……

This only represents one set of possibilities and is presented as example. It's important that you gain input of a variety of views and stakeholders in your environment



Possible Technology "Vision" Actions

- Now that you've had some fun asking "What if…?"; you should define action items that may become part of your planning to deal with those possible conditions. This becomes your "Vision" of the technology future.
- These actions may range from commitments to simply review a topic later, to specific research on a topic, to long-term projects that you begin to take action on and begin to overlap with your "Delivery Initiatives".
- The primary goal is to ensure that you minimize the likelihood of getting too far "behind the curve" on any particular topic to be able to respond to your business plans and demands.

From our example "perspectives", let's speculate on what actions we might take on the following:

- **"Core" IT Capabilities**
- **Telecommunications**
- **Industry-specific**
- **Economy**
- **Consumer**
- **Energy**
- **Transportation**
- **Regulatory**

Example: "Vision Actions"

- "Core" IT Capabilities:
  - Continue approach to Server "virtualization" for all operating subsystems
  - Complete reconciliation and standardization for what your company defines as "business data elements"
  - Minimize differences between physical "hosted" and "managed" platform solutions. Operate a consolidated resource pool for customers of both service models.
- Telecommunications:
  - Expand use of "universal" ports handling both inbound and outbound traffic
  - Replace most "private" network connectivity with MPLS (Internal or Client)
  - Early implementation of IMS capabilities allowing for seamless multimedia interfaces
- Industry Specific Topics:
  - Establish Security Strategy through effective prototype development
  - Restructure application code based on available industry SOA libraries.
- Economy:
  - Provide more options for clients solution delivery
  - Consolidate "hosted" and "managed" platform solutions to improve capacity/reliability
- Consumer:
  - Expand interfaces to include addressability to and functionality a wide range of mobile devices (phone, iPad, Netbook, other internet appliance)
  - Automated identification and personalization of interactions based on device function and security (i.e., Biometrics driven applications)
- Energy:
  - Data Center Power and Cooling issues/solutions are a major industry challenge
  - Monitor this sector closely for "interactive" solution opportunities
- Transportation & Regulatory:
  - List the same kind of possibilities based on your brainstormed "perspectives"

Remember; your primary objective is, simply, to not "miss" the inclusion of key elements in your long-term technology planning.

Status of "Technology Strategy"

- As we indicated in the beginning of this presentation; despite its' importance, developing Technology Strategy is a relatively immature discipline.
  - Companies and technology leaders are searching for ways to improve in that area.
  - Strategy is often accomplished at the discretion of a handful of technical management folks. This can have the best of intentions, but needs input from and tested against the understanding for the full business' stakeholders.
- Having stated "Principles" for your technical architecture should be considered critical for any environment.
- Managing "Delivery Initiatives" tends to fall under the heading of "routine" Project Management for most companies.
- Creating an articulated "Technology Vision" inclusive of long-term needs can be a valuable part of an overall Technology Strategy.

- Whatever your current position on your Technology Strategy; give some thought to including these three factor areas in your daily and long term IT administration. It can pay off in dramatic benefits to your business growth and stability.

1…2…3…. Go!

- Consider making little “pocket” reminder cards out of the image below and ensure your technical management keeps balance in all their work for today and into the future.

- The author is available to provide consultation, presentation, or facilitation of “Vision” sessions for you and your business.