

One World Information System

Enterprise Management and
Improvement (EMI) Technical
Information

By Roy Roebuck
(703) 598-2351
roy@one-world-is.com

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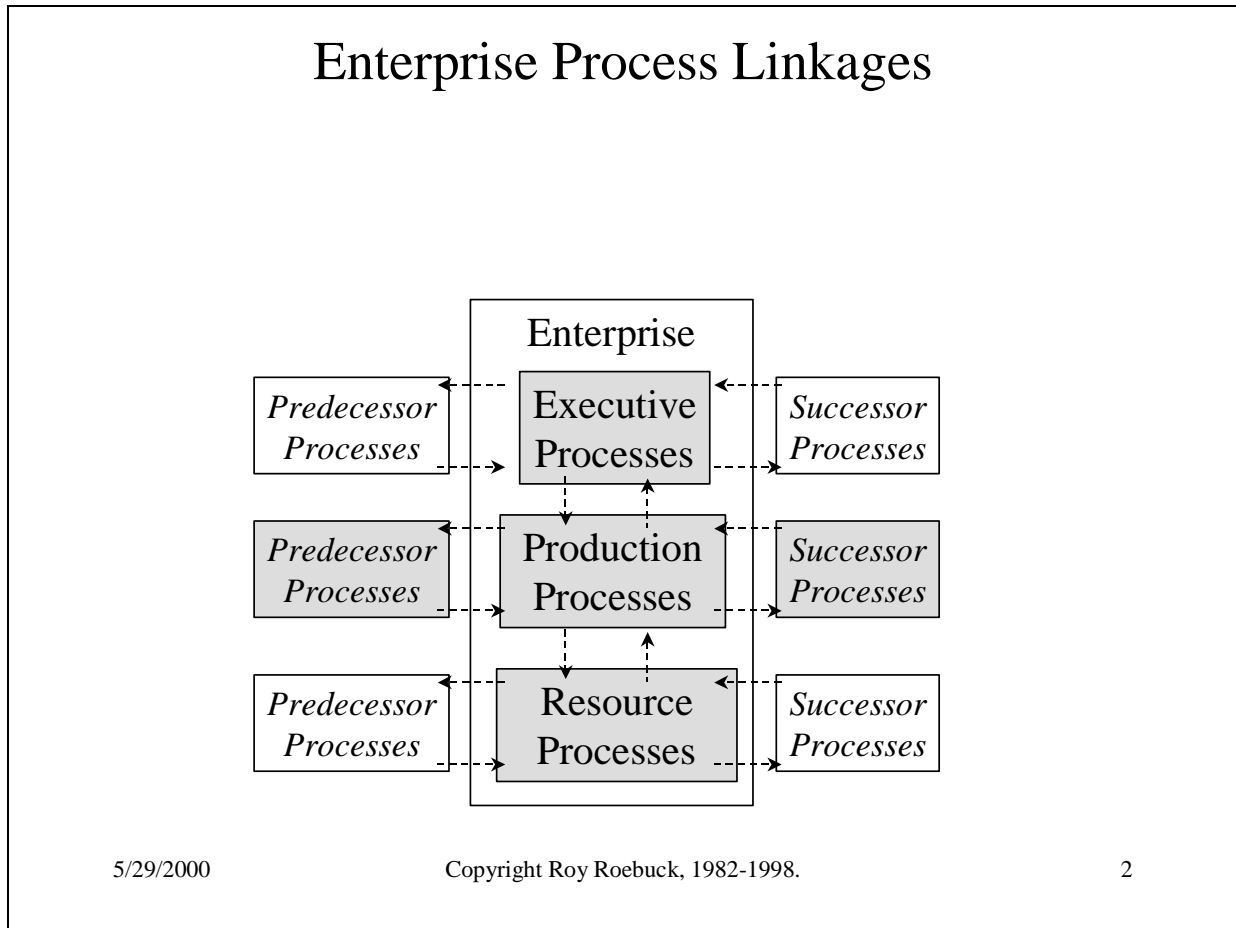
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1. Enterprise Management and Improvement (EMI) Technical Information

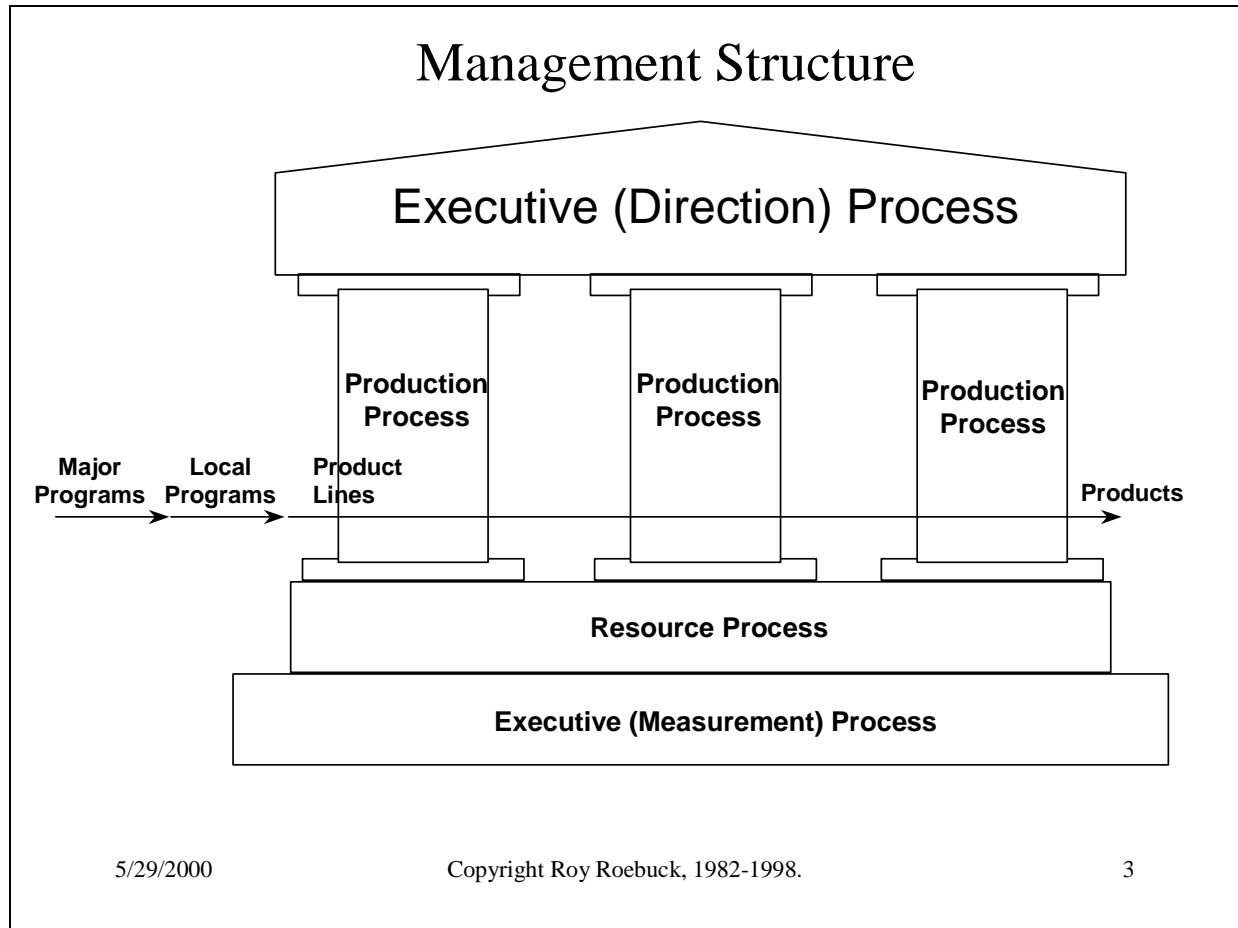
General Enterprise Management Strategic Management concepts applied to Enterprise (Business) Engineering and Improvements

2. Enterprise Process Linkages



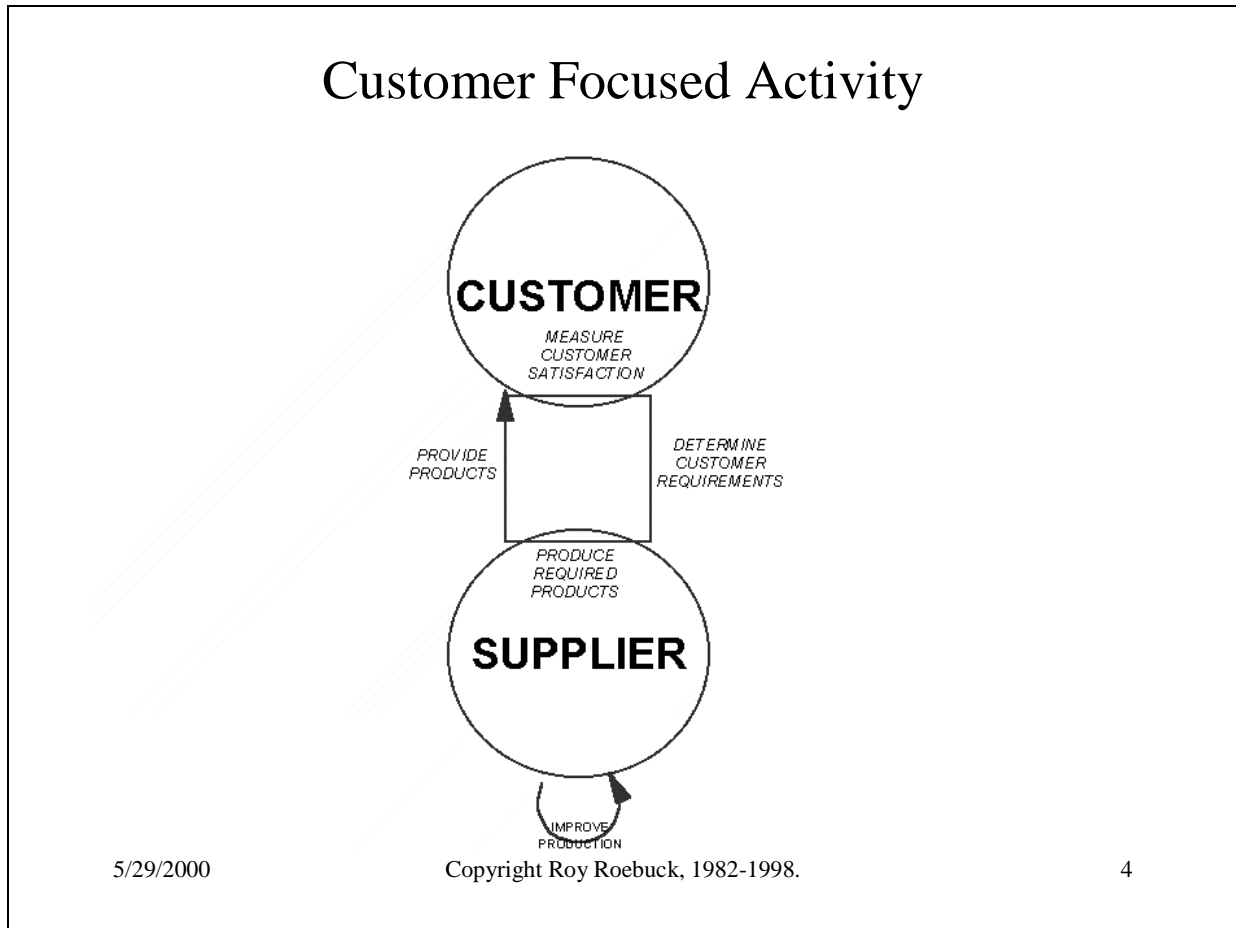
The three main categories of enterprise functions and their implementing processes shown in relation to each other and to corresponding functions and processes in the enterprise value chain.

3. Management Structure



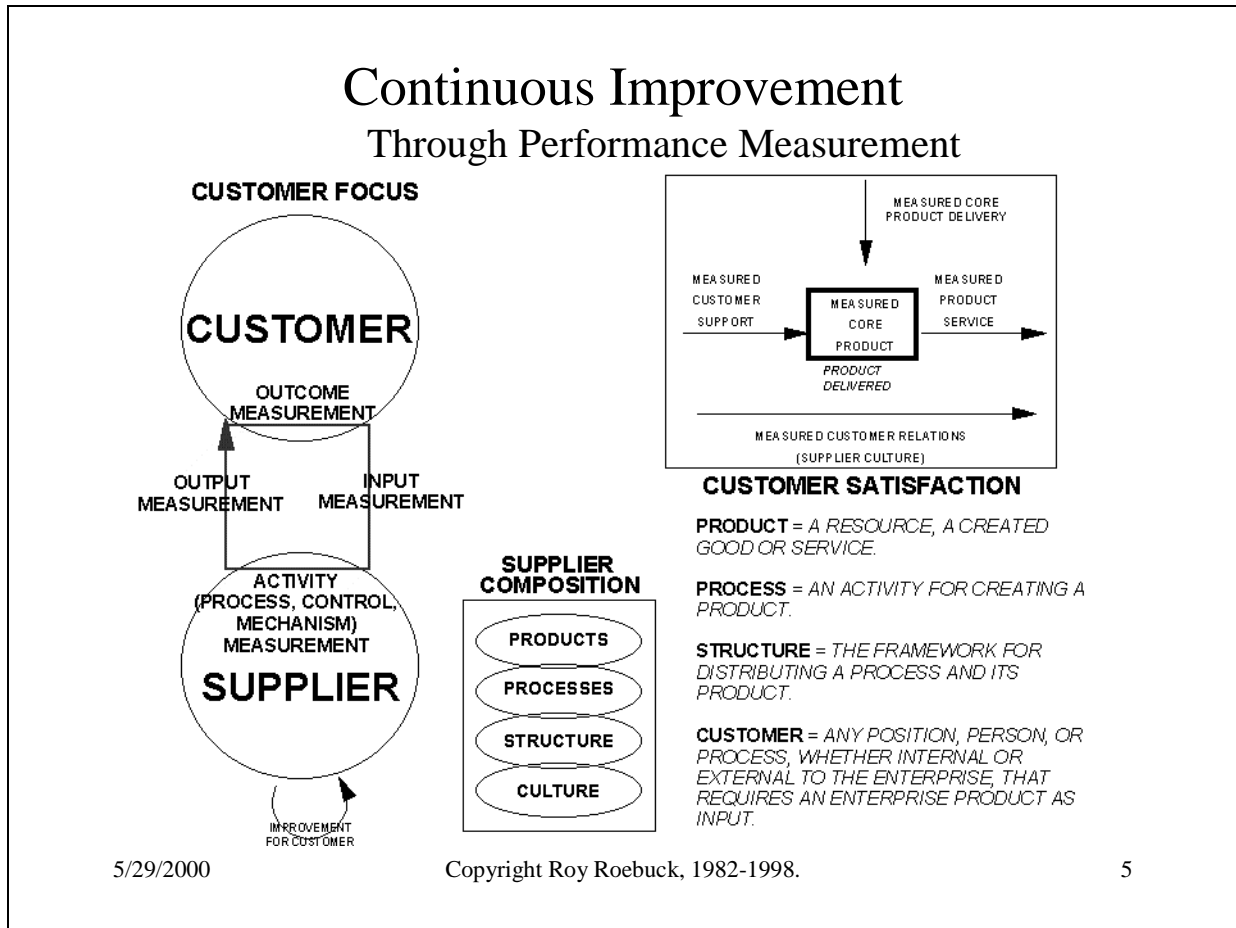
A notional model of how Executive, Production, and Resource processes relate to each other and to the products of the enterprise.

4. Customer Focused Activity



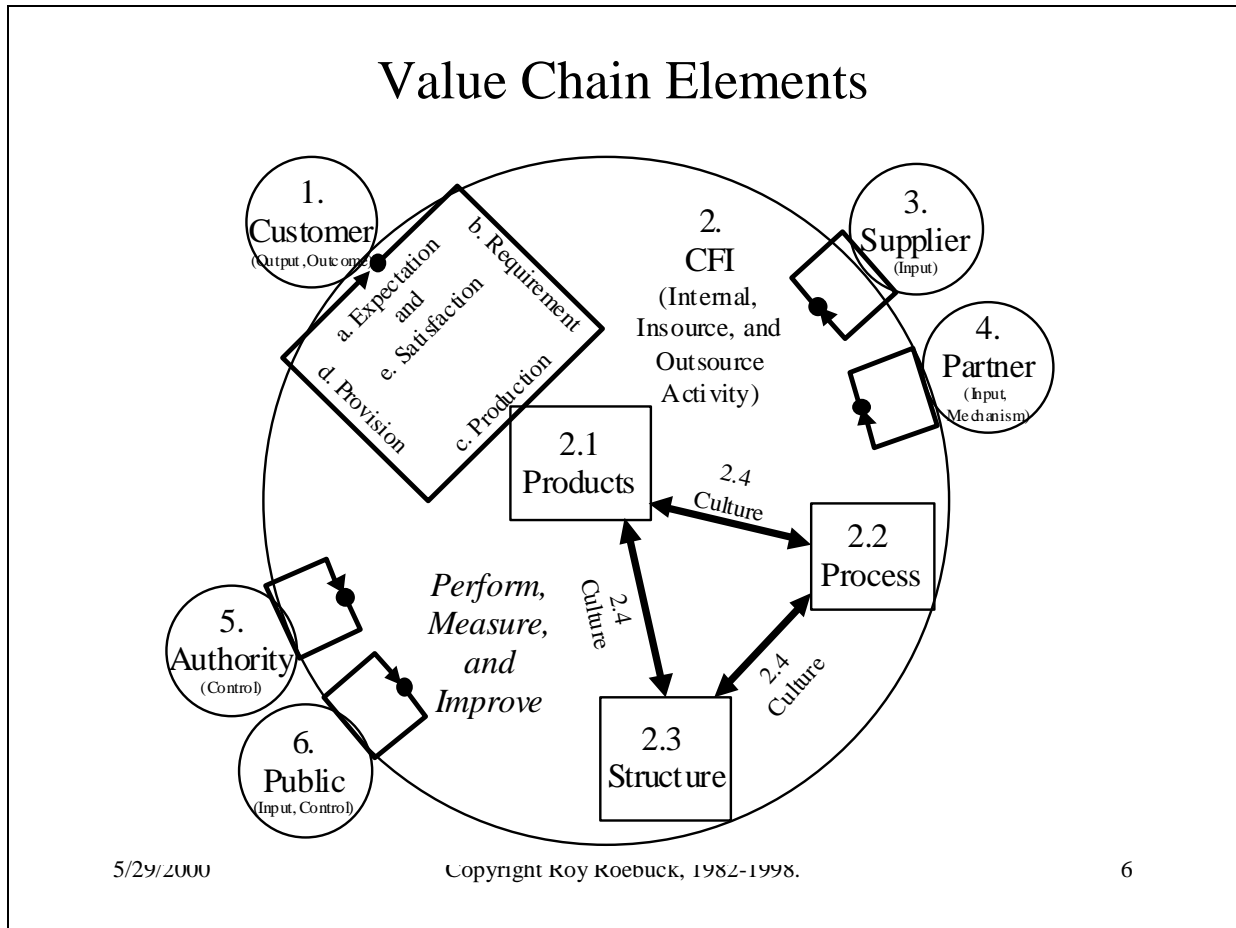
A model showing the spiral life cycle of interactions between a supplier of a product and the customer of that product. The emphasis here is on the two way interchange of information, and if necessary, exchange of tangible items.

5. Continuous Improvement Through Performance Measurement



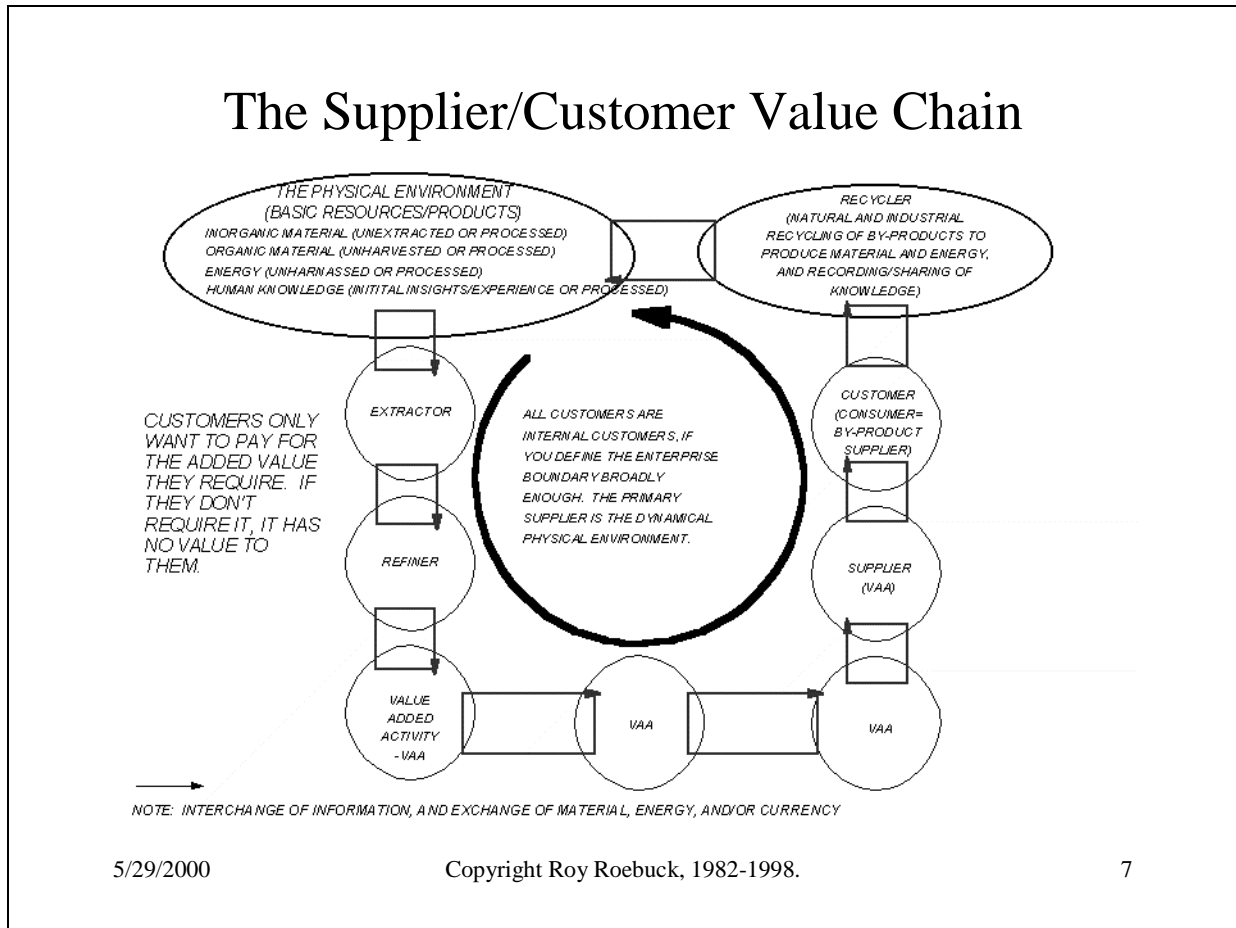
This diagram illustrates some of the components of the supplier environment and some of the elements that must be present in the interactions with the customer.

6. Value Chain Elements



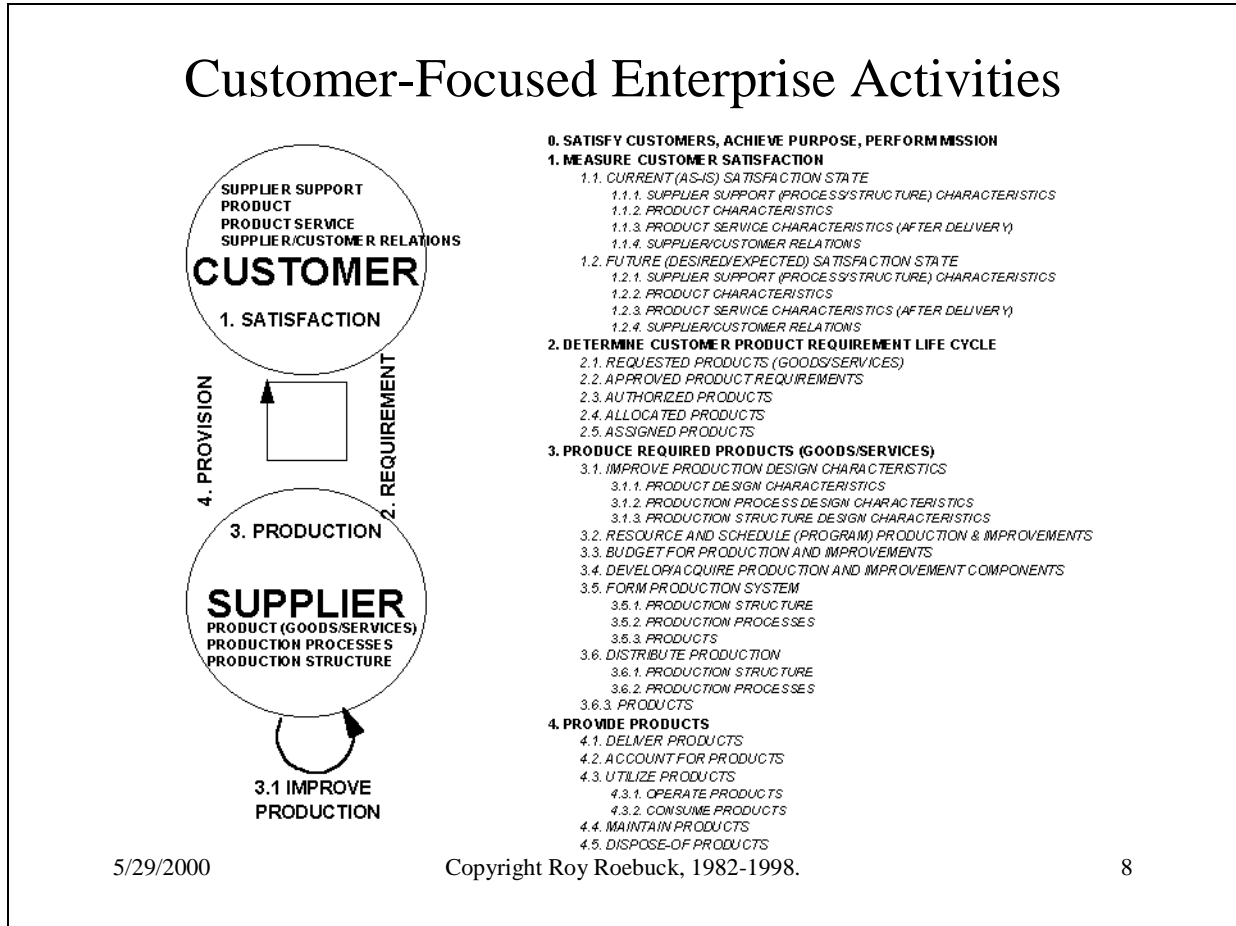
An expanded view of the the customer focus model to identify the corresponding relations between an enterprise’s customers, suppliers, authorities, partners, and the public. The same two way communication between these parties and the enterprise applies here.

7. The Supplier/Customer Value Chain



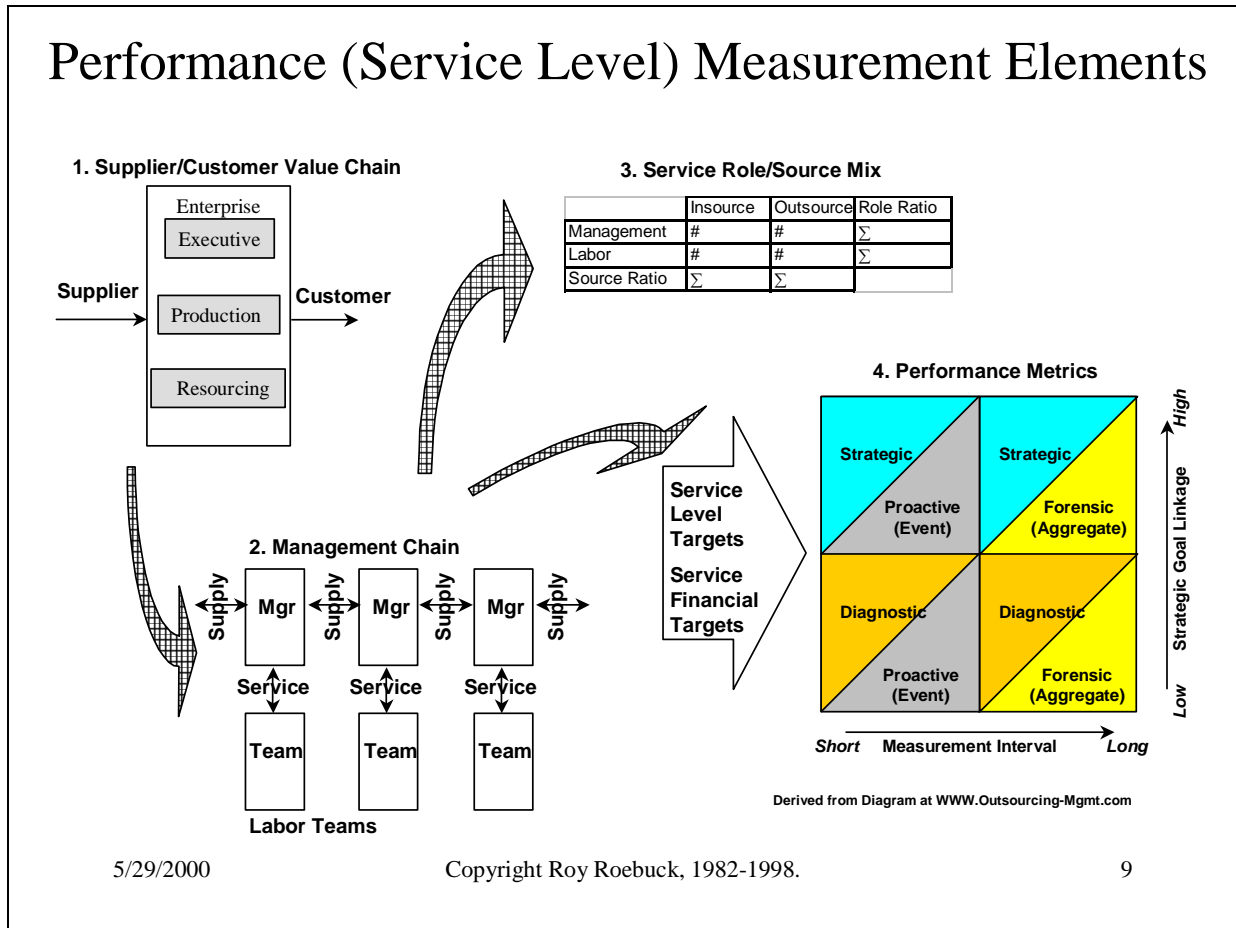
When seen from a full life cycle model, a value chain starts with raw resources, adds processing, resulting in consumption, ending in disposal back into a new raw form.

8. Customer-Focused Enterprise Activities



This diagram provides a generalized outline of the cyclical activities that can serve as a Framework for becoming customer-focused.

9. Performance (Service Level) Measurement Elements



This diagram illustrates the movement of an enterprise through four stages in preparation for managing via performance measures.

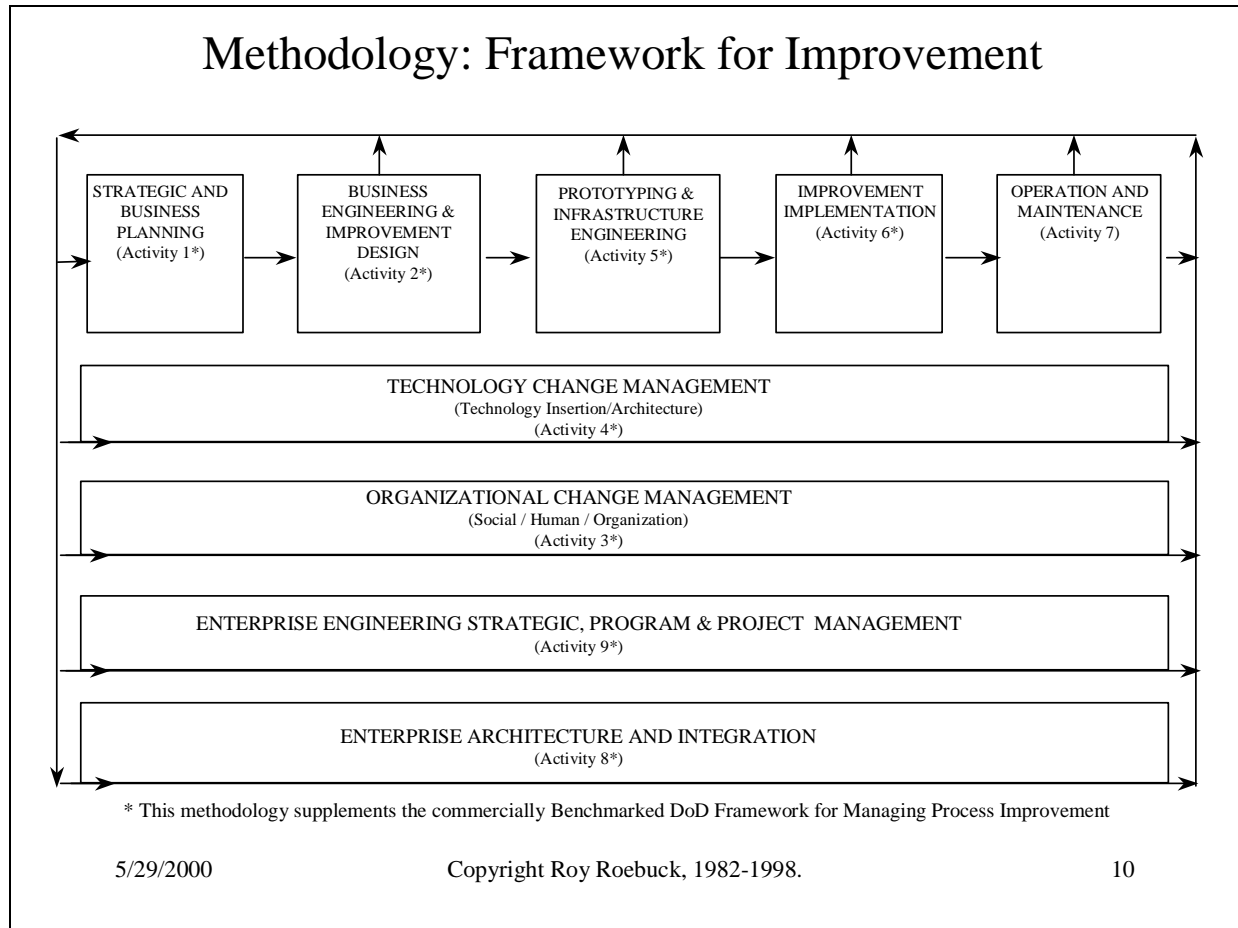
Step 1 involves identifying and defining the processes of the enterprise.

Step 2 involves mapping the value chain of these processes both within the enterprise and around it.

Step 3 involves deciding on the ratio of inhouse and outsourced management functions and labor functions.

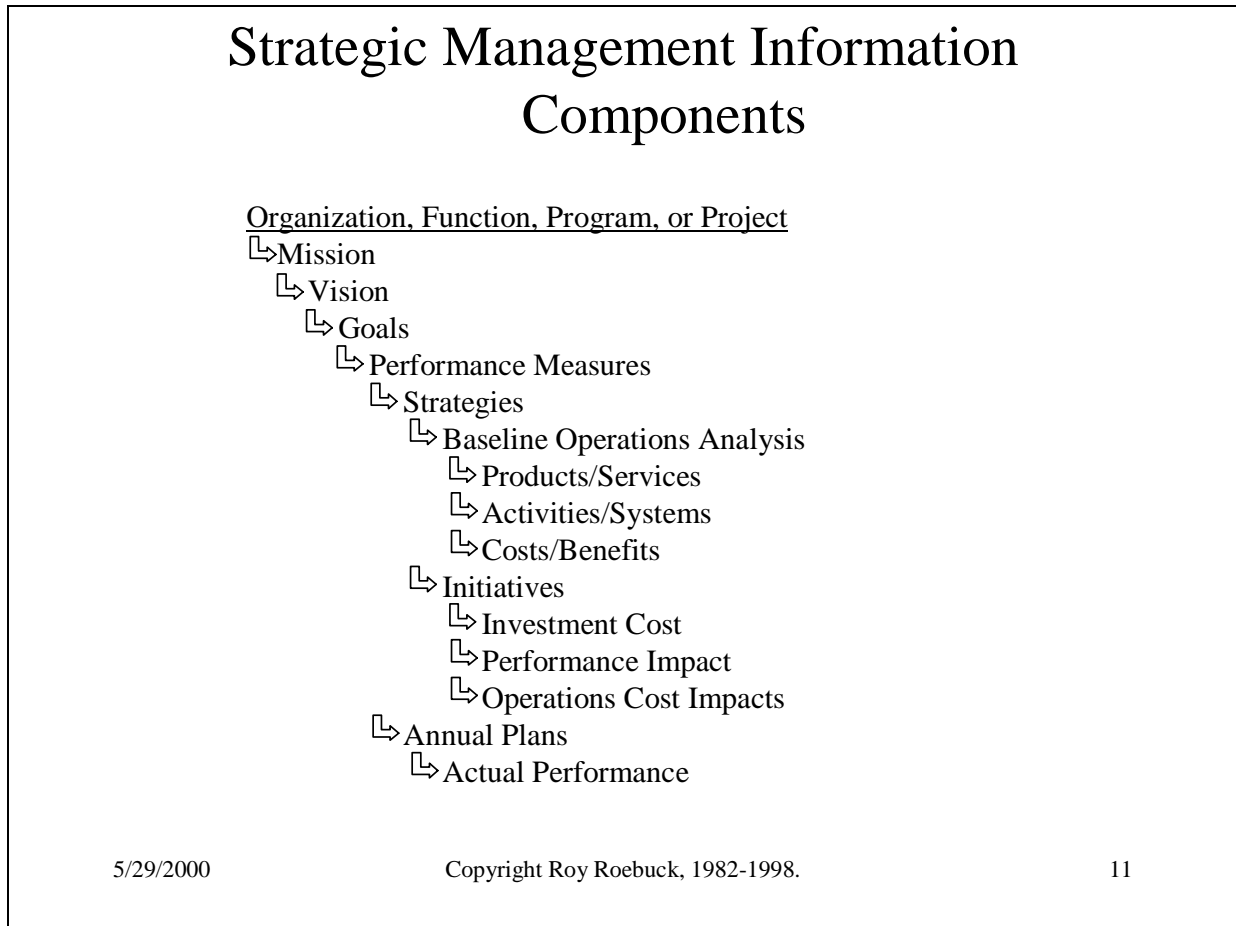
Step 4 involves performing the complex analysis and planning necessary to define, develop, generate, and refine performance measures in relation to the enterprise goals.

10. Methodology: Framework for Improvement



This diagram illustrates the spiral life cycle of activities involved in enterprise improvement. Providing resources to perform the support activities (#3, 4, 8, and 9) are critical, because these activities either are the mechanisms for the improvements to go forward (#8 and 9), or they help reduce the constraints on the improvements (# 3 and 4).

11. Strategic Management Information Components



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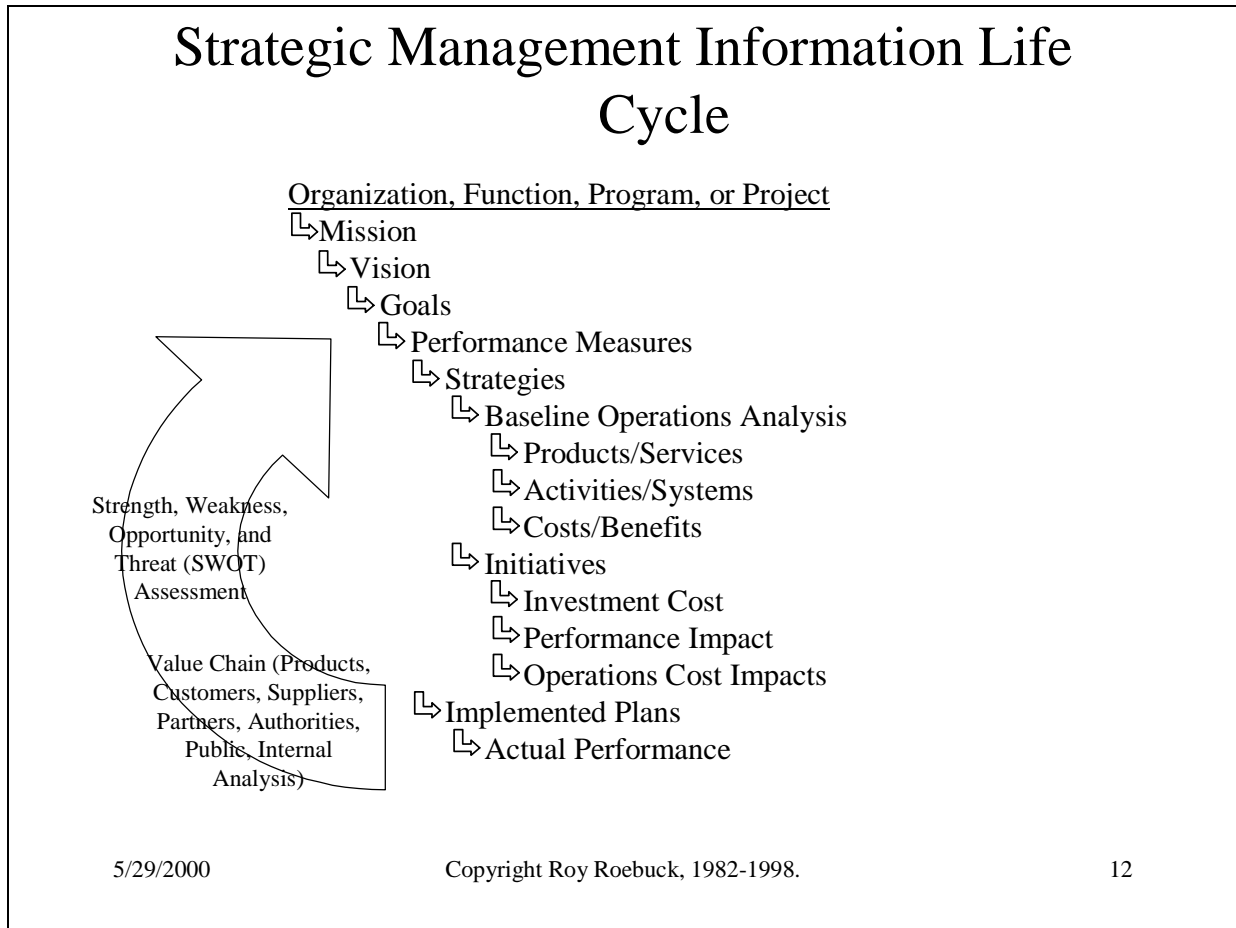
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This diagram illustrates the information products required for a single strategic management process. Note that a strategic management process can be applied by any organization, any function within the organization, any program within a function, or any project within a program. The hierarchical nature of these information products corresponds with the parent/child details of any database application which supports strategic management. A key point of this hierarchy is the relation between Mission and Vision. Mission is the purpose (as in a business) or assigned area of responsibility (as in a government organization or internal government/business organizational element). Vision is your concept for completion of the mission, also known as your concept of operations (CONOPS). Goals are those things you will achieve to succeed in your mission, also known as critical success factors (CFS). Performance Measures are the quantitative indicators of success in achieving a goal stated in a time frame, as in an Objective, Service Level Agreement, or Contract Deliverable. Strategies are the functional plans for ongoing, improved, or new activities which will measurably contribute to achieving one or more goals.

Note that the activities of this strategic management process need to be carried out any time there is a significant change in any of the parent components. For example, if the Mission

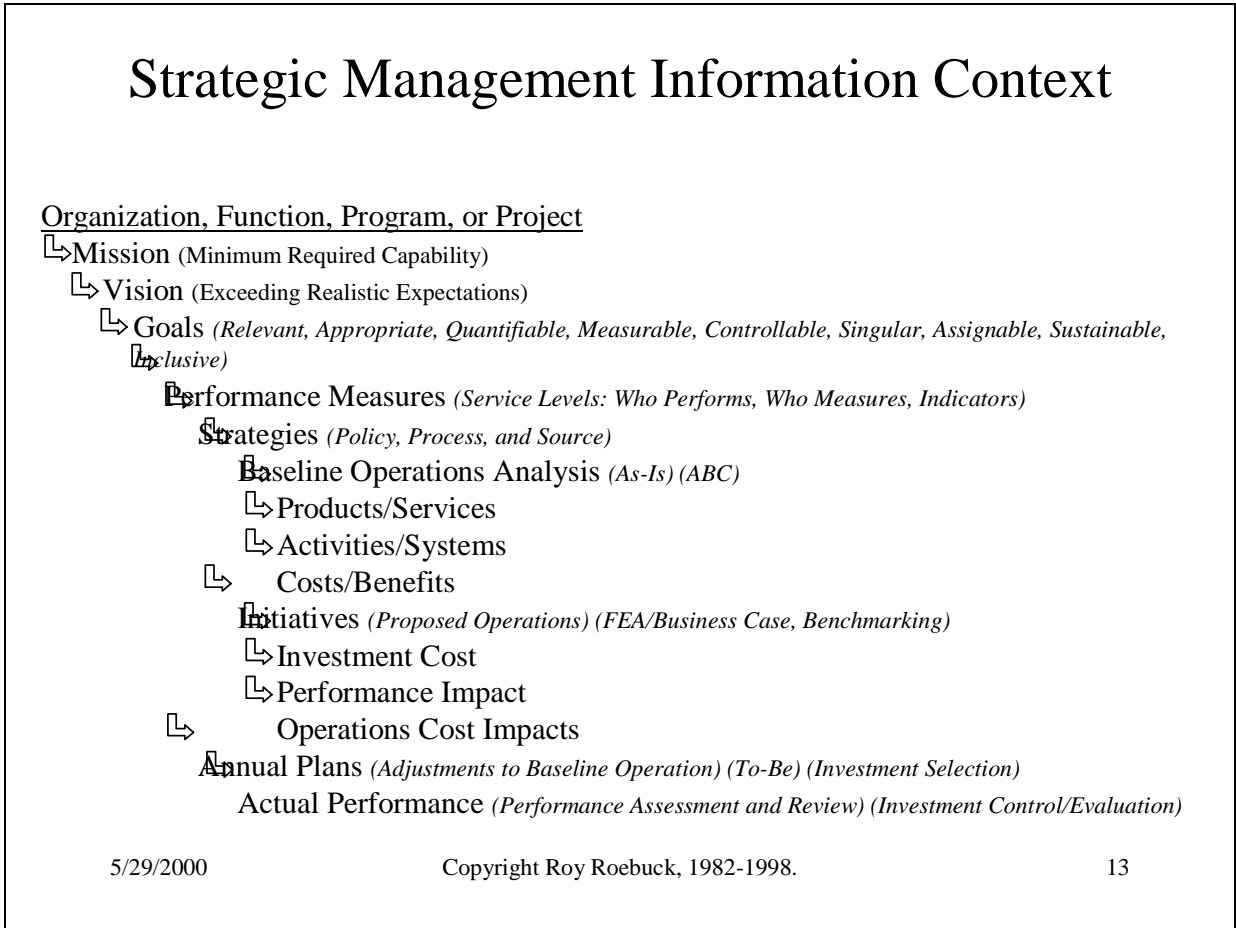
changes, everything in the strategic management process must be revalidated, or if a Goal changes, the Performance Measures and all components inside that Measure must be revalidated. In a dynamic environment, one of the most important enterprise Executive functions (at all organizational levels of the enterprise) is to track the environment for any changes which significantly effect the strategic management information products. Too often, organizations perform strategic management as though their environments are stable, when they are actually shifting significantly and unpredictably. As an example, it is common for many government organizations to believe that a five year review of mission, with annual reviews of vision and goals, quarterly review of measures, and annual budgets for strategies will suffice in the Internet Age. Unfortunately, most are finding that Mission Environments are changing at Internet speed, and those that operate in 5 year strategic cycle times are left in a constant reactive mode to the surprises an Internet world brings them.

12. Strategic Management Information Life Cycle



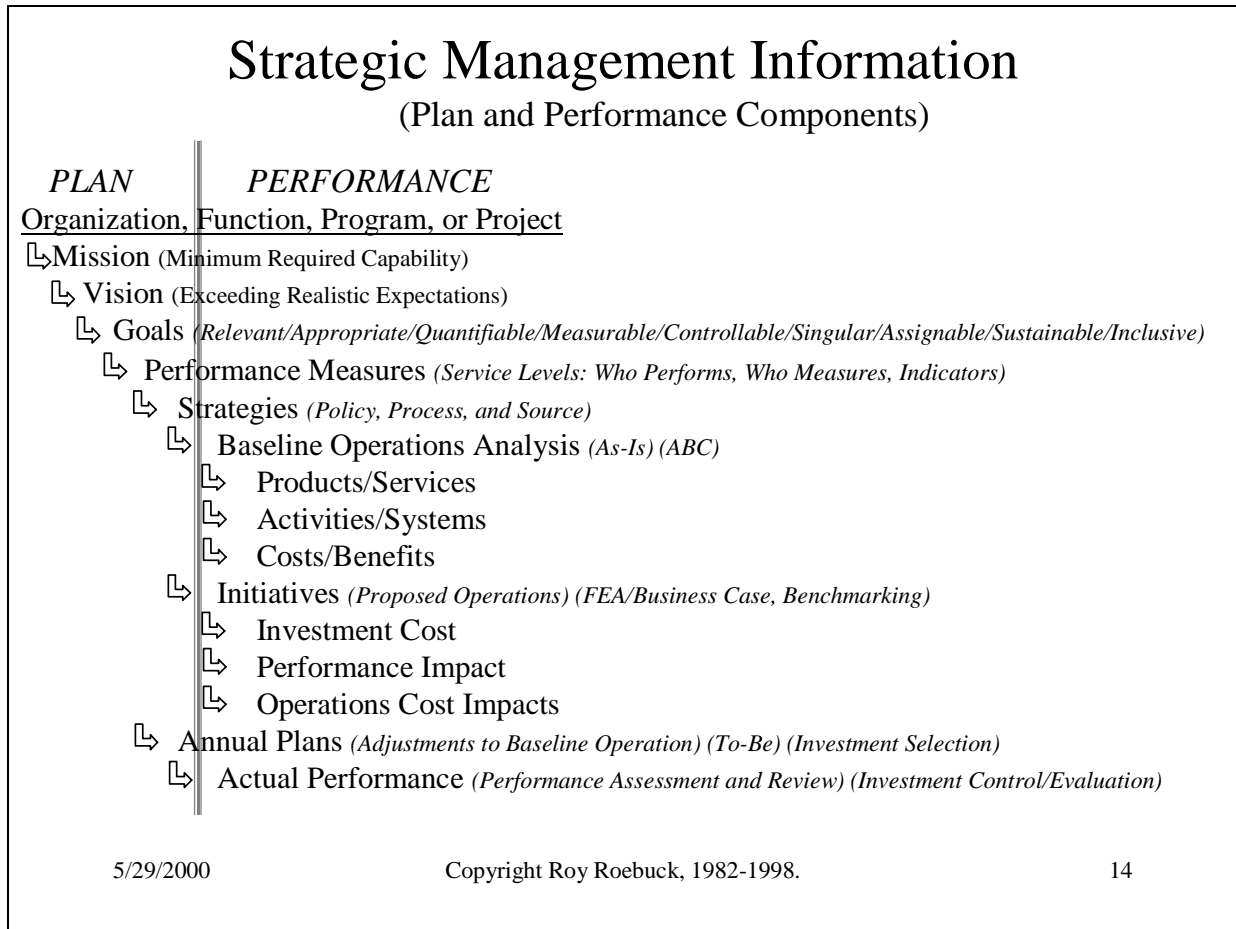
At a minimum, a full life-cycle strategic management capability would provide a solid foundation for effectively and efficiently implementing the process outlined here. It includes not only the information products of a single strategic management process, but also information products (Value Chain analysis, SWOT Assessment) that allow recycling of the strategic management information due to changes or greater awareness of the environment.

13. Strategic Management Information Context



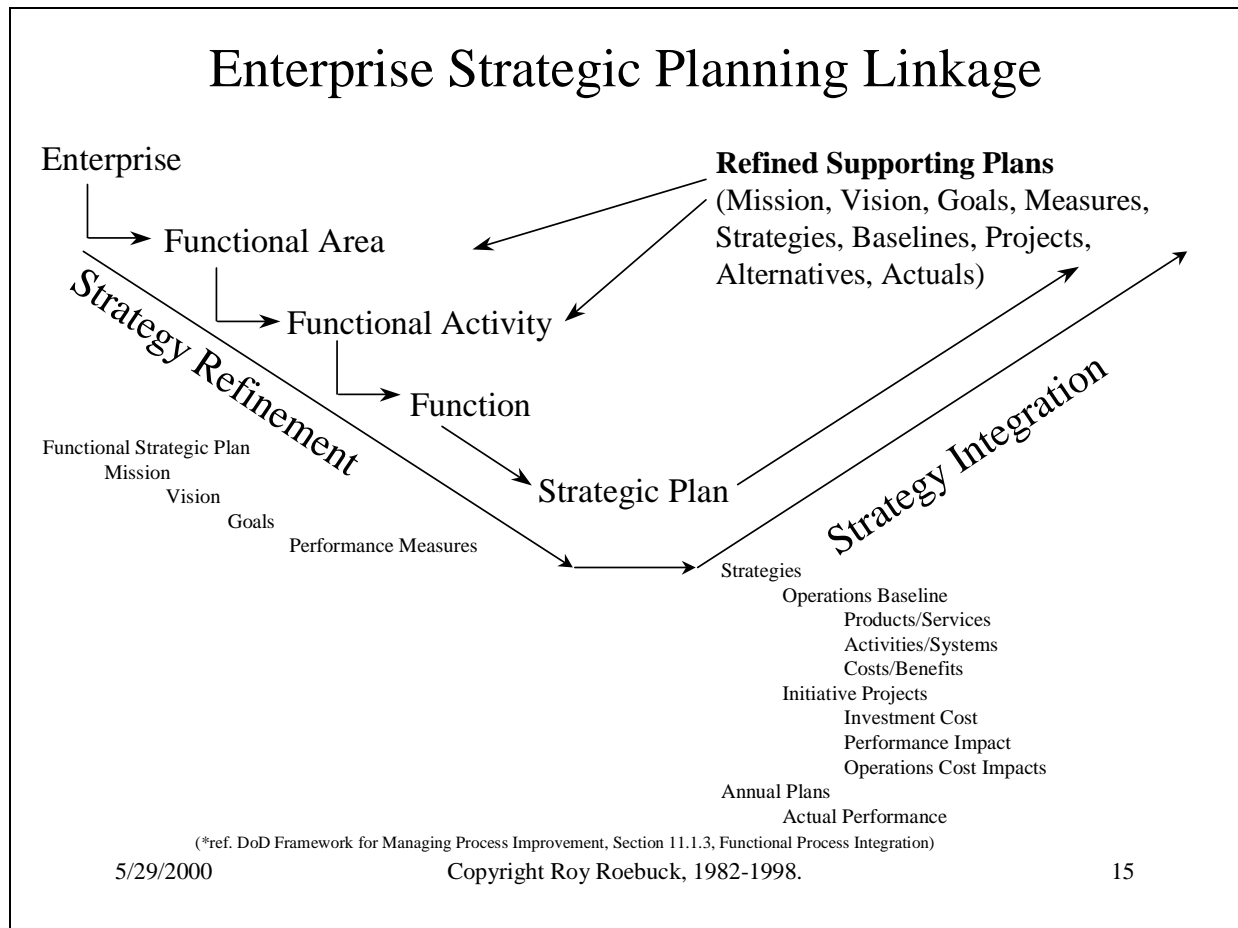
This diagram provides a correlation between the strategic management process and many of the terms from the diverse methods applied to enterprise improvement.

14. Strategic Management Information (Plan and Performance Components)



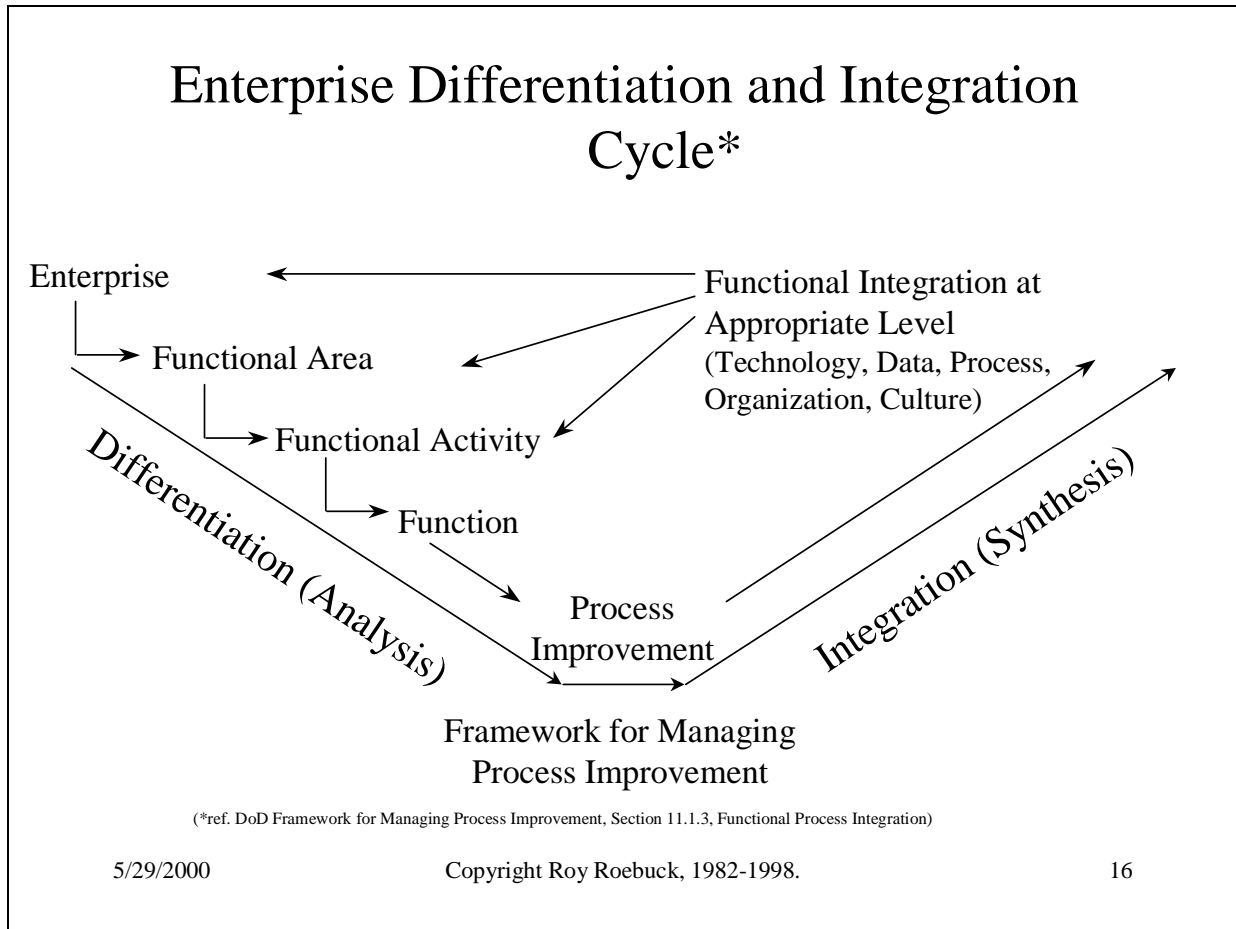
This diagram divides strategic management components into those that are generally part of planning and those that are generally part of performing against that plan.

15. Enterprise Strategic Planning Linkage



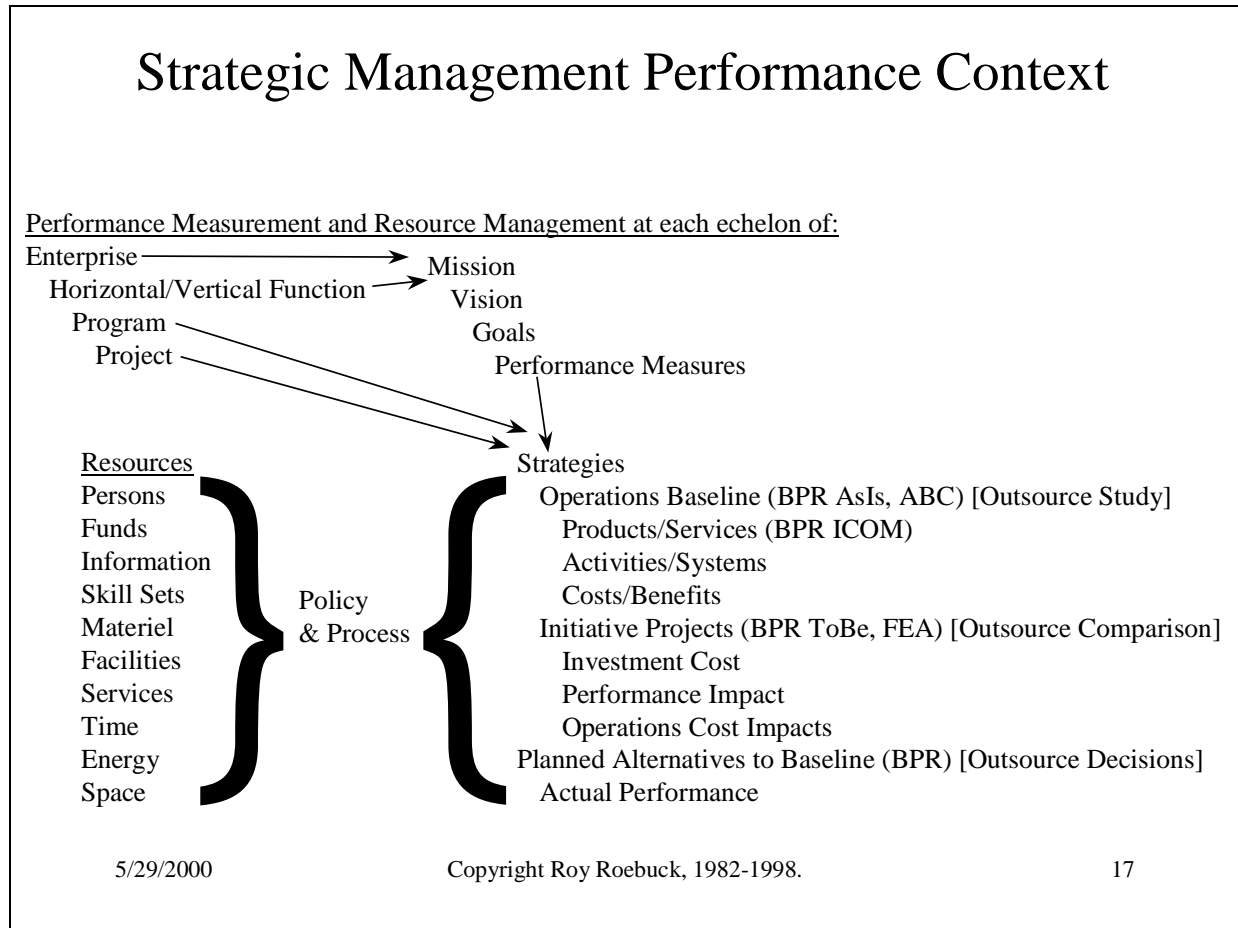
This diagram illustrates the concept of decomposing an enterprise plan to lower levels of organization as well as finer granularity in detail. Then, when the plan is highly refined and granular, it is consolidated to higher levels for approval, resourcing, and release. Note the role that strategic planning (consolidating Mission, Vision, Goals, and Performance Measures) at a given level of an organization plays in the overall strategic management of the organization. Most organizations that attempt the strategic management process progress down to the point of defining Goals and Performance Measures. Too often, they stop strategic management at this point, and do not document their strategic plan, because if a Goal is defined and they committed to it, and Performance Measures are set, then the managers are accountable for achieving those Measures in accomplishing those Goals. This accountability assumes they took into consideration as much of their environment as they could control during the early stages of strategic management. If they did not consider what they could and couldn't control, then the goals and measures are unrealistic and probably cannot be achieved. Likewise, if they are expected to achieve the same goals and measures when significant changes have taken place in their environment, then the expectations are unrealistic because the basic assumptions underlying the Mission, Vision, Goals, and Measures would have changed. If the performance measures change, then the strategic plan and detailed strategies must change.

16. Enterprise Differentiation and Integration Cycle*



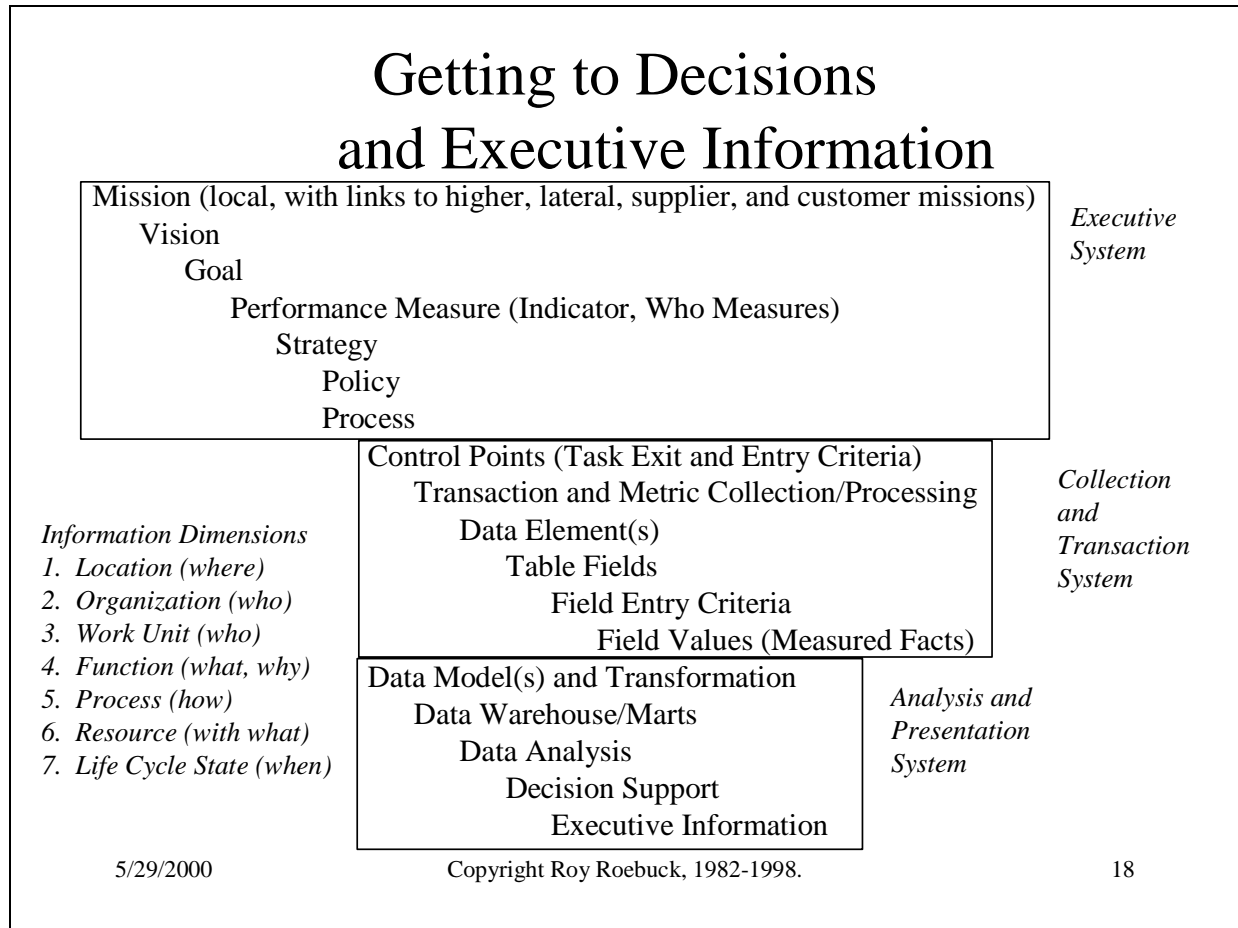
This diagram illustrates where the Framework for Managing Process Improvement would be applied in the cyclical analysis and synthesis of Mission Performance.

17. Strategic Management Performance Context



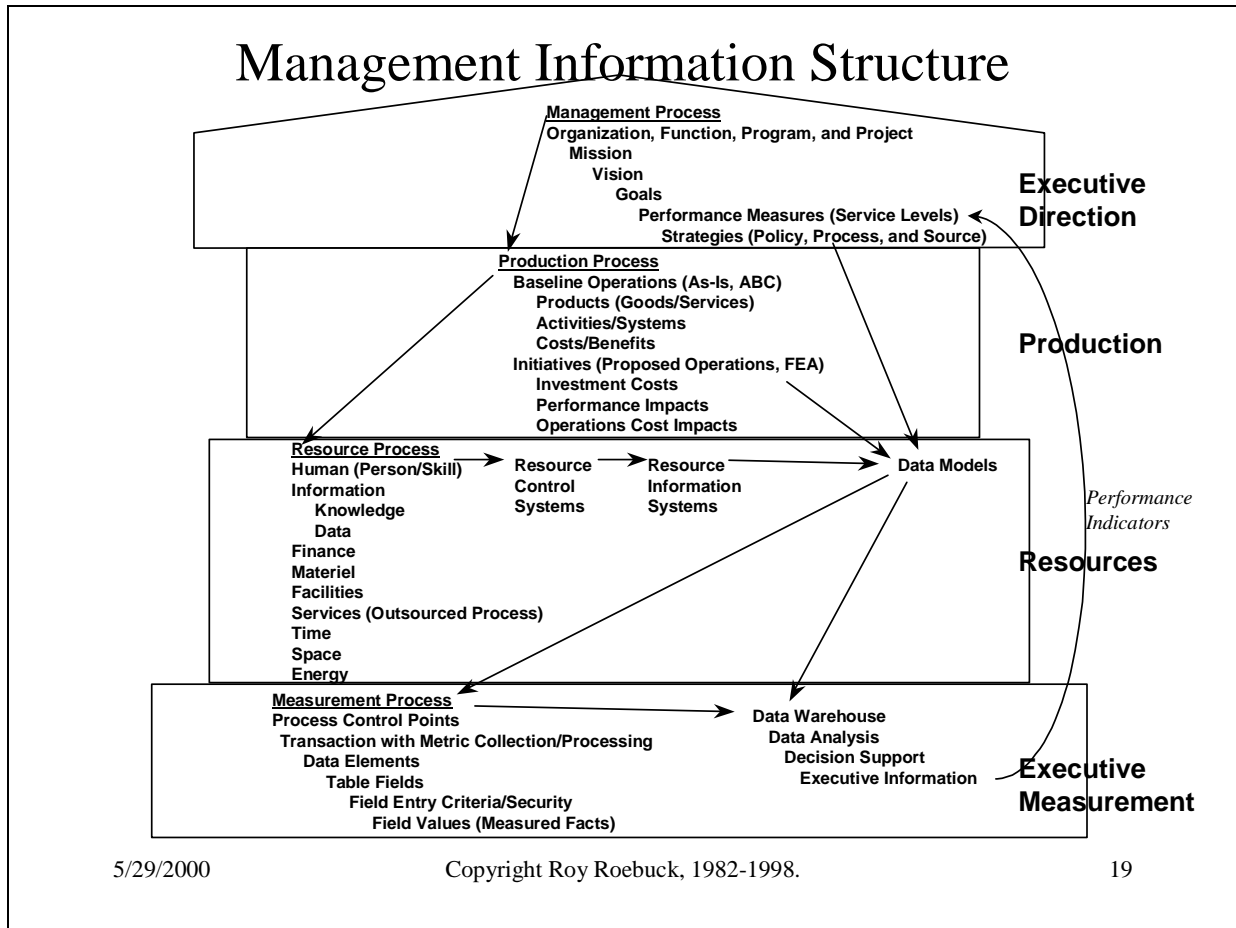
This diagram illustrates where strategic planning, as the top half of the strategic management outline, transitions into resource planning, at the bottom half of the outline.

18. Getting to Decisions and Executive Information



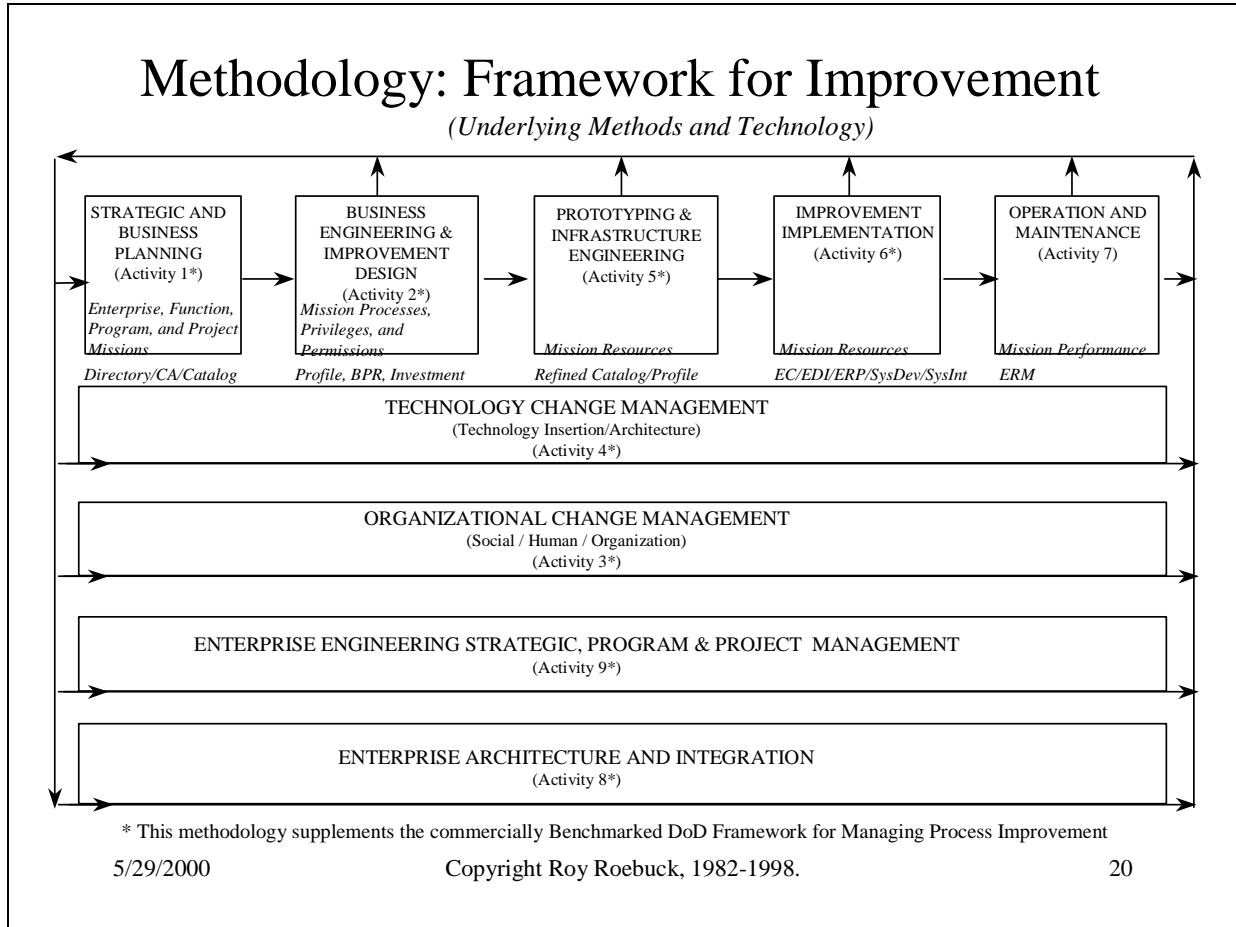
This diagram illustrates where database capabilities would be exercised as part of generating, analyzing, and presenting the pre-defined indicators (facts/metrics) needed to measure performance of a process, within a function's policy, within a performance measure's strategy. The generalized Information Dimensions on the left correspond to the basic questions that can be asked about anything being measured.

19. Management Information Structure



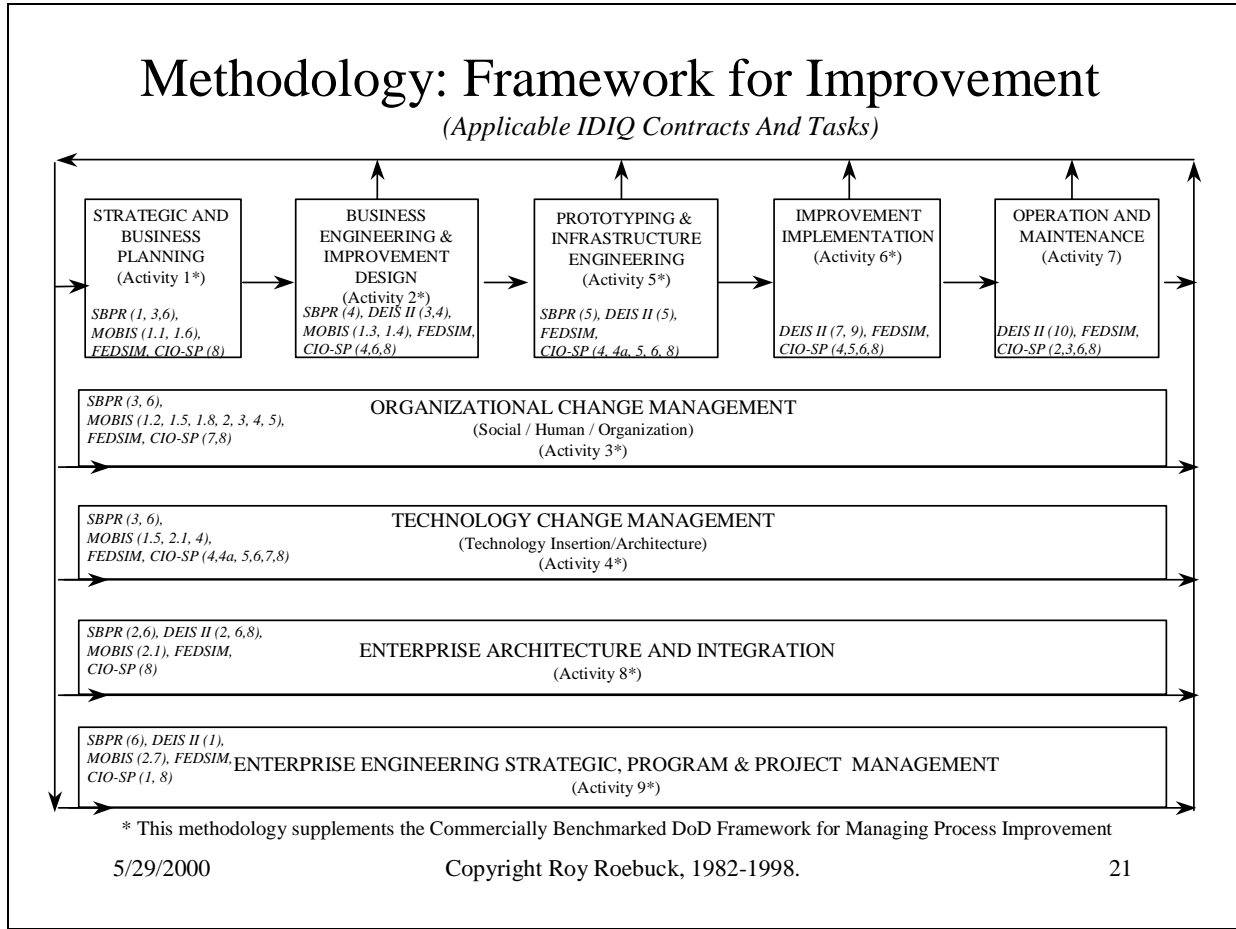
This diagram illustrates a more detailed view of the flow of information between the various aspects of strategic management.

20. Methodology: Framework for Improvement (Underlying Methods and Technology)



This diagram illustrated some of the common methodology terms that would apply to different aspects of the Framework for Improvement.

21. Methodology: Framework for Improvement (Applicable IDIQ Contracts And Tasks)



This diagram illustrates my assessment of some of the DoD Indefinite Delivery, Indefinite Quantity (IDIQ) contracts that can be applied to government Improvement activities.

22. Life Cycles (Function, Program, Project)

Life Cycles (Function, Program, Project)

BPR View	TQM View	OWIS BEI View	DoD FMPI View	DoD Policy View	Resource Management View
As Is	Do	Activity 3 Activity 4 Activity 7 Activity 8 Activity 9	Phase 2B Phase 2C	FMPI	Execute (Deploy, Operate, Maintain) and Investment Control (CY to CY-n)
	Check	Activity 2	Phase 2A	FMPI	Assess/Model (CY to CY-n) (SWOT)
				GPR, FMPI	Review/Measure and Investment Evaluation (CY to CY-n)
To Be	Adjust	Activity 2 Activity 5 Activity 6	Phase 2A Phase 3 Phase 4	FMPI, TAFIM (JTA, COE, DII, SHADE), GPR, ITMRA	Improve/Develop Goals, Measures, Strategies, and Systems (CY, CY-n)
	Plan	Activity 1	Phase 1	FMPI, GPR, ITMRA, Plan (PPBS)	Plan and Investment Decision (EPA1 to EPA10, 8 to 17 yrs out)
				GPR, ITMRA, Program (PPBS)	Program and Investment Decision (PY1 to PY5, 3 to 7 yrs out)
				GPR, ITMRA, Budget (PPBS)	Budget and Investment Decision (BY1 to BY2, 1 to 2 yrs out)
				Schedule and Investment Control (Profit/Spending Plan) (CY) (Project/Process Schedule, Duration and Frequency)	
				Contingency Program (CY)	

CY=Current Year; **BY**=Budget Year; **PY**= Program Year; **EPA**=Extended Planning Annex; **PPBS**=Planning, Programming and Budgeting System; **FMPI**=Framework for Managing Process Improvement; **GPR**=Government Performance and Results Act; **TAFIM**=Technical Architecture for Information Management; **ITMRA**=Information Technology Management Reform Act; **SWOT**=Strength, Weaknesses, Opportunities, and Threats.

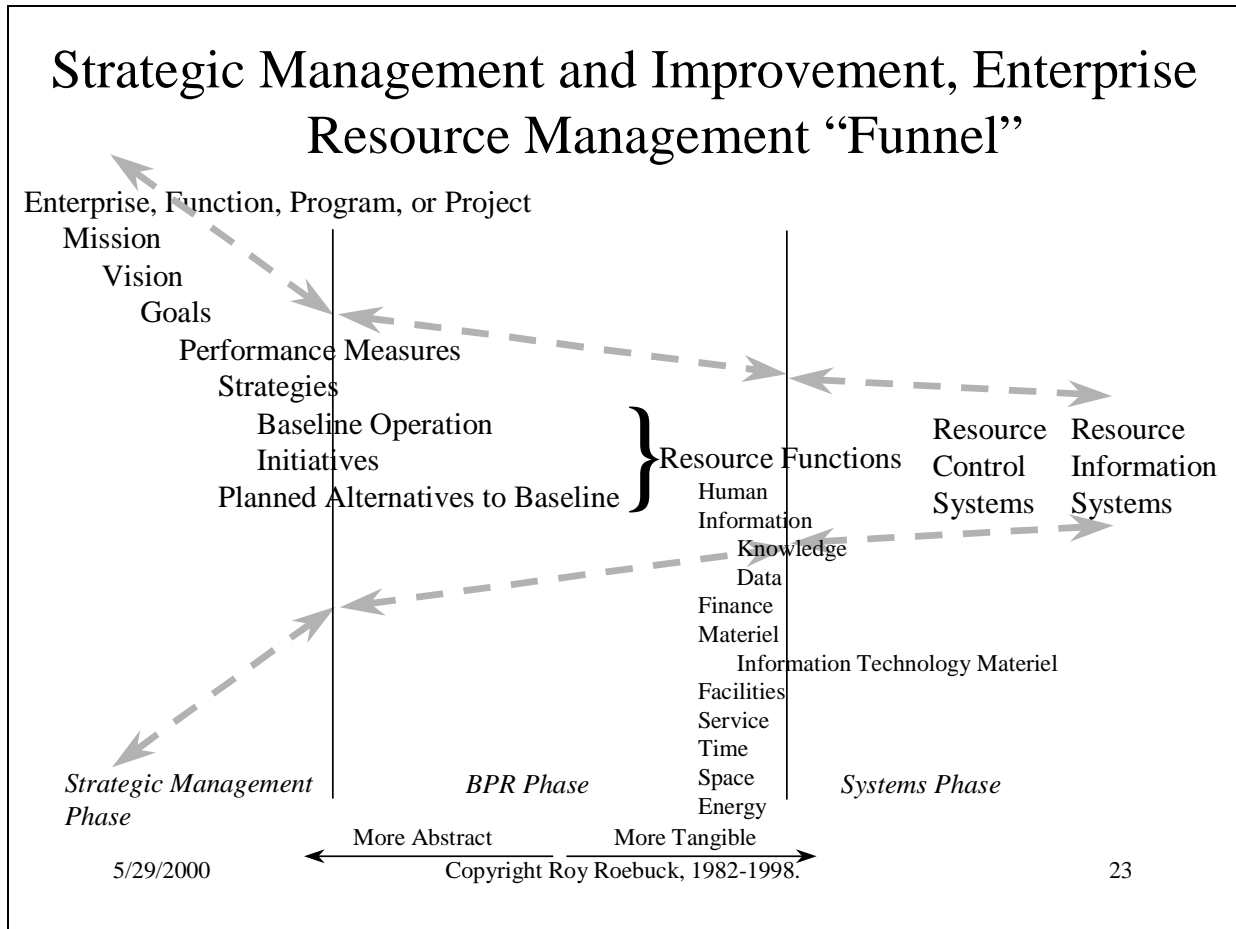
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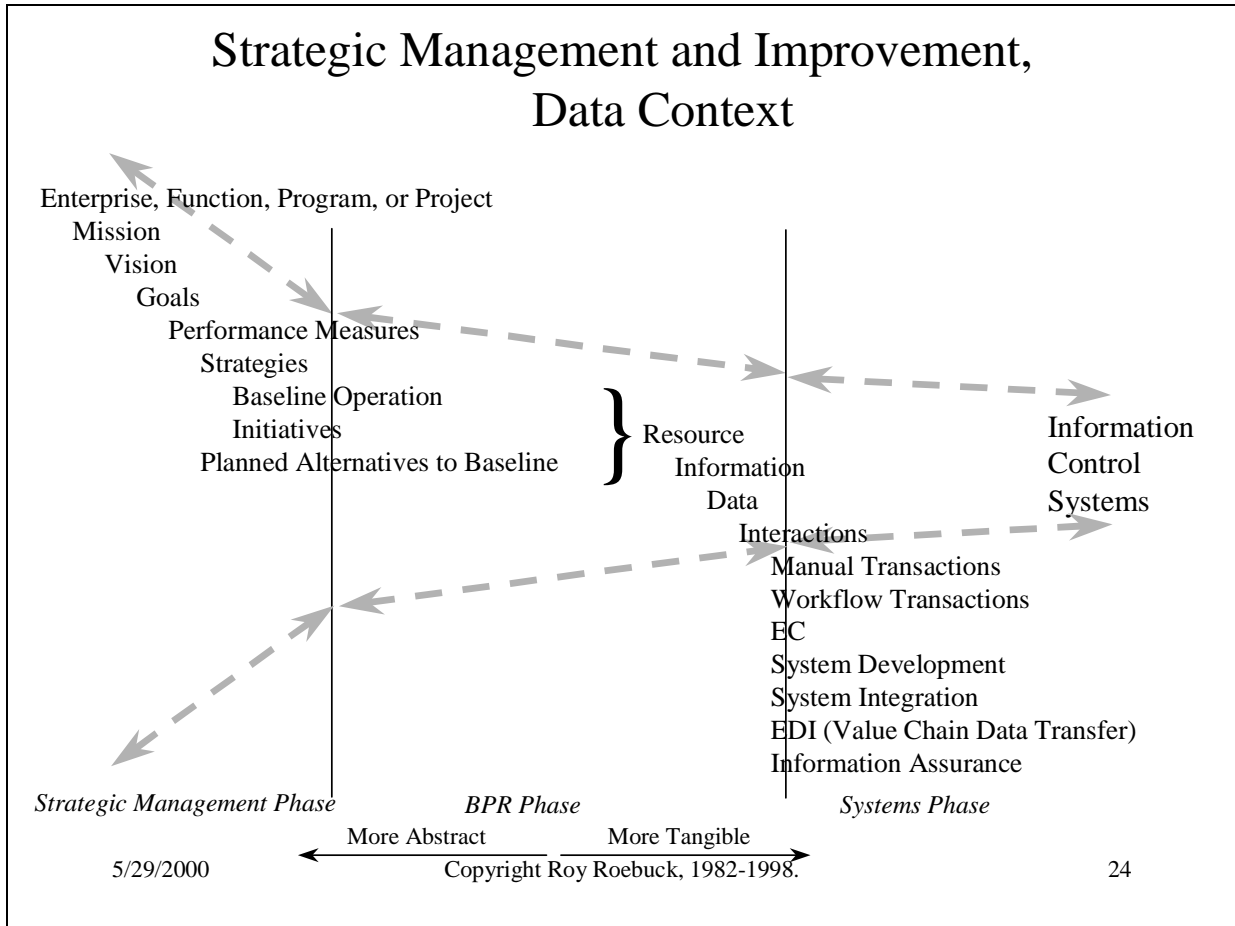
This diagram illustrates the correlation between the life cycle stages of various improvement and management methods relevant to DoD.

23. Strategic Management and Improvement, Enterprise Resource Management “Funnel”



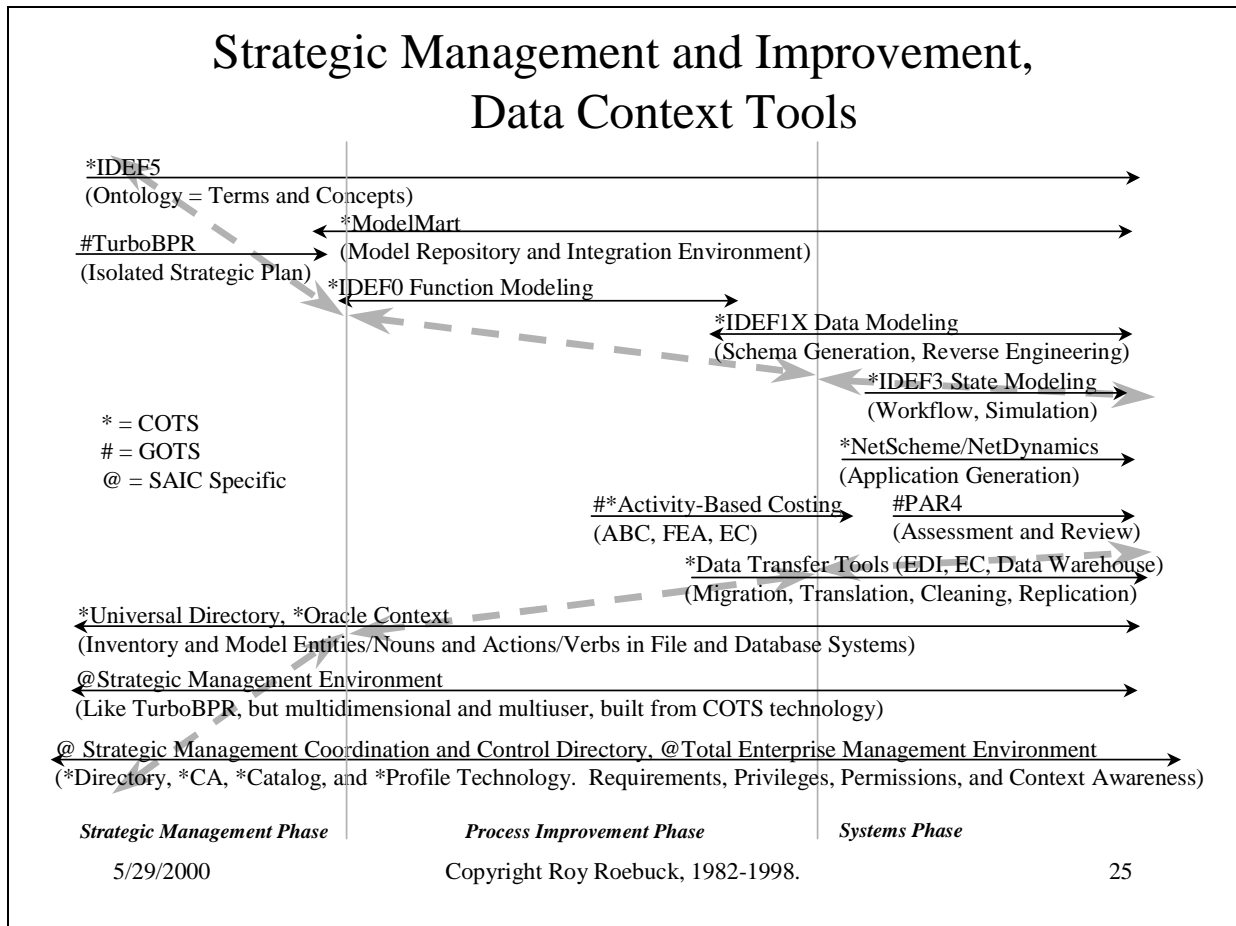
This diagram illustrates the handoffs between Strategic Management, Business Process Reengineering, and System/Software Development as part of an overall improvement effort. The funnel connotes that many options exist at the strategic management level, and that these options must be increasingly constrained and limited as the enterprise moves deeper into reengineering and systems development. This also illustrates the sensitivity of system development efforts to changes in the process being reengineered, and to the Mission, Vision, Goals, Performance Measures, Strategies, and Plans. A small change in a wider part of the funnel can have greatly magnified impact at the narrow end of the tunnel

24. Strategic Management and Improvement, Data Context



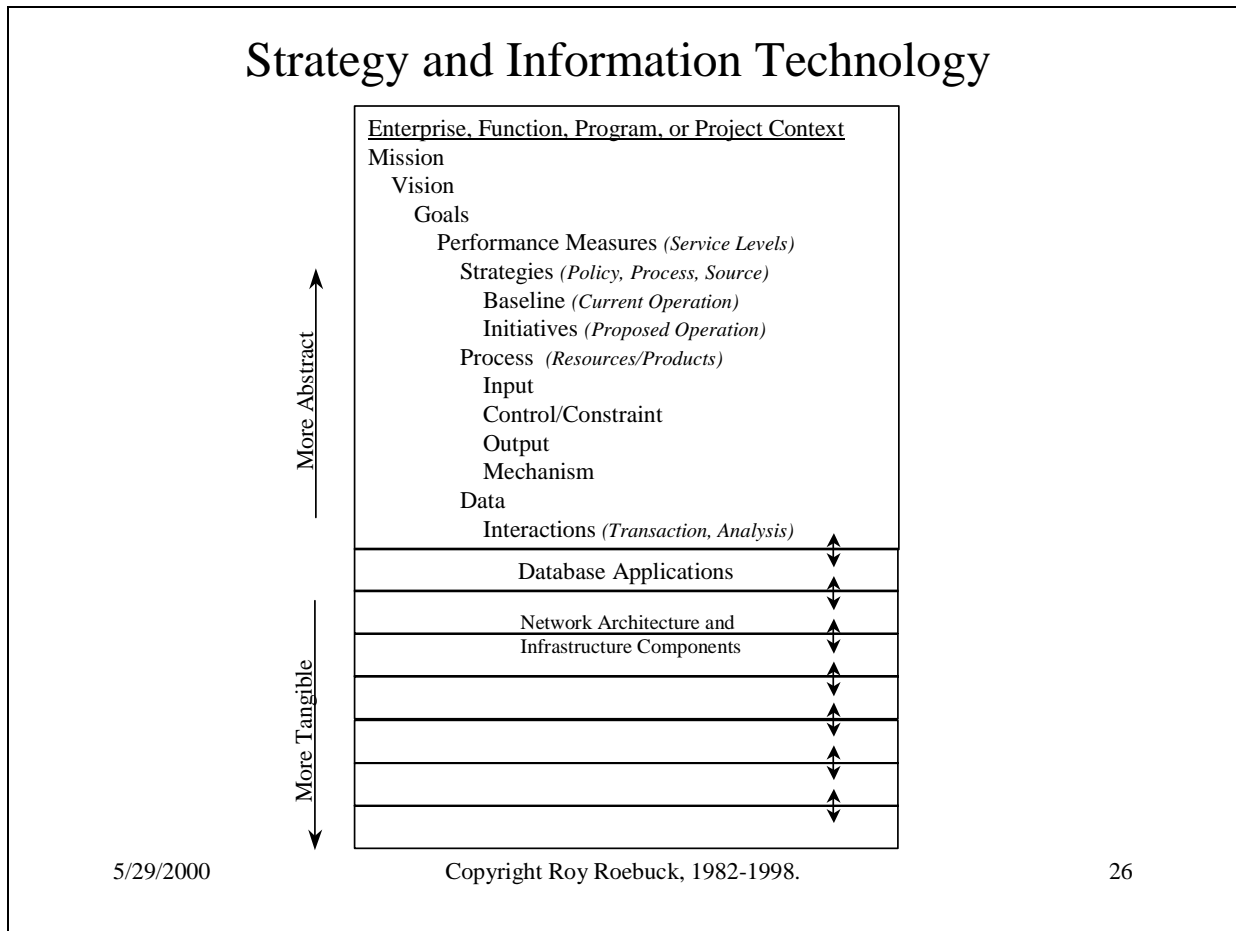
This funnel diagram illustrates how data, as a resource, would relate to the broader strategic management and process reengineering efforts.

25. Strategic Management and Improvement, Data Context Tools



This diagram illustrated some of the methods, tools, techniques, and notations that could be applied at various portions of the overall enterprise improvement (strategic management, process reengineering, system development) effort.

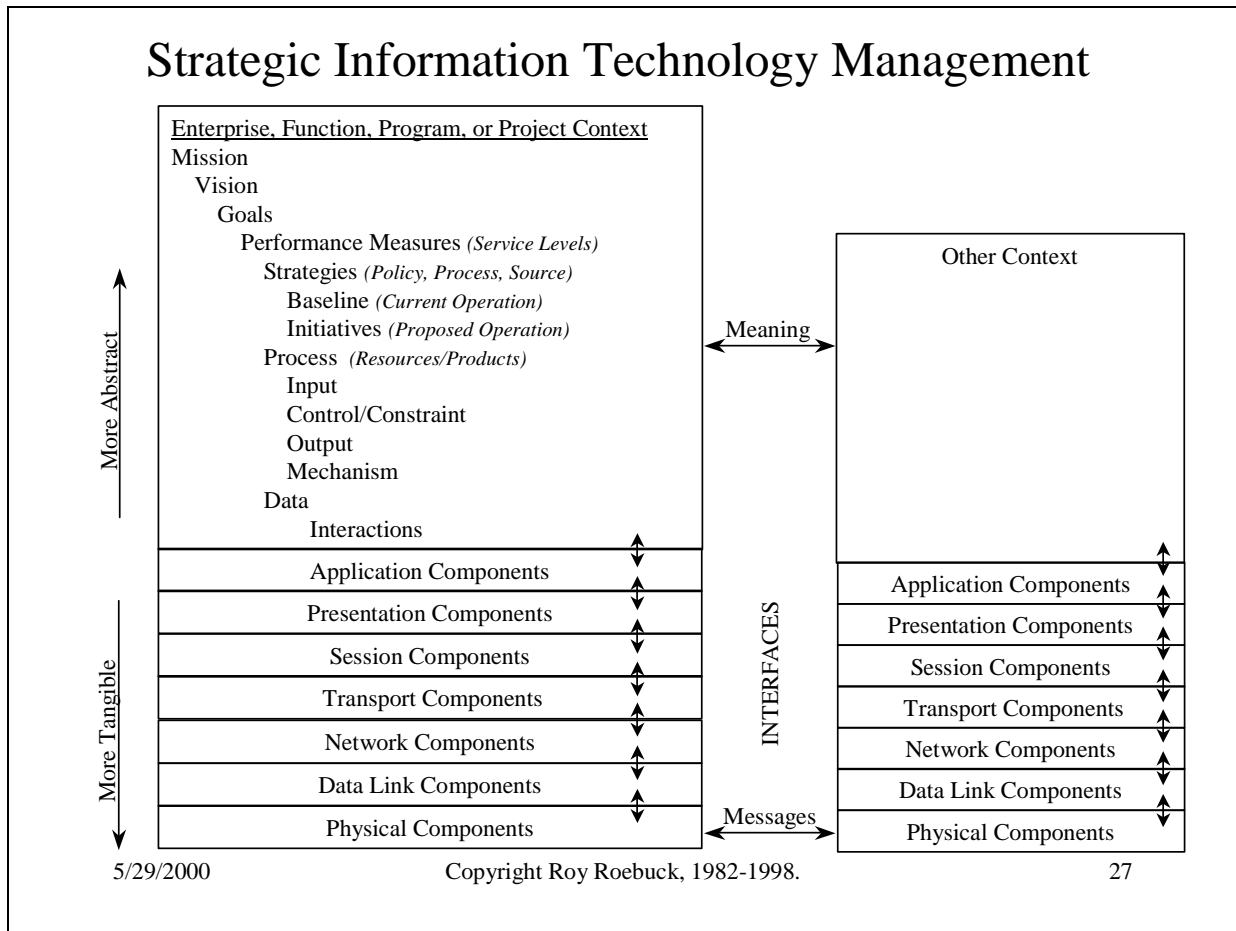
26. Strategy and Information Technology



This diagram illustrates where the “data” context of enterprise improvement would interface with the top layers of a technical architecture such as the OSI 7 layer protocol stack.

The top level of the OSI 7 layer model is the “Application” layer, while the bottom layer of the enterprise improvement hierarchy would be an “Application” to enable interactions within the enterprise.

27. Strategic Information Technology Management

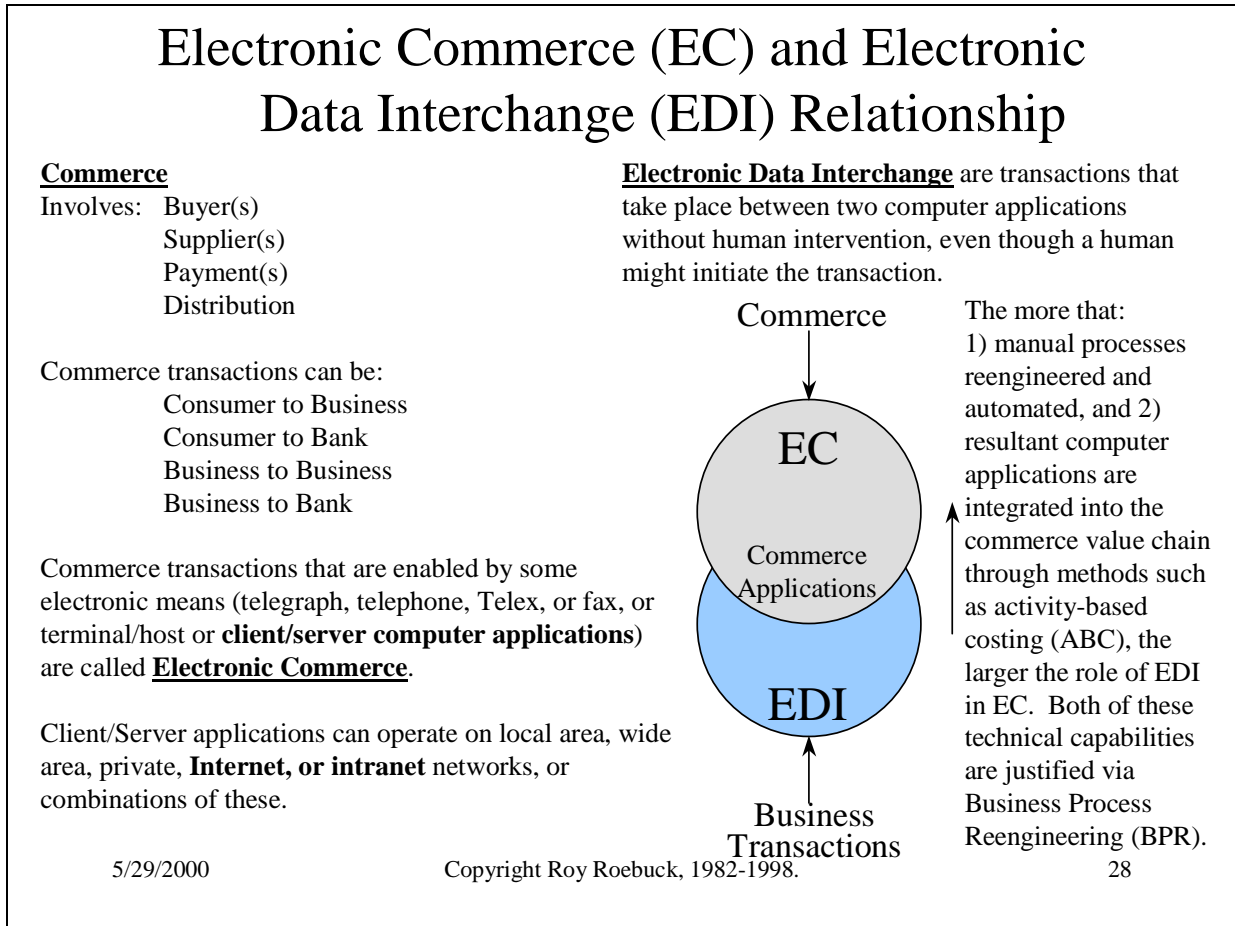


This diagram illustrates where the “data” context of enterprise improvement would interface with the top layers of a technical architecture such as the OSI 7 layer protocol stack.

The top level of the OSI 7 layer model is the “Application” layer, while the bottom layer of the enterprise improvement hierarchy would be an “Application” to enable interactions within the enterprise. This diagram illustrates the process of managing from the highly conceptual mission, vision, goal, etc., to the highly tangible, network circuit, device, etc. The GEM would manage any layer of this model to provide information to the enterprise and services to our customers. The GEM will incorporate this perspective, encompassing cultural, business, process, and technical elements.

Different information products in one context would interact with information products in another context via the implemented technical architecture, the information infrastructure.

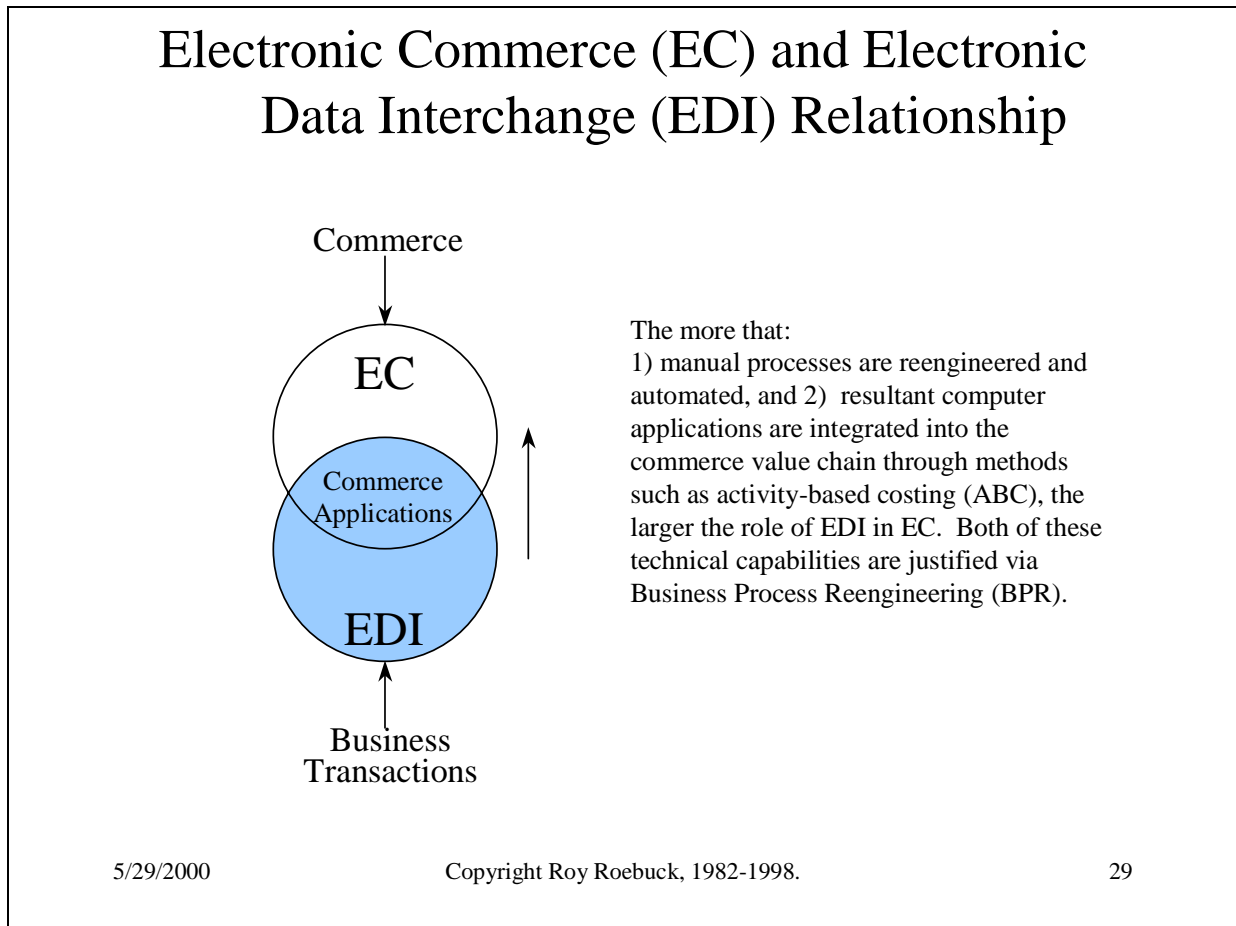
28. Electronic Commerce (EC) and Electronic Data Interchange (EDI) Relationship



This diagram illustrates the capability known as Electronic Commerce in relation to the capability known as Electronic Data Interchange.

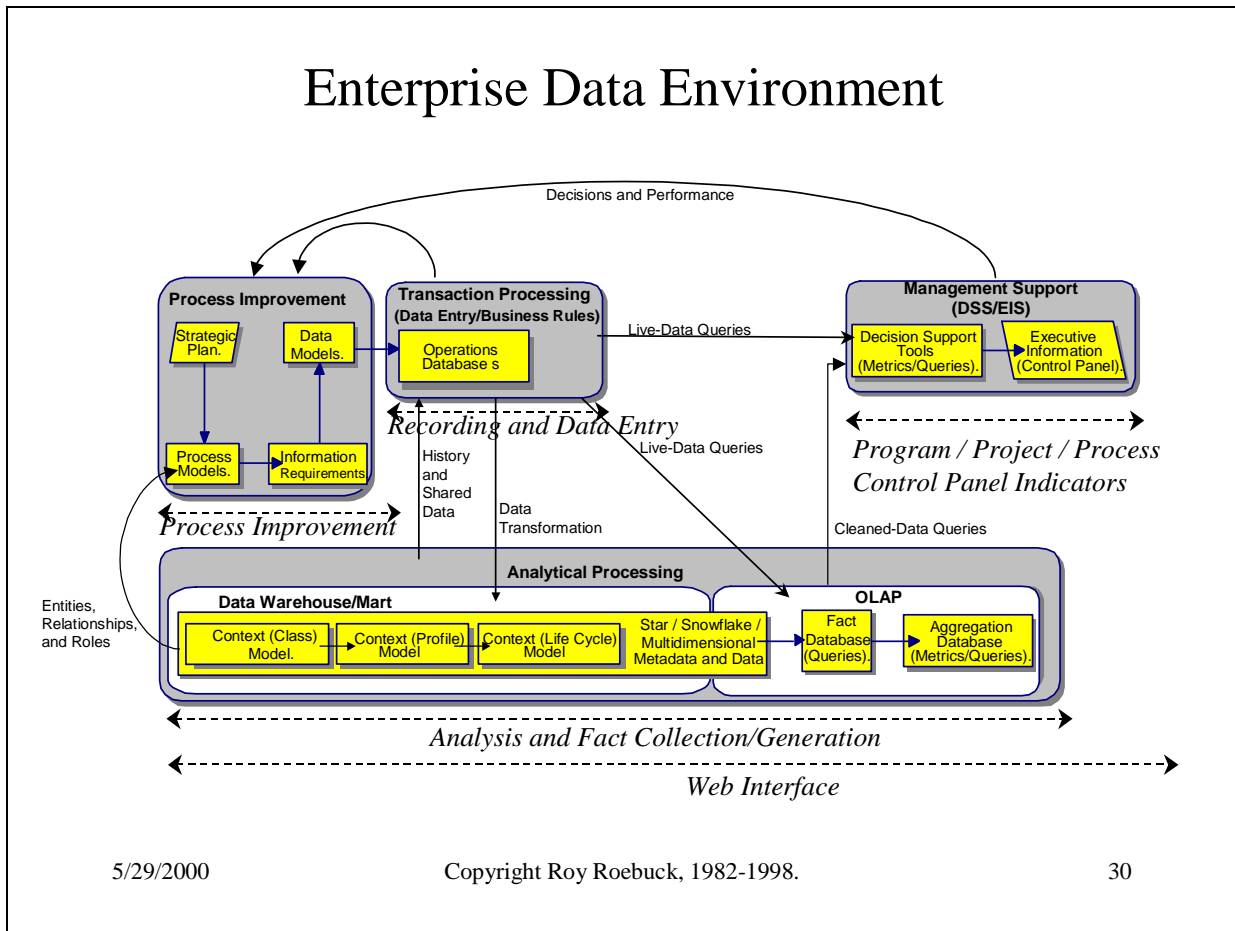
EC uses the information infrastructure between organizations to enable EDI for commercial purposes.

29. Electronic Commerce (EC) and Electronic Data Interchange (EDI) Relationship



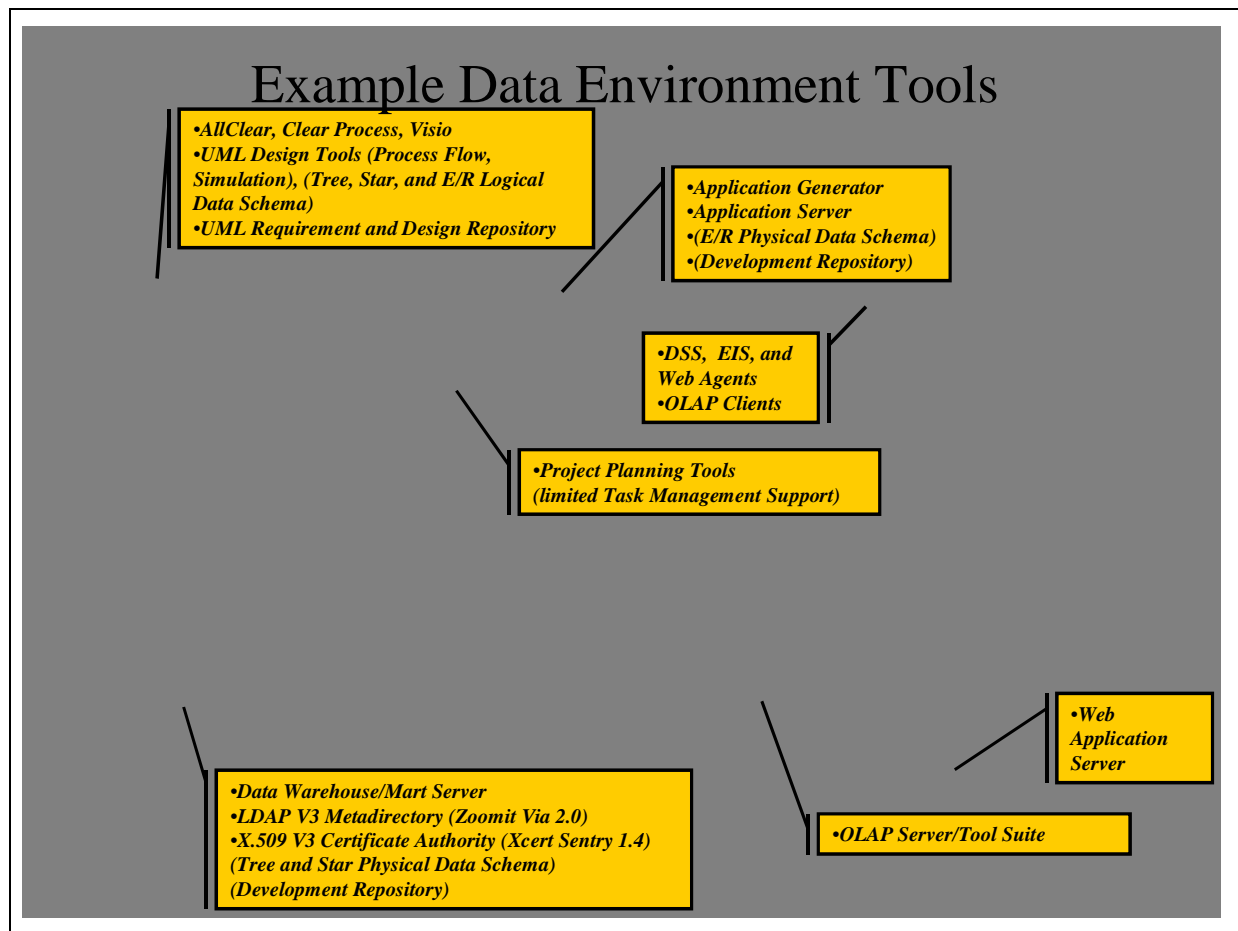
This diagram illustrates the intersection of Electronic Commerce and Electronic Data Interchange.

30. Enterprise Data Environment



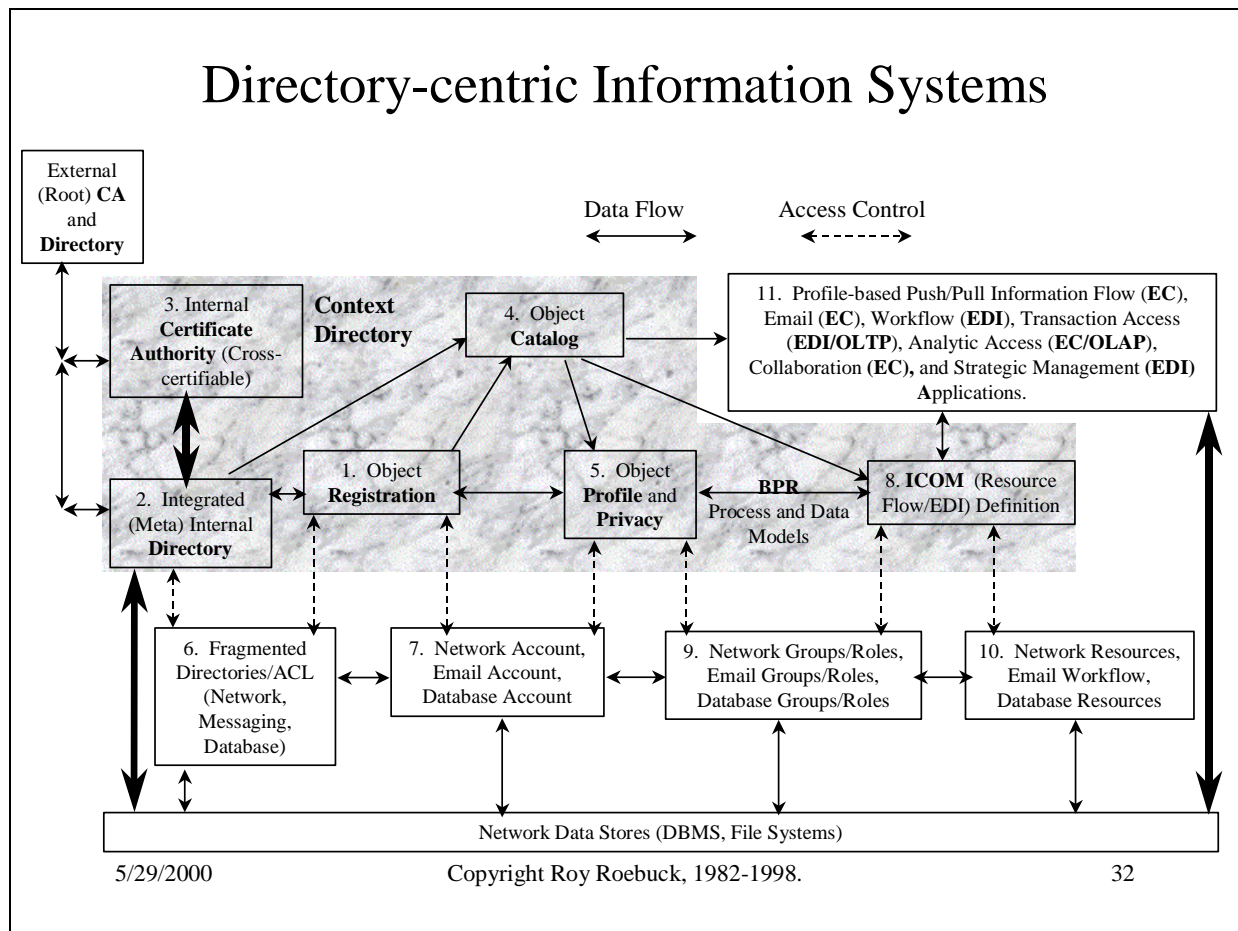
This diagram illustrates the data environment that could result from the full implementation of the Framework for Improvement.

31. Example Data Environment Tools



This diagram identifies some current tools that can be used to provide the corresponding data environment component.

32. Directory-centric Information Systems



This diagram illustrates the interfaces between the elements of a directory-centric management environment such as the GEM. Context technology is the combination of directory, digital certificate, file system, database, and network technologies which provide the functionality of integrating catalog, profile, transaction, life cycle management, analysis, and sensor capabilities. Context is maintained in this environment through the combined use of both globally-unique and decimal classification database keys.

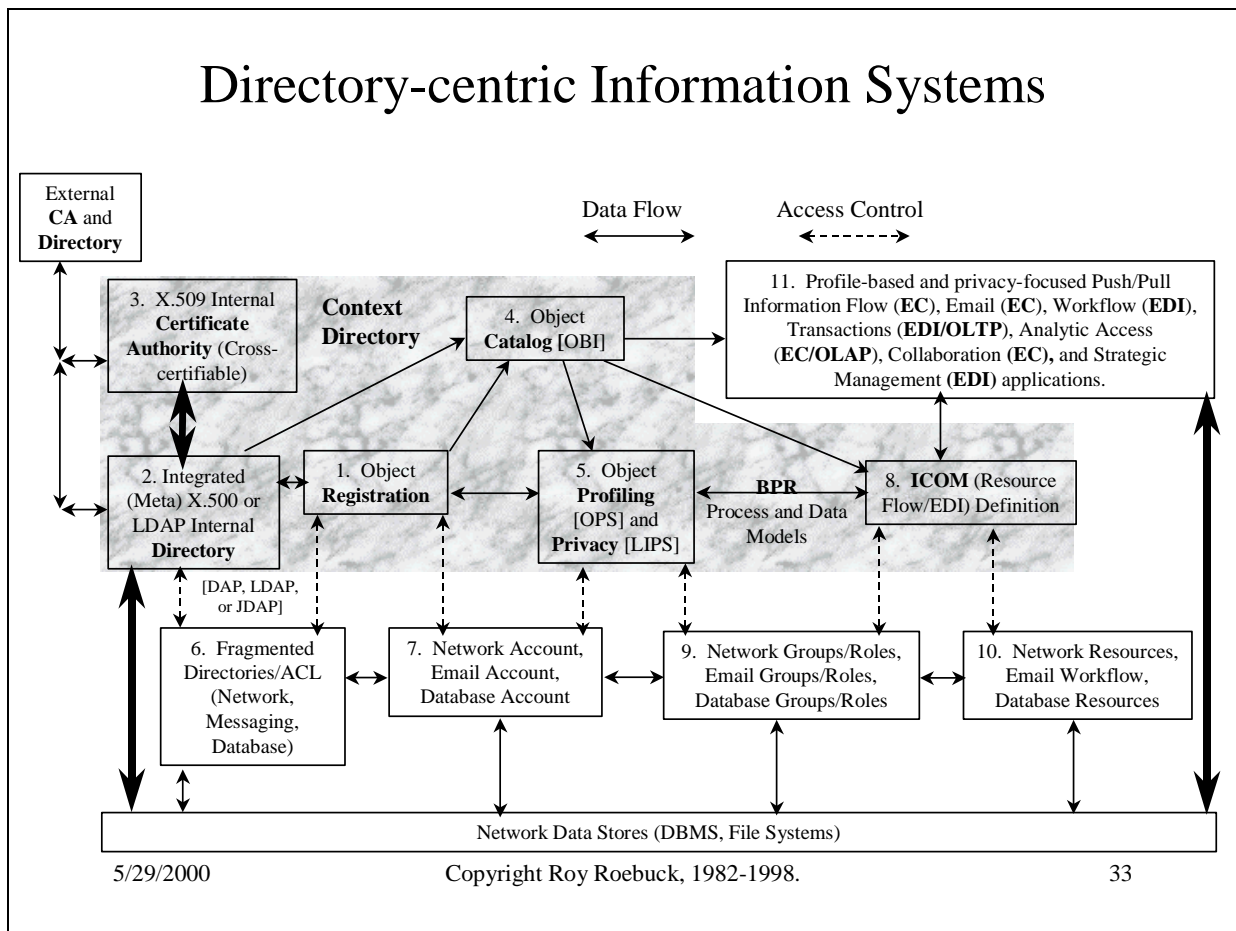
The numbered steps in the diagram follow the path towards secure-access to network applications.

An authority (1) registers a person or other resource by entering their name in the (2) corporate directory. The registration authority is already “trusted” by a higher “certificate authority” or CA, so a (3) digital certificate for the newly registered object is generated and placed into the directory for the new object (person, etc.) to collect under password control. When the object is registered in the directory, it is also placed in the directory-supplement (4) catalog to allow entry of more detailed information about the object (e.g., a person’s resume and a skill matrix, or an electronic instrument’s serial number and maintenance status.) After registration in the directory and catalog, the newly registered person (or initially their supervisor) would begin building a (5) profile of the person’s relevant locations, organizations, work units, functions, processes, or resources (inputs, controls, outputs, mechanisms). As a result of the increasingly more refined profile, the network, email, and database (6) access control lists (ACL) can be set for fine grained access via (7) profile-based accounts, including access to (8) resource (ICOM) allocations, (9) permissions based on profile-identified group and role assignments, and (10) databases and file systems for those

groups and roles. The end result is the registered object's (11) context-relevant application and generation of information, with less information overload.

Through this method, a person gains access to what they've expressed a need for or interest-in from a public source, or what they're authorized to access based on the profile of the work unit (position) they occupy, built by those responsible for that work unit. What the person accesses in private is kept private, while what they professionally access is partially visible to those with direct authority over their work or who collaborate with them, all maintained by digital certificate and directory technology.

33. Directory-centric Information Systems



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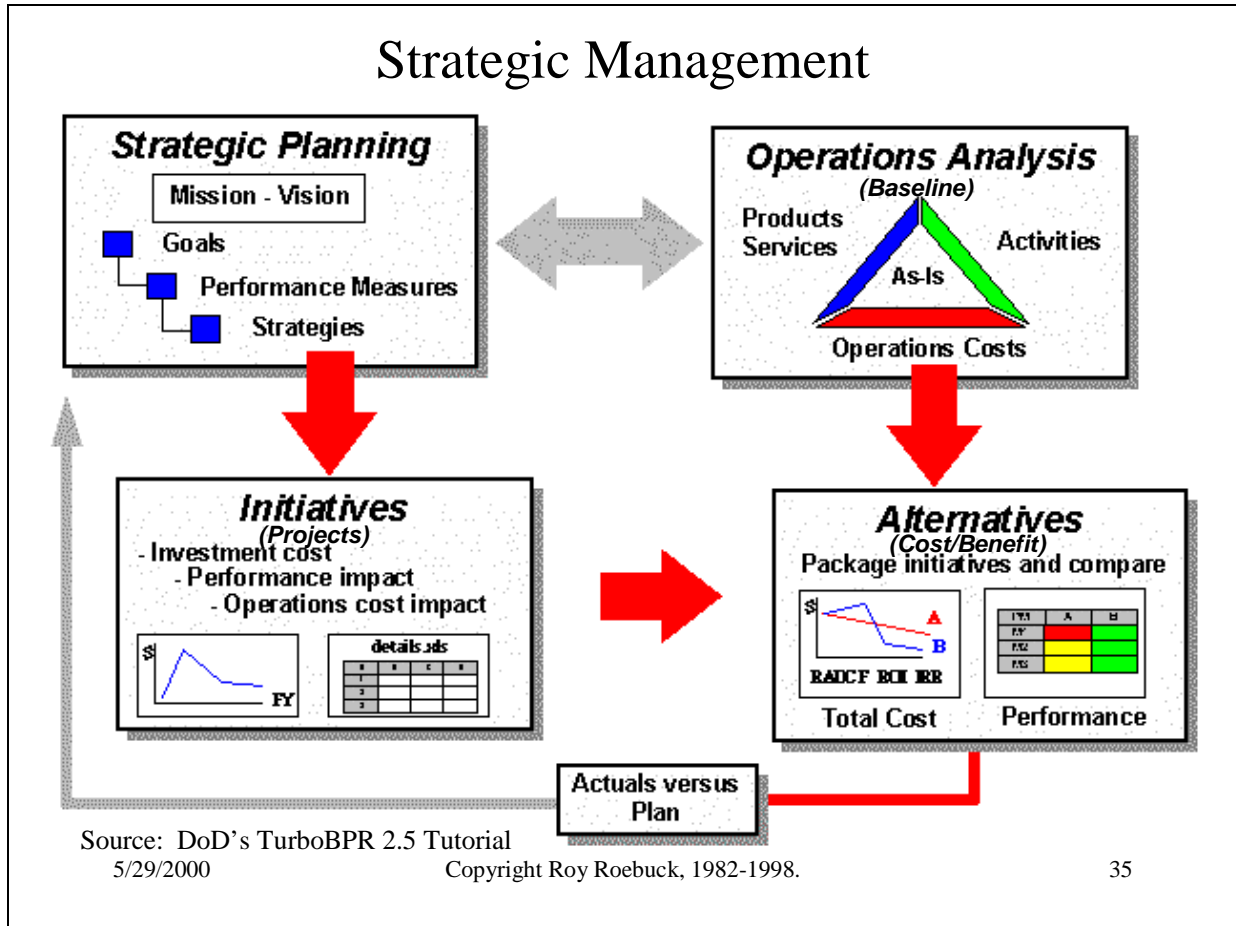
Through this method, a person gains access to what they've expressed a need for or interest-in from a public source, or what they're authorized to access based on the profile of the work unit (position) they occupy, built by those responsible for that work unit. What the person accesses in private is kept private, while what they professionally access is partially visible to those with direct authority over their work or who collaborate with them, all maintained by digital certificate and directory technology.

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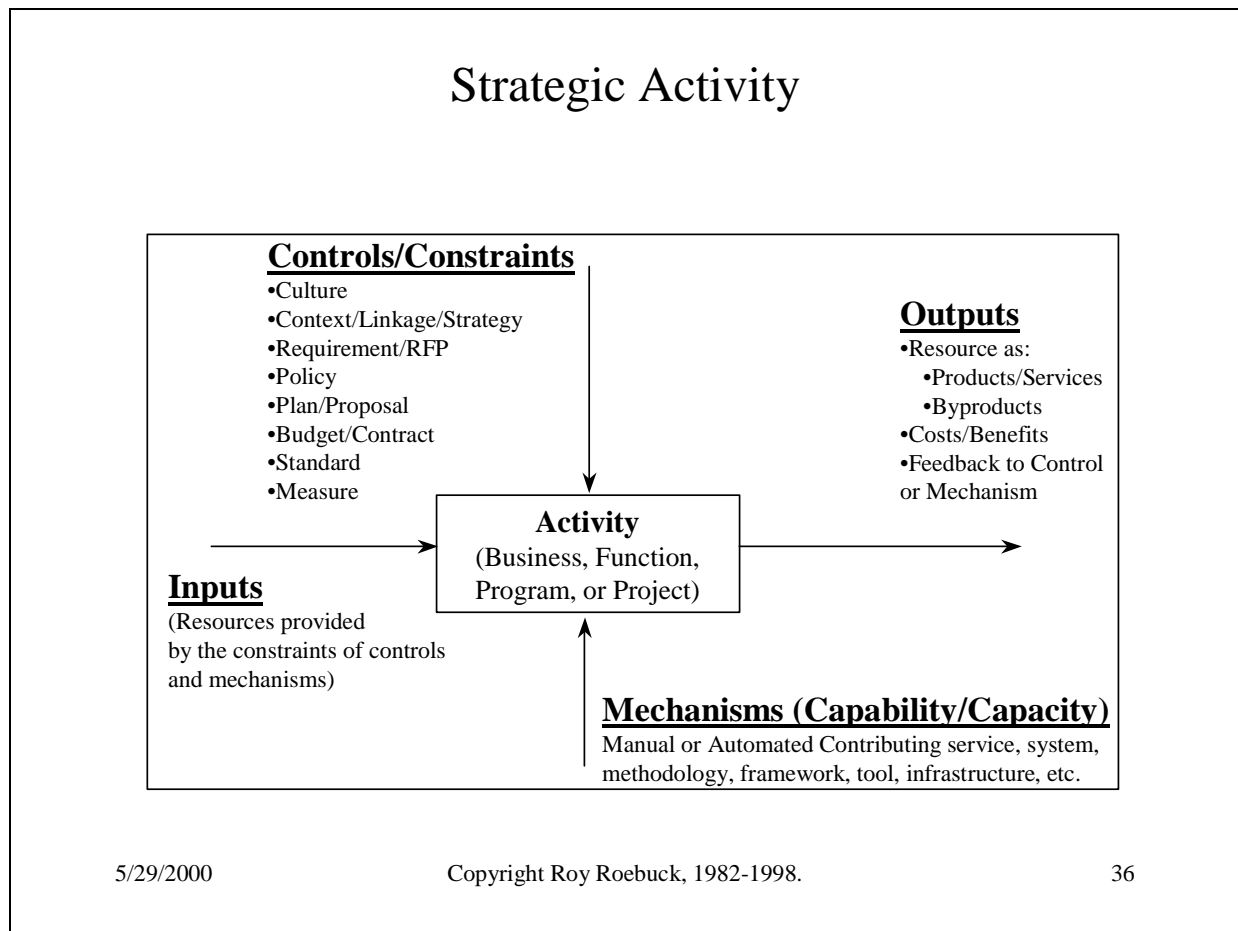
35. DoD Strategic Management Model

(From TurboBPR Product)



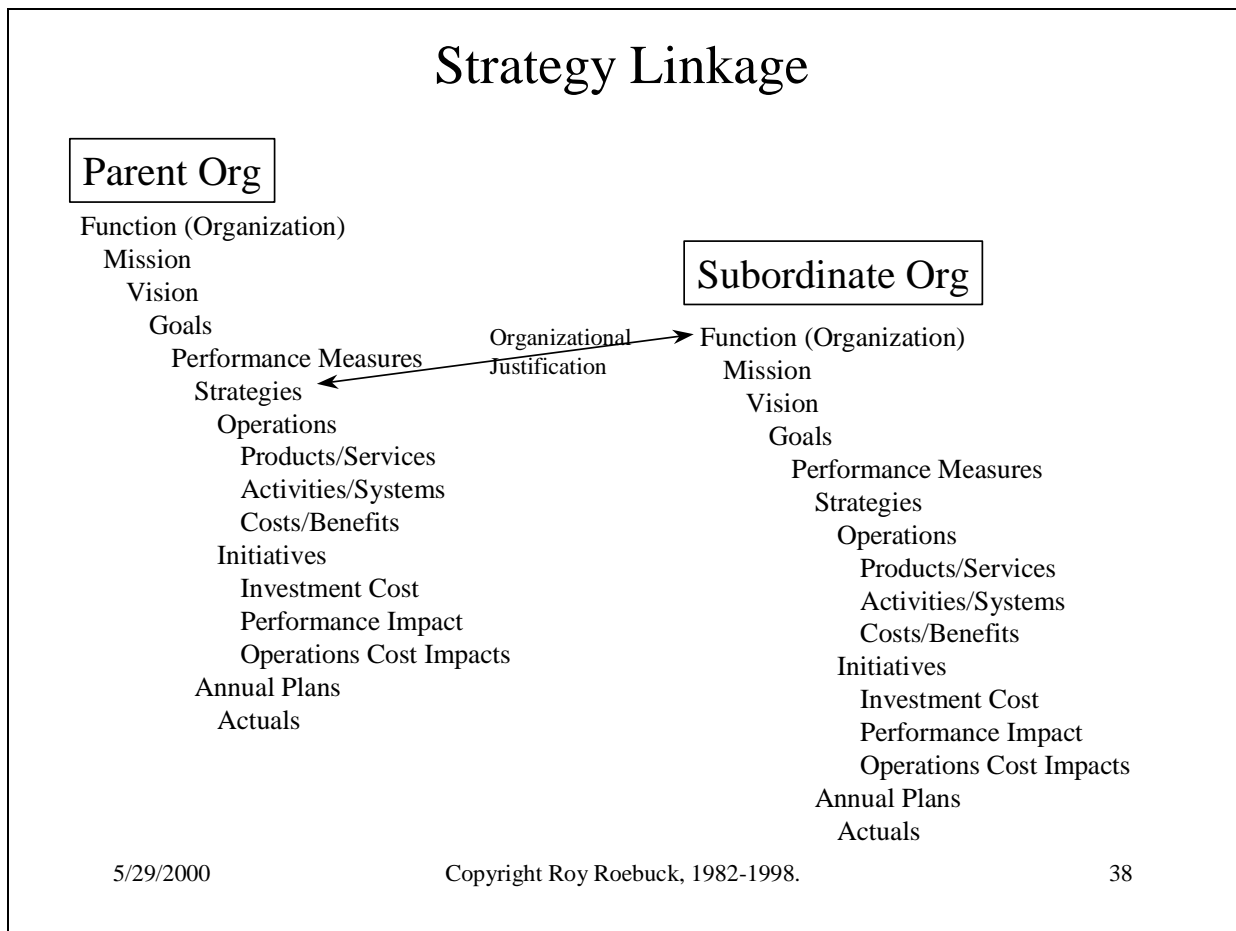
This diagram is from the U.S. Department of Defense software program known as TurboBPR. It illustrates the major components of the strategic management process, which was designed to support, as well as subsequent high level process modeling, and subsequent detailed activity-based-costing.

36. Strategic Activity



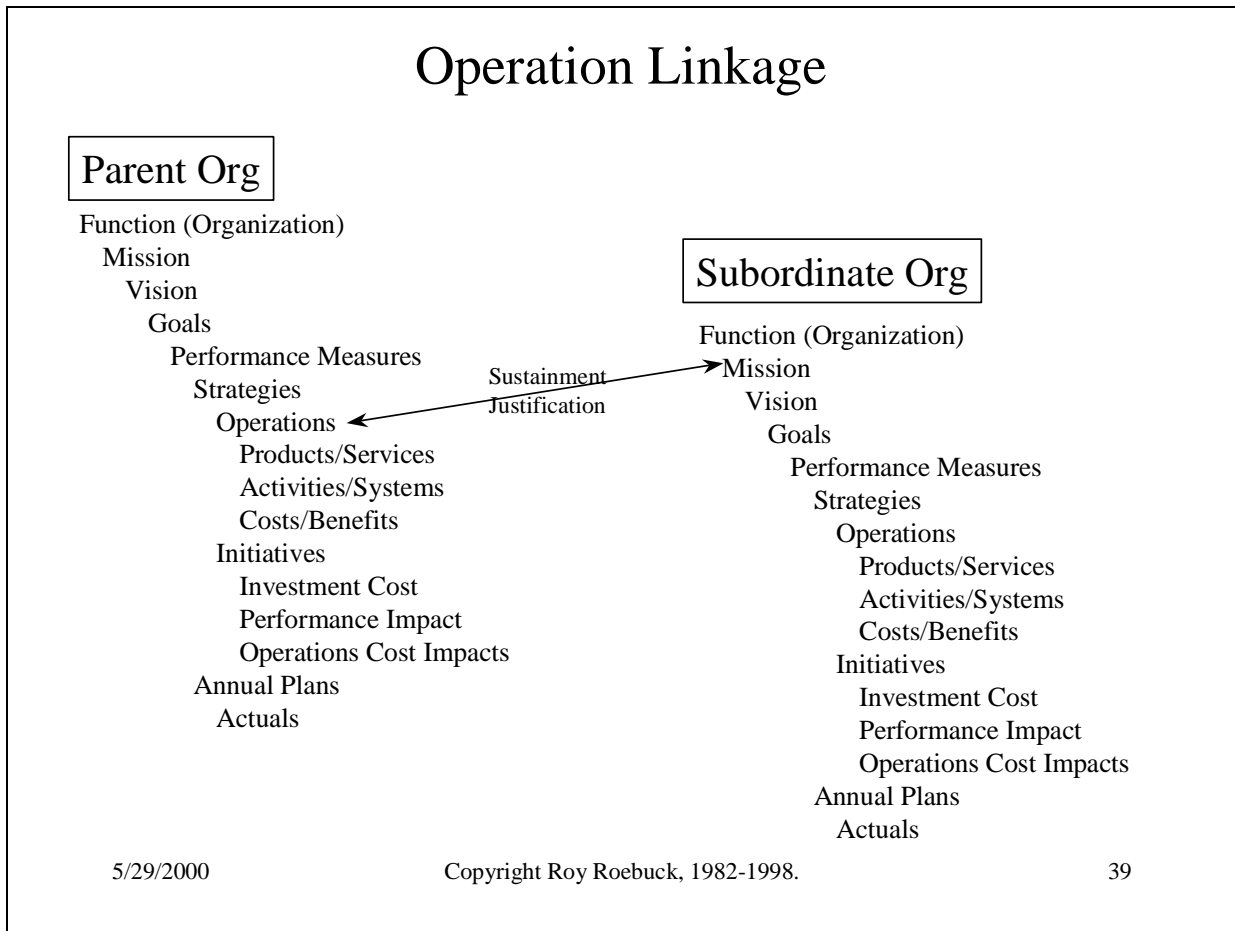
This is a variation of the IDEF0 Function Model illustrating the higher level environmental elements affecting or effected-by an enterprise activity.

38. Strategy Linkage



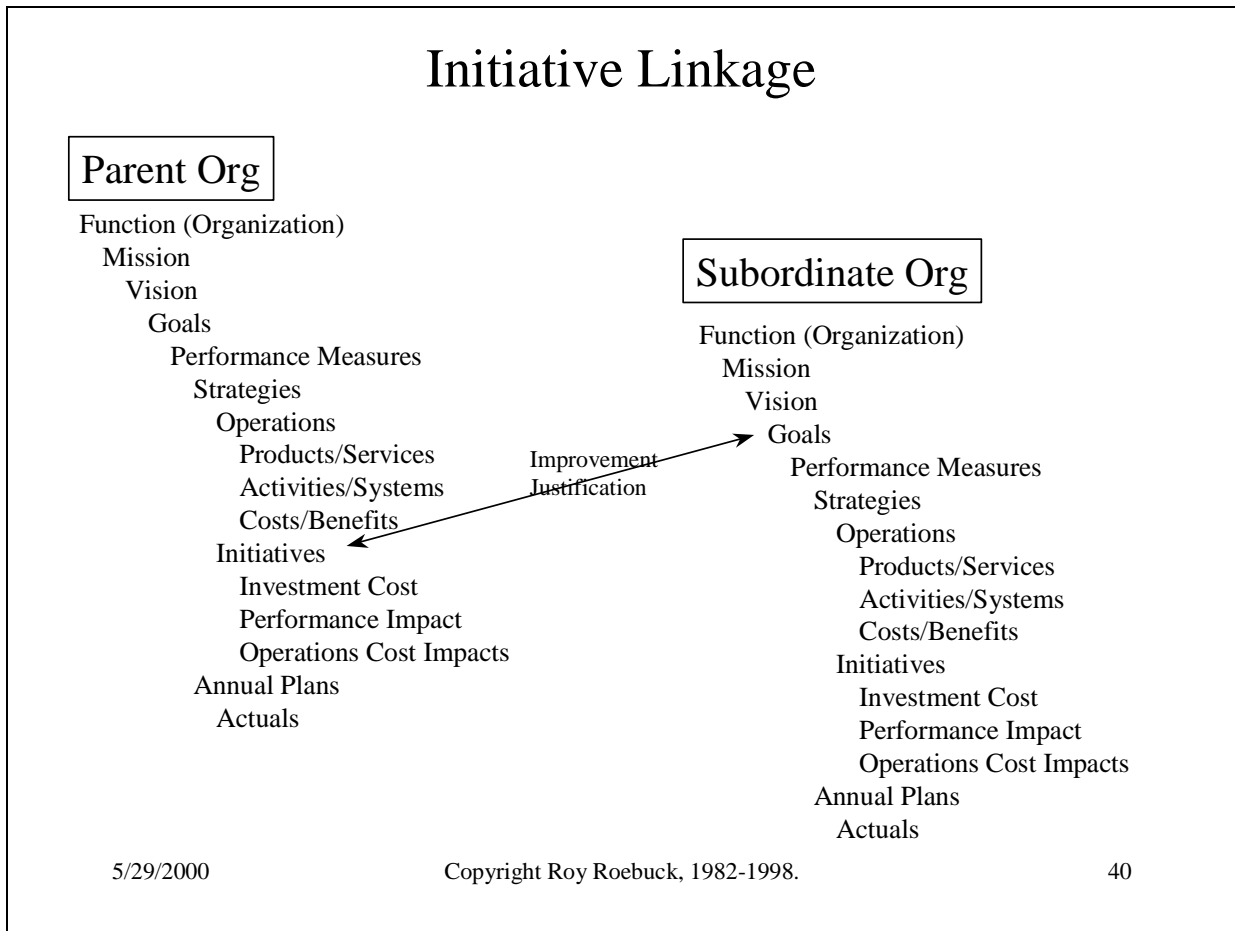
This is a notional illustration to show where a parent organization's strategies might define a subordinate organization's function.

39. Operation Linkage



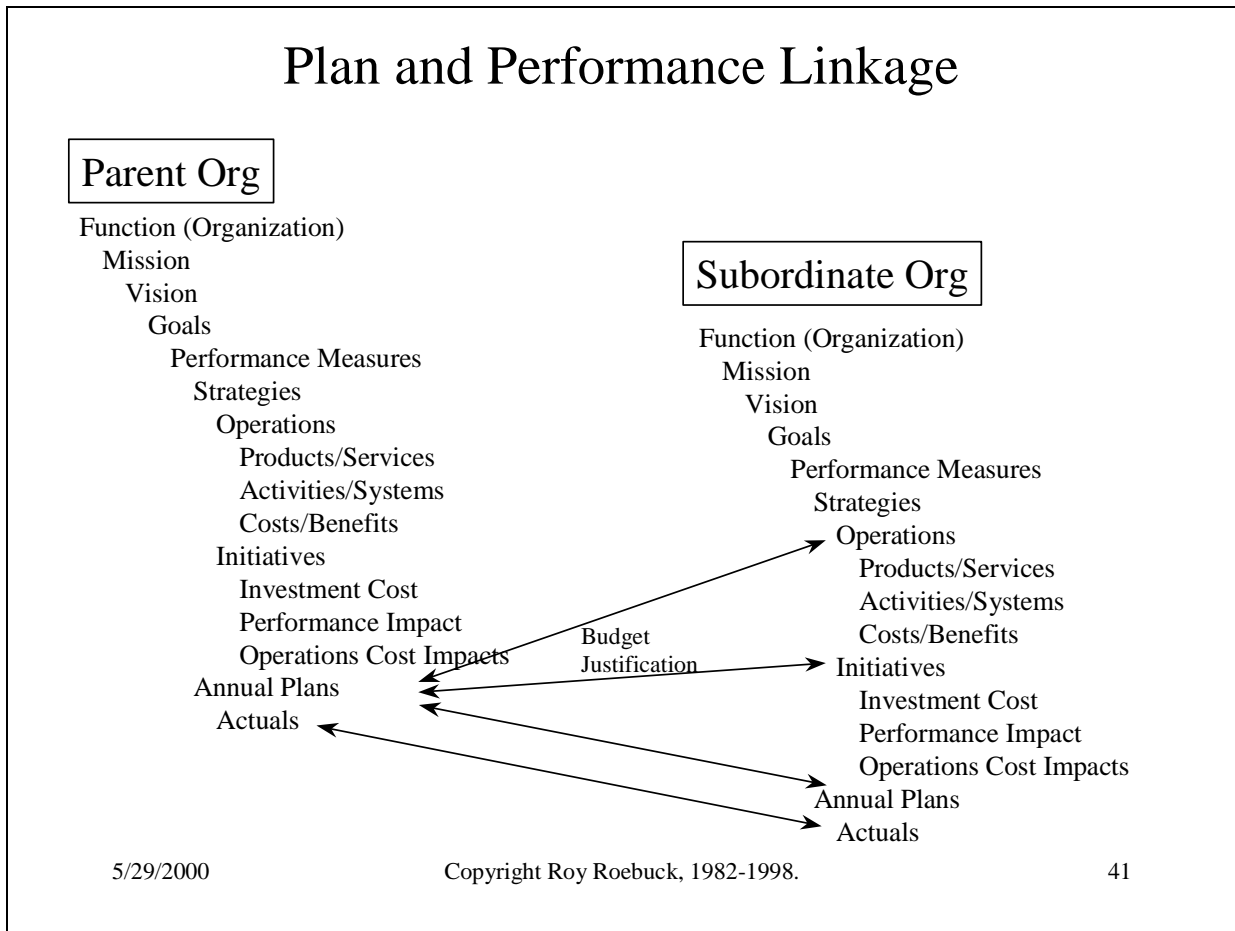
This is a notional illustration to show where a parent organization's ongoing operations might drive a subordinate organization's mission.

40. Initiative Linkage



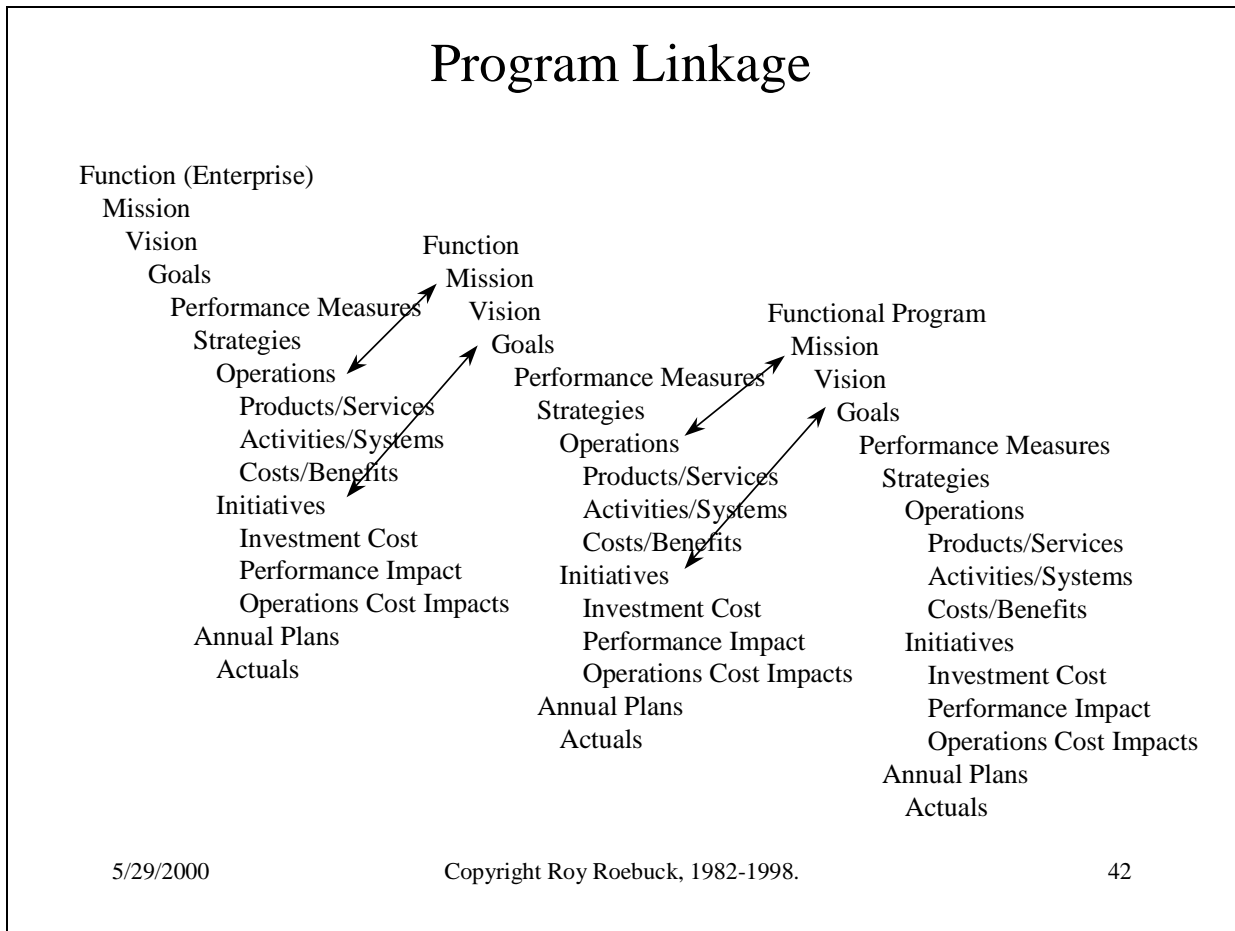
This is a notional illustration to show where a parent organization's initiatives/requirements might drive a subordinate organization's goals.

41. Plan and Performance Linkage



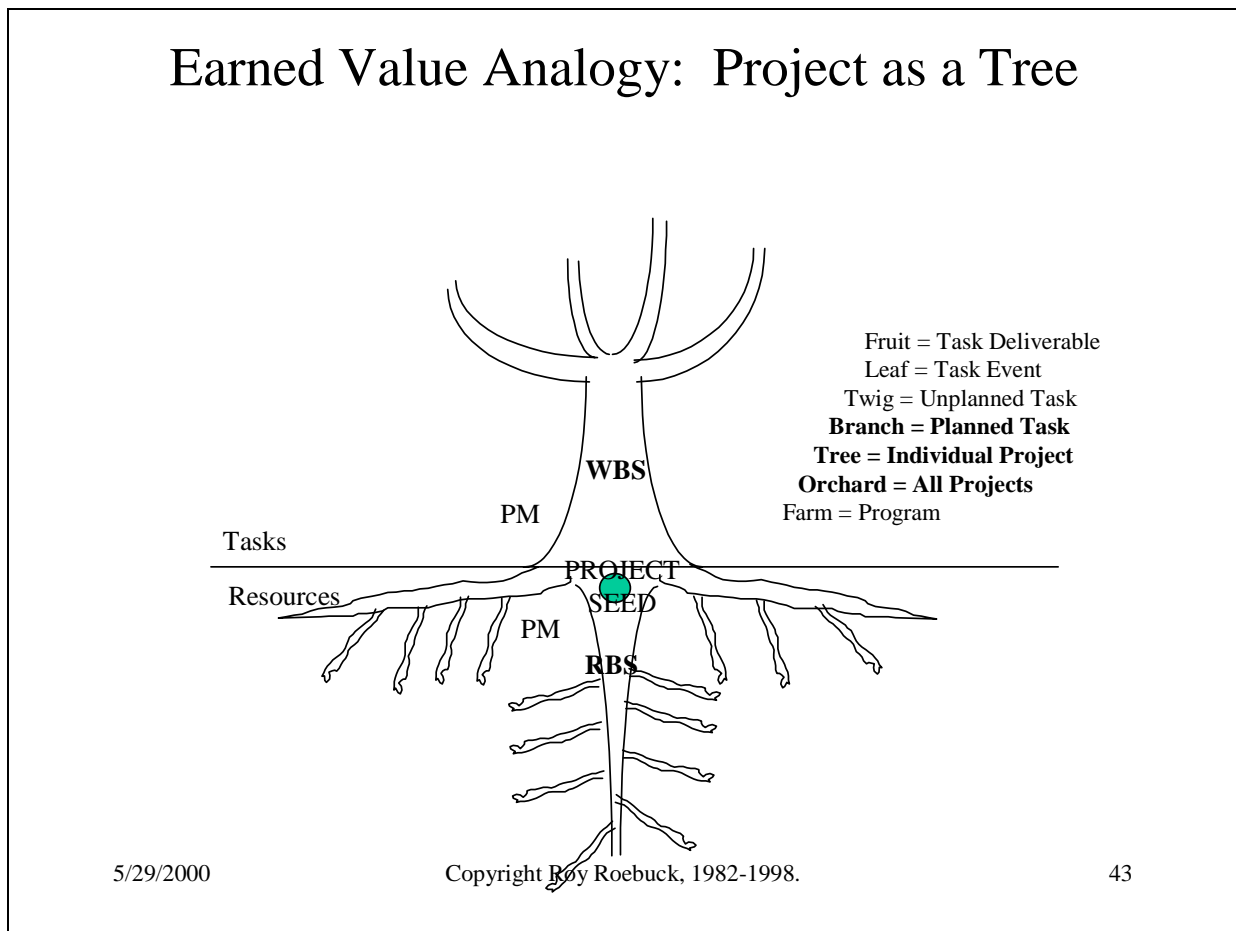
This is a notional illustration to show where a parent organization’s annual plans and reviews might drive a subordinate organization’s operations, initiatives/requirements, plans, and reviews.

42. Program Linkage



This is a notional illustration to show where a parent organization's ongoing operations and new initiatives/requirements might drive a subordinate organization's mission and goals.

43. Earned Value Analogy: Project as a Tree

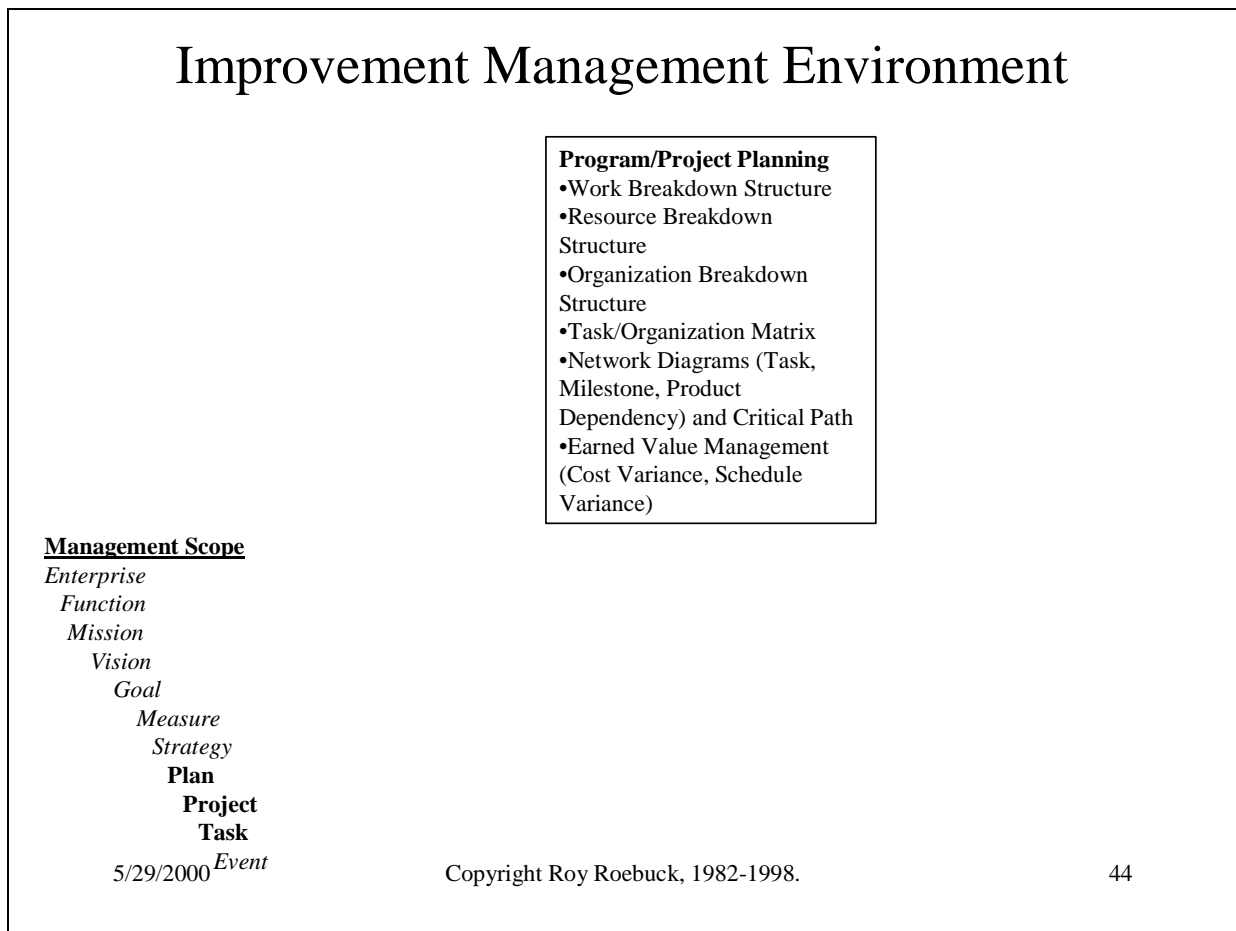


This diagram illustrates a tree structure as the metaphor for a project.

Most think of project management as being about managing tasks and the relationships (dependency, schedule) between them. When resources are not being accounted for or managed as part of the program or project, then task-orientation is sufficient.

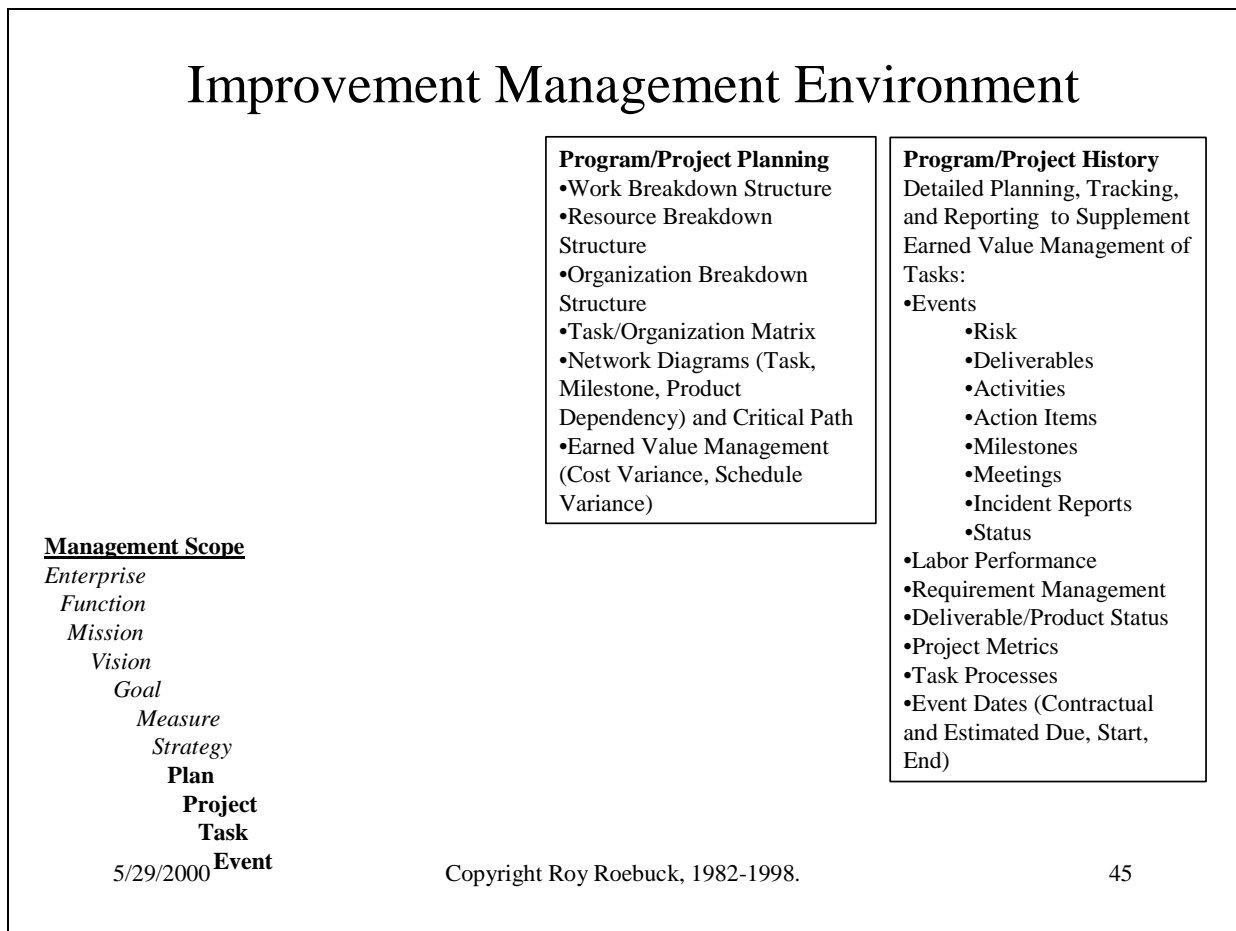
However, advanced project management is more focused on the resources and their planning and utilization.

44. Improvement Management Environment



Projects not directly linked to the organization mission and goals works with the information products in the box shown in the diagram, to manage the bolded elements in the strategic management scope outline.

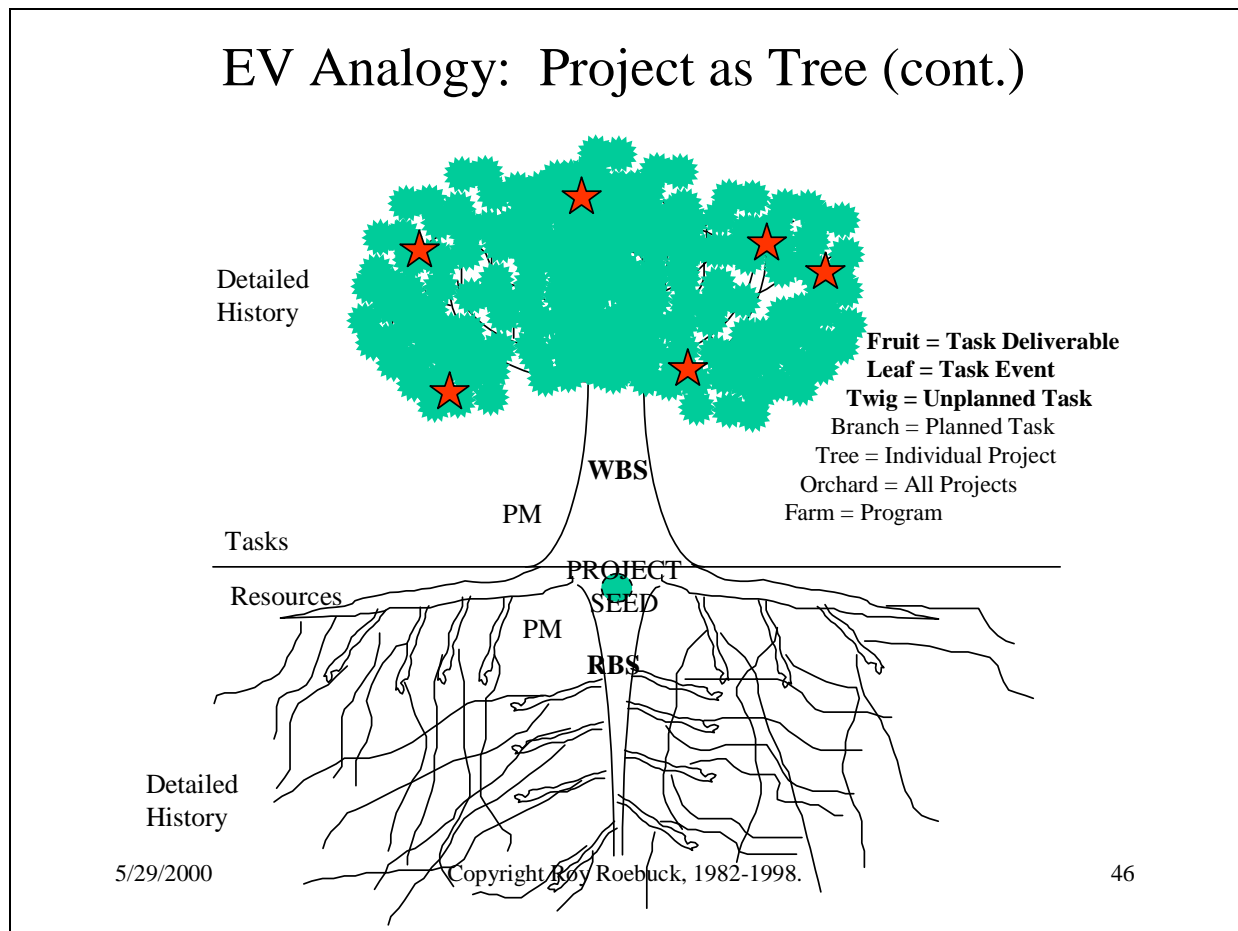
45. Improvement Management Environment



Projects not directly linked to the organization mission and goals works with the information products in the box shown in the diagram, to manage the lower bolded elements in the strategic management scope outline.

After the project is planned, the execution of the project requires detailed tracking of events over time. This is necessary to identify and resolve variance from project budget (resource plan) or schedule (time plan).

46. EV Analogy: Project as Tree (cont.)

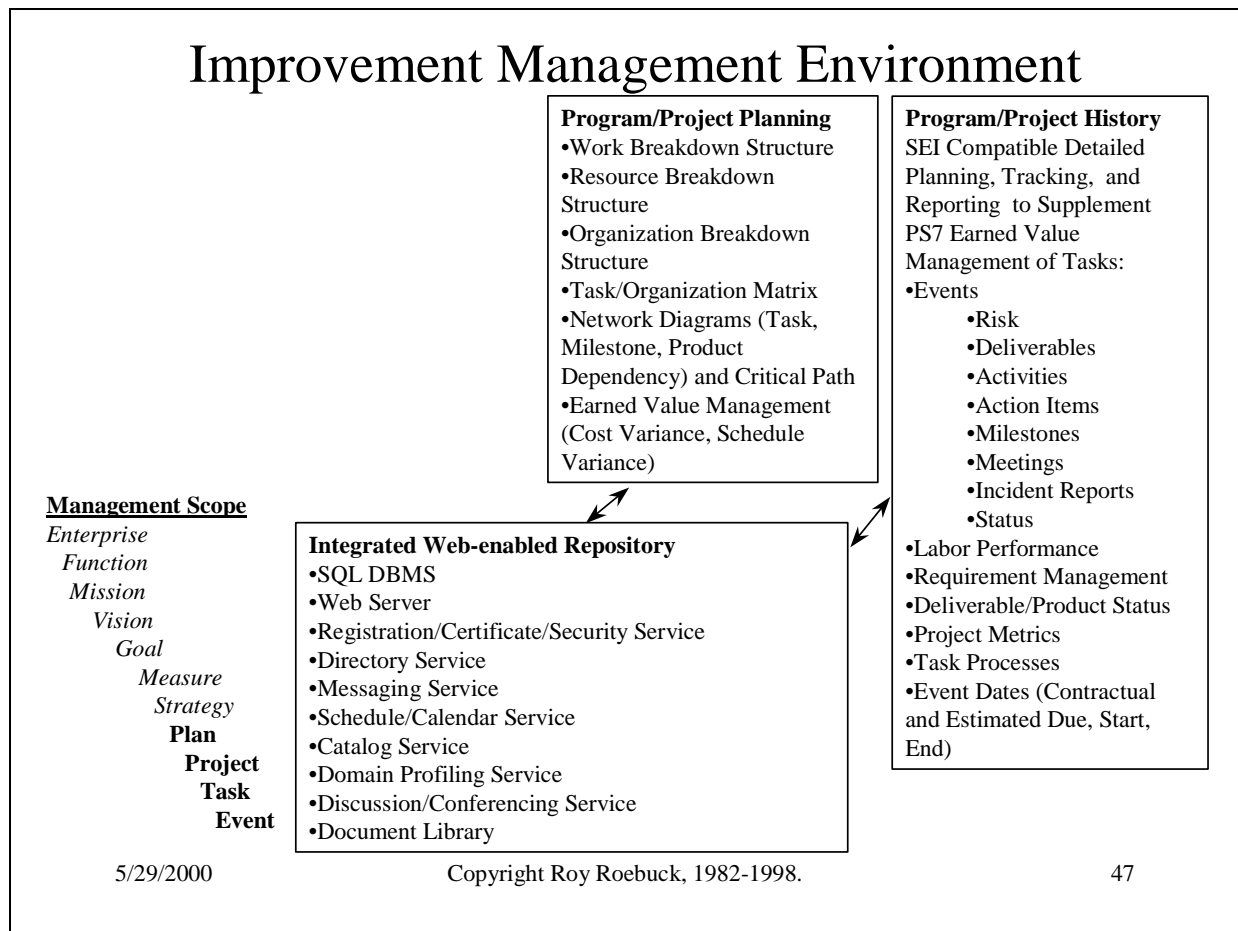


This diagram illustrates a tree structure as the metaphor for a project.

Most think of project management as being about managing tasks and the relationships (dependency, schedule) between them. When resources are not being accounted for or managed as part of the program or project, then task-orientation is sufficient.

However, advanced project management is more focused on the resources and their planning and utilization. For the tree's fruit, the task deliverables, to bloom and ripen, they require sufficient quality and quantity of predecessor resources. If the resources are not right, the time of the growing season will yield poor or no fruit.

47. Improvement Management Environment

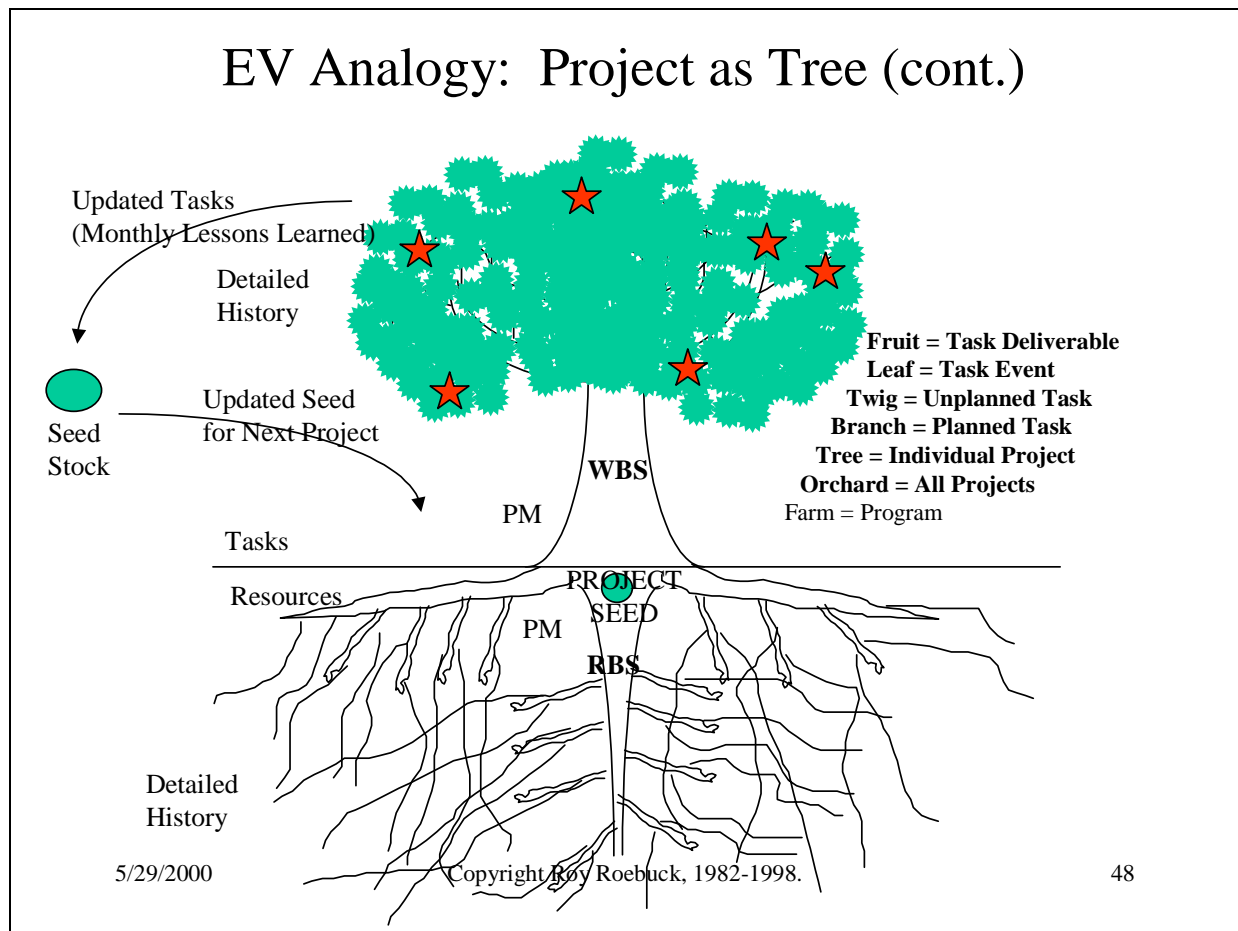


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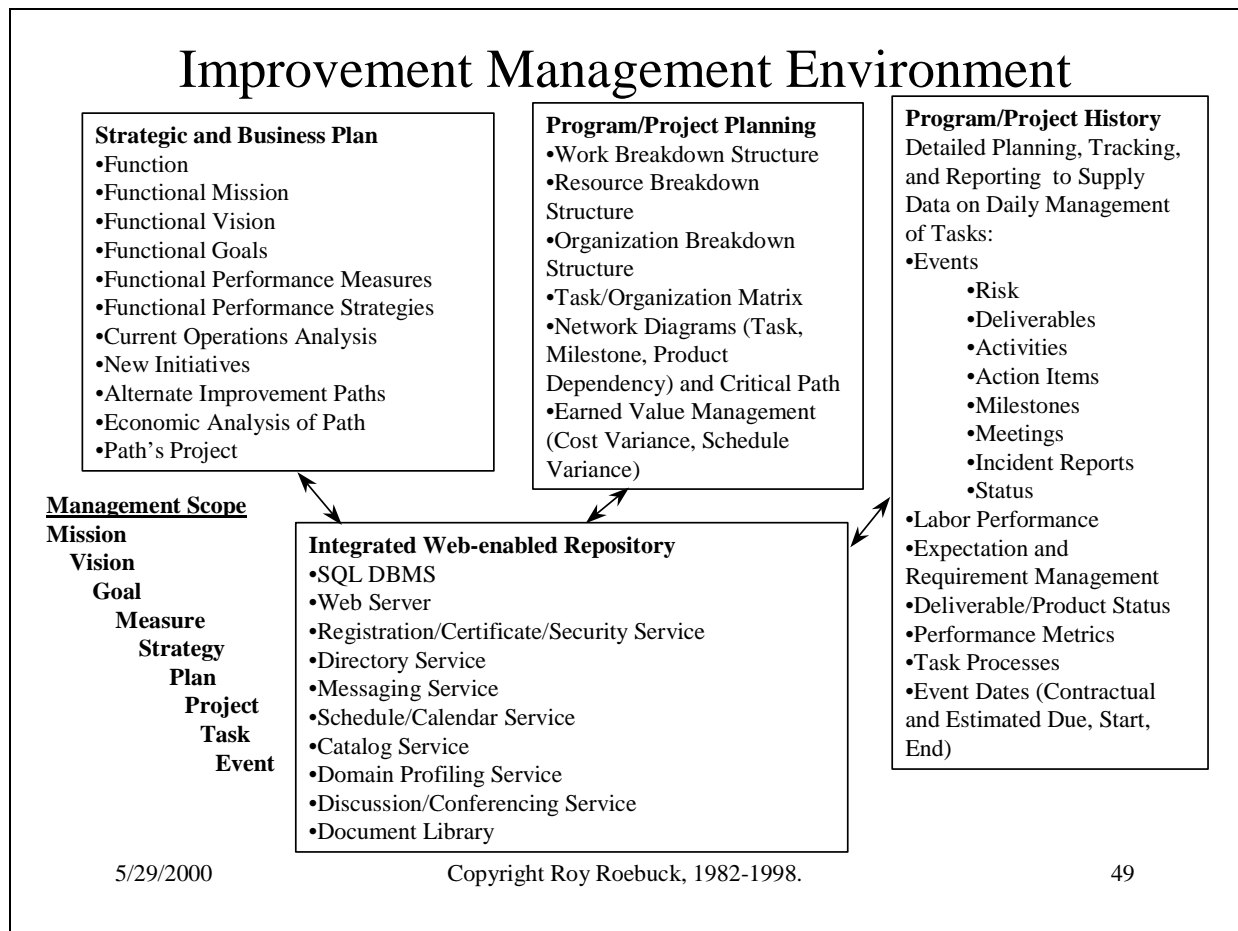
For project planning and tracking to be performed effectively and efficiently, especially in a distributed effort, technology that links the two management processes together must be made available and used.

48. EV Analogy: Project as Tree (cont.)



This diagram illustrates how a successful (on schedule, on budget) project can serve as the seed for the next similar project. The knowledge and experience recorded can be reapplied.

49. Improvement Management Environment

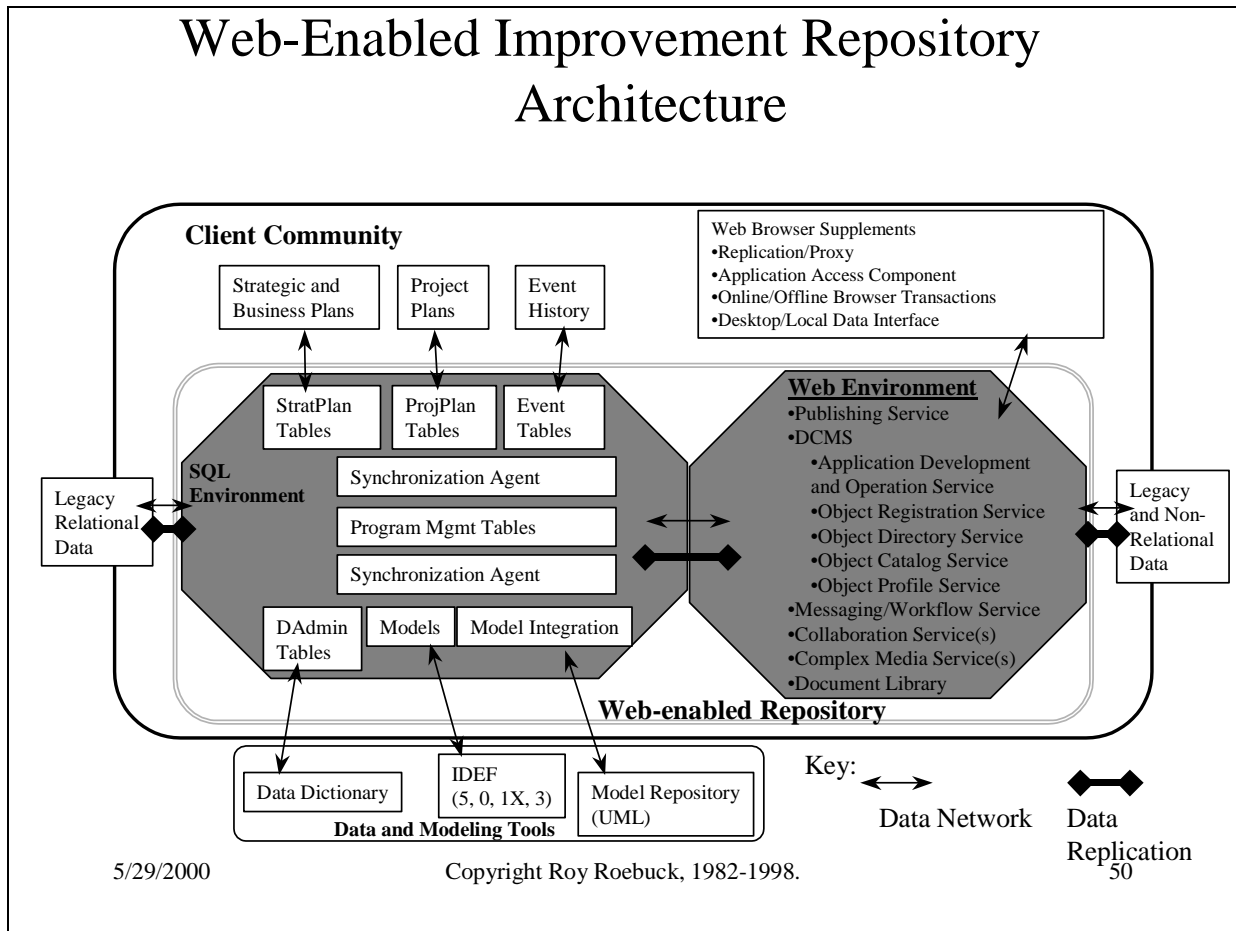


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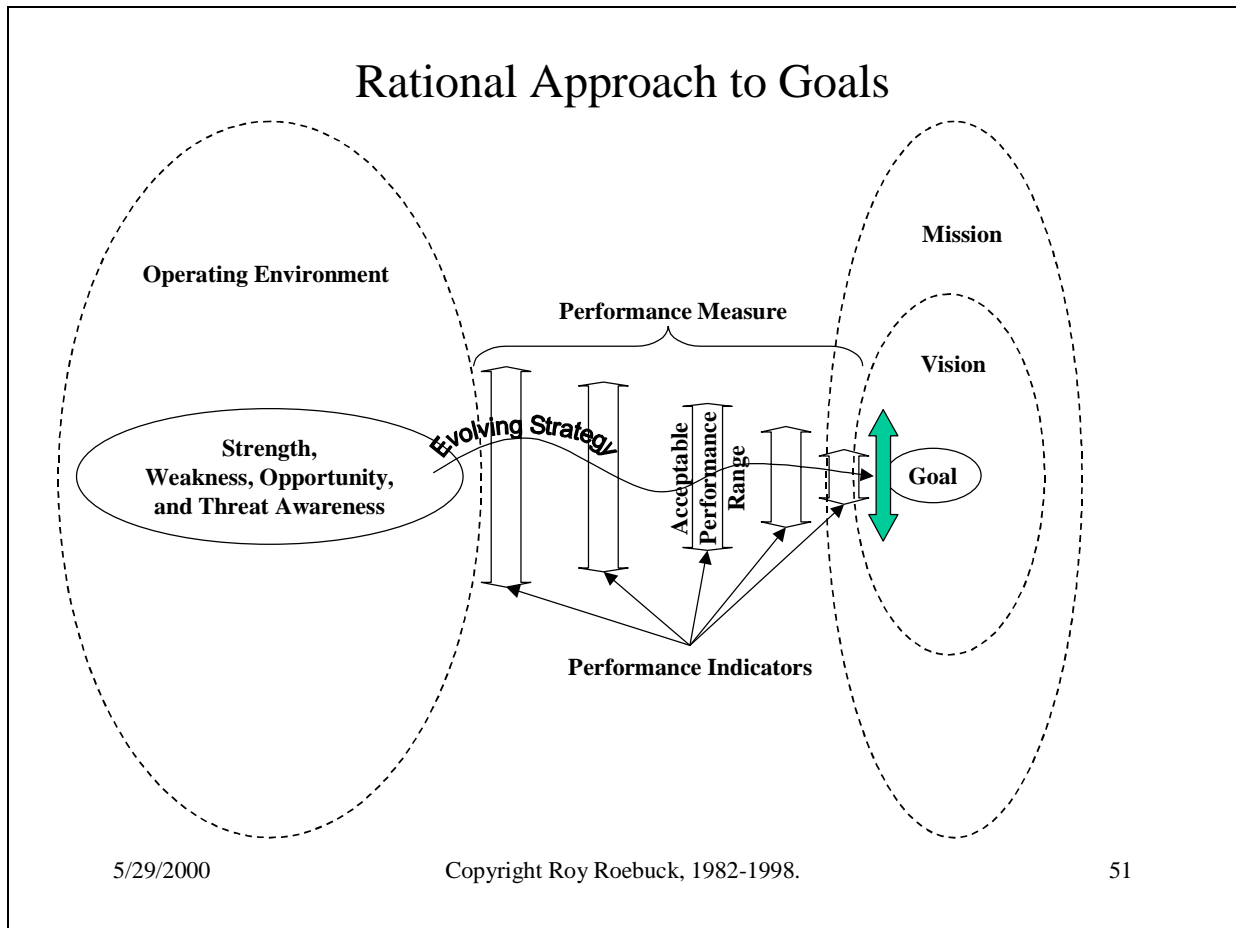
For project planning and tracking to be performed effectively and efficiently, especially in a distributed effort, technology that links the two management processes together must be made available and used.

50. Web-Enabled Improvement Repository Architecture



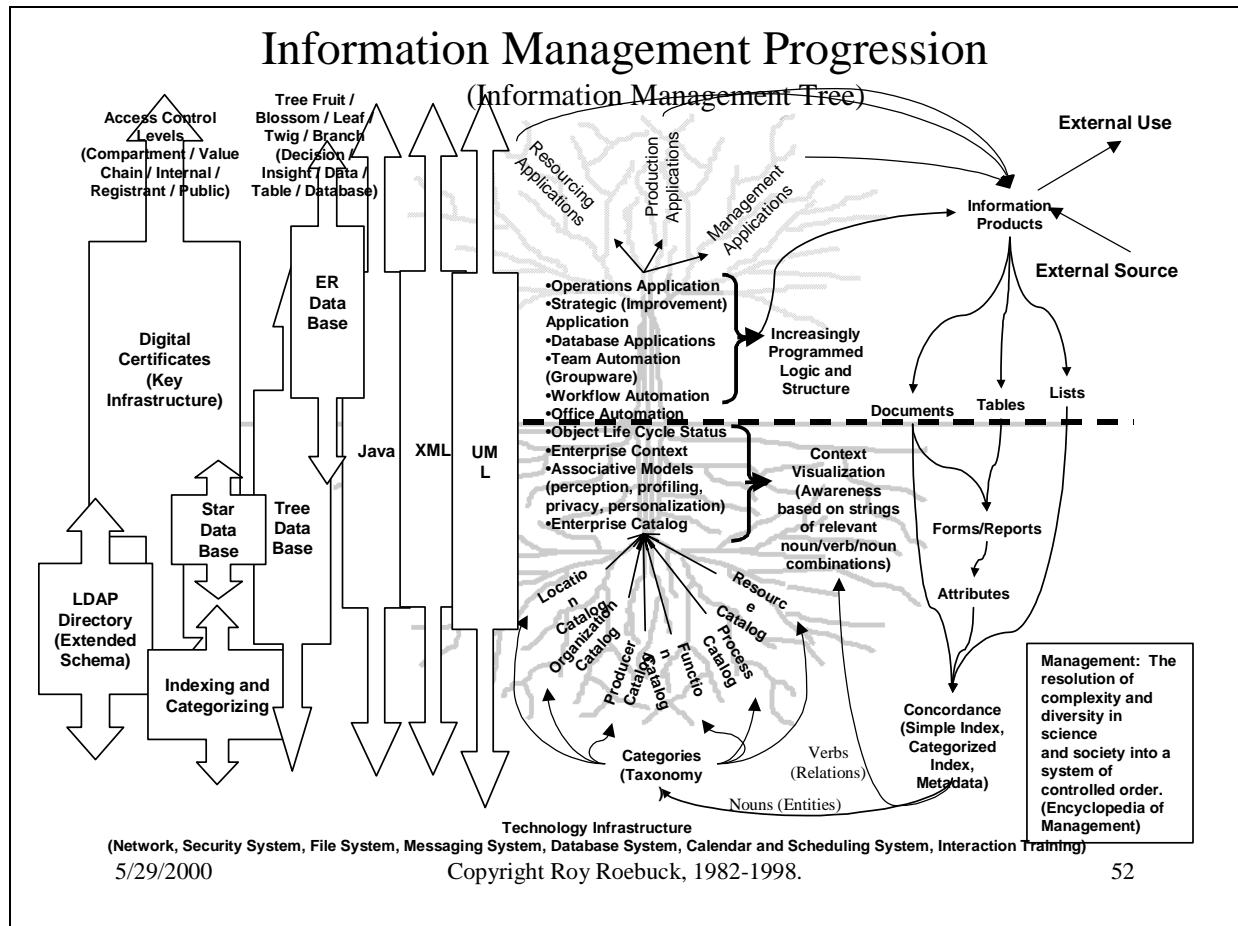
This diagram illustrates the relationships between the variety of technologies that could provide an enterprise improvement management environment.

51. Rational Approach to Goals



This diagram illustrates a simplified view of a strategic management process. It resembles, and is equivalent to, the operations planning notation that has been used by the world's military organizations for centuries.

52. Information Management Progression (Information Management Tree)



This diagram illustrates technical terms and concepts of information recycling, using what I call the Unitary/Ecological (UE) approach. Note the position of the various directory, database, digital certificate, and indexing technologies relative to the tree structure in the center.

Visualize the progression/evolution of Information Systems from individual grass stalks (separate data, metadata and logic), to a group of shrub-like plants that intertwine their roots (loosely integrated data, metadata, and logic), to a full shrub with no trunk but a common root system (loosely integrated data, metadata and logic), to a tree with multiple forks from one root structure (applications built from shared data and metadata, with some shared logic), to a tree with a single trunk and single root structure (broadly and appropriately shared knowledge and highly integrated data, metadata, and logic).

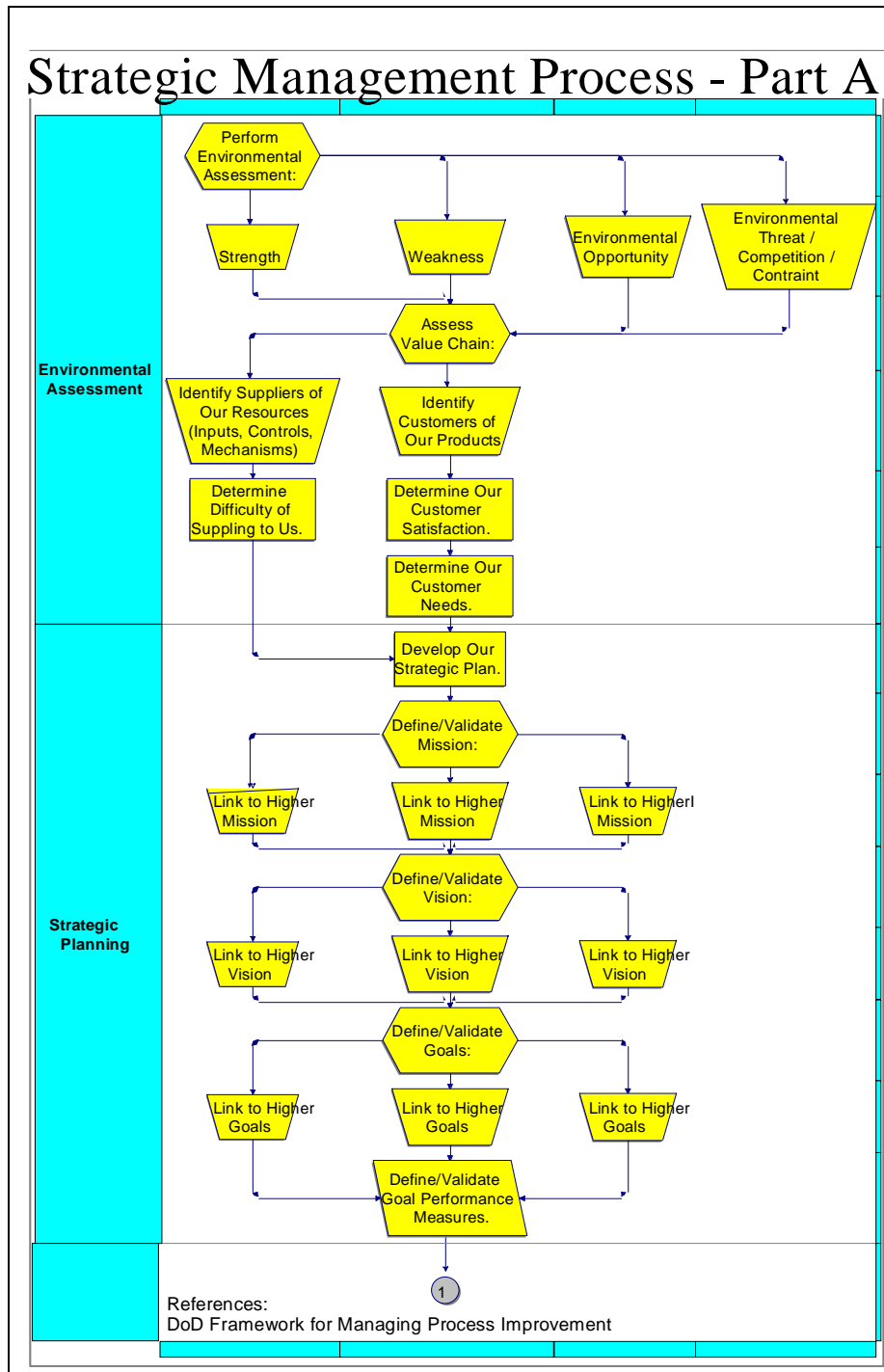
I view ERP and other database applications as forks and branches of a tree. I've called the three base branches Executive, Production, and Resourcing functions, as shown in this diagram. ERP would be a subbranch of the Resourcing function branch.

The difference between ERP and legacy applications is that ERP applications (at least from the same vendor) share a common larger fork (applications built from shared data and metadata, with some shared logic) among themselves, while legacy applications are like grass stalks without a common root.

I believe the direction that Enterprise is going is to have all database applications (branches) connected to the same tree trunk (shared context intelligence database) growing from the same tree roots (shared and dynamic data warehousing based on a General Enterprise Model -GEM). These are then nourished by the recycling of

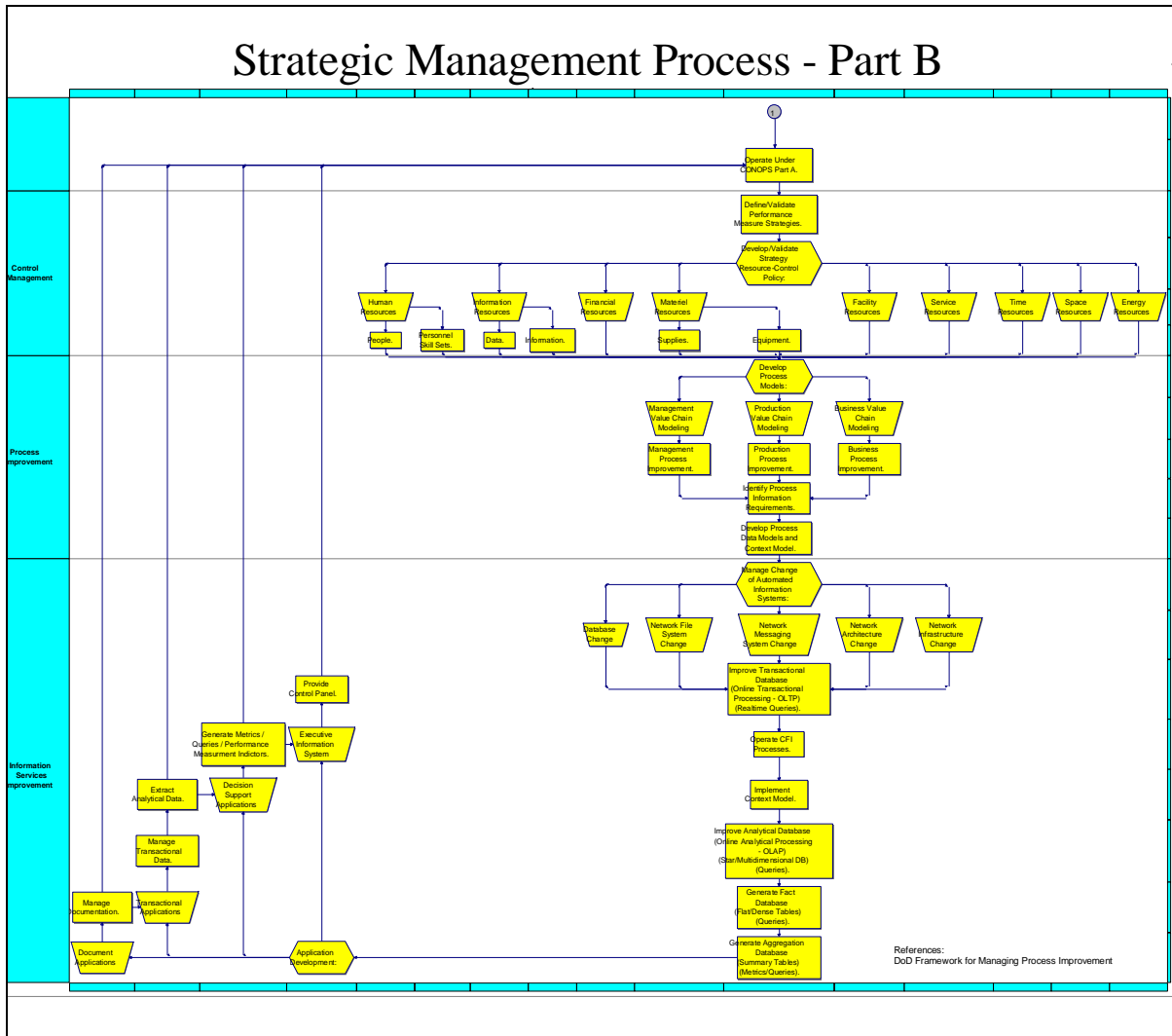
information products falling from the canopy of application branches, software unit stems, and form/report/document leaves above, or are nourished by external information products.

53. Strategic Management Process - Part A



This flow diagram illustrates the activities involved in the initial phases of strategic management, encompassing performing an environmental assessment, and then conducting the requisite strategic planning.

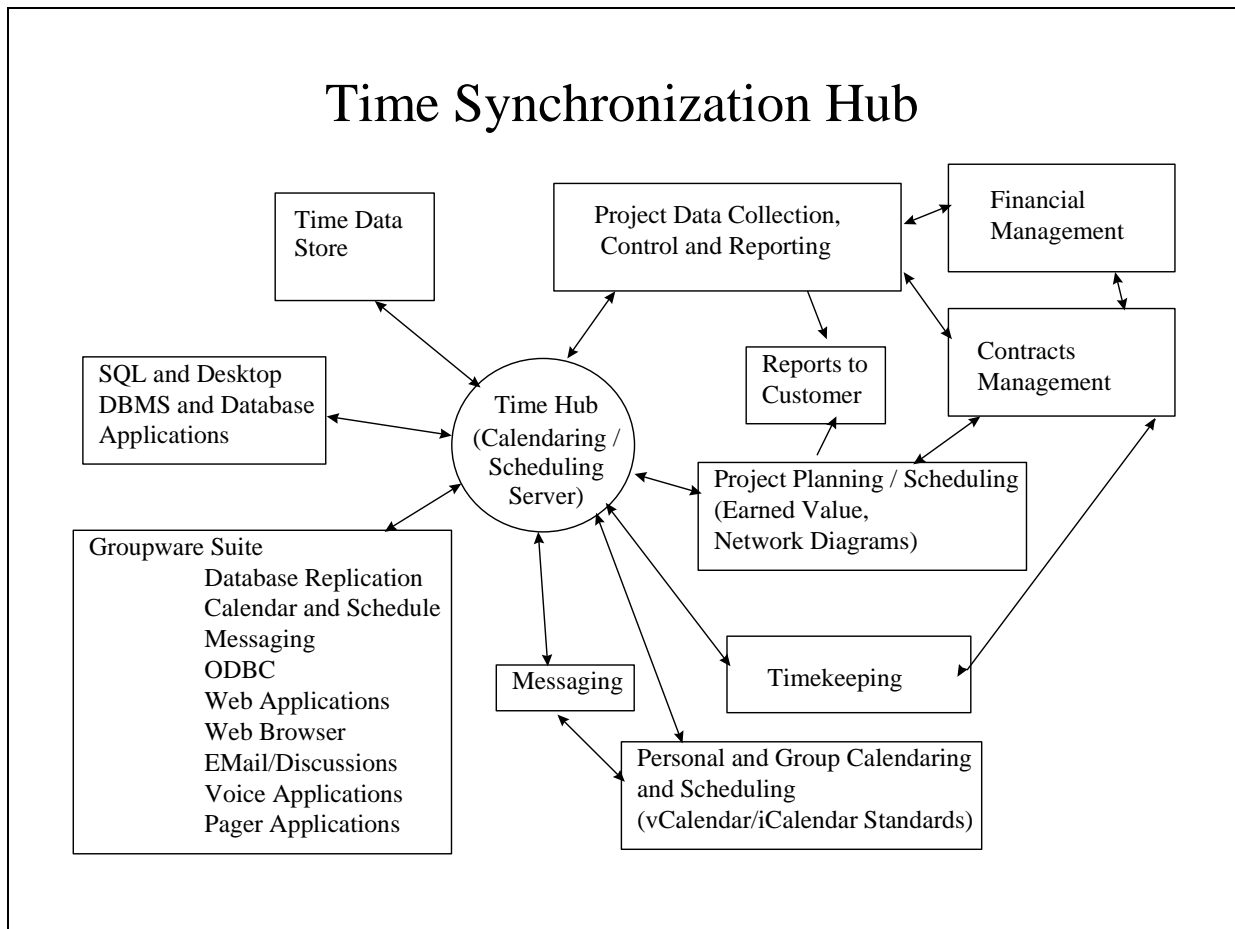
54. Strategic Management Process - Part B



This flow diagram illustrates the activities involved in the implementation phases of strategic management, encompassing improving resource controls, process improvement, and then systems development.

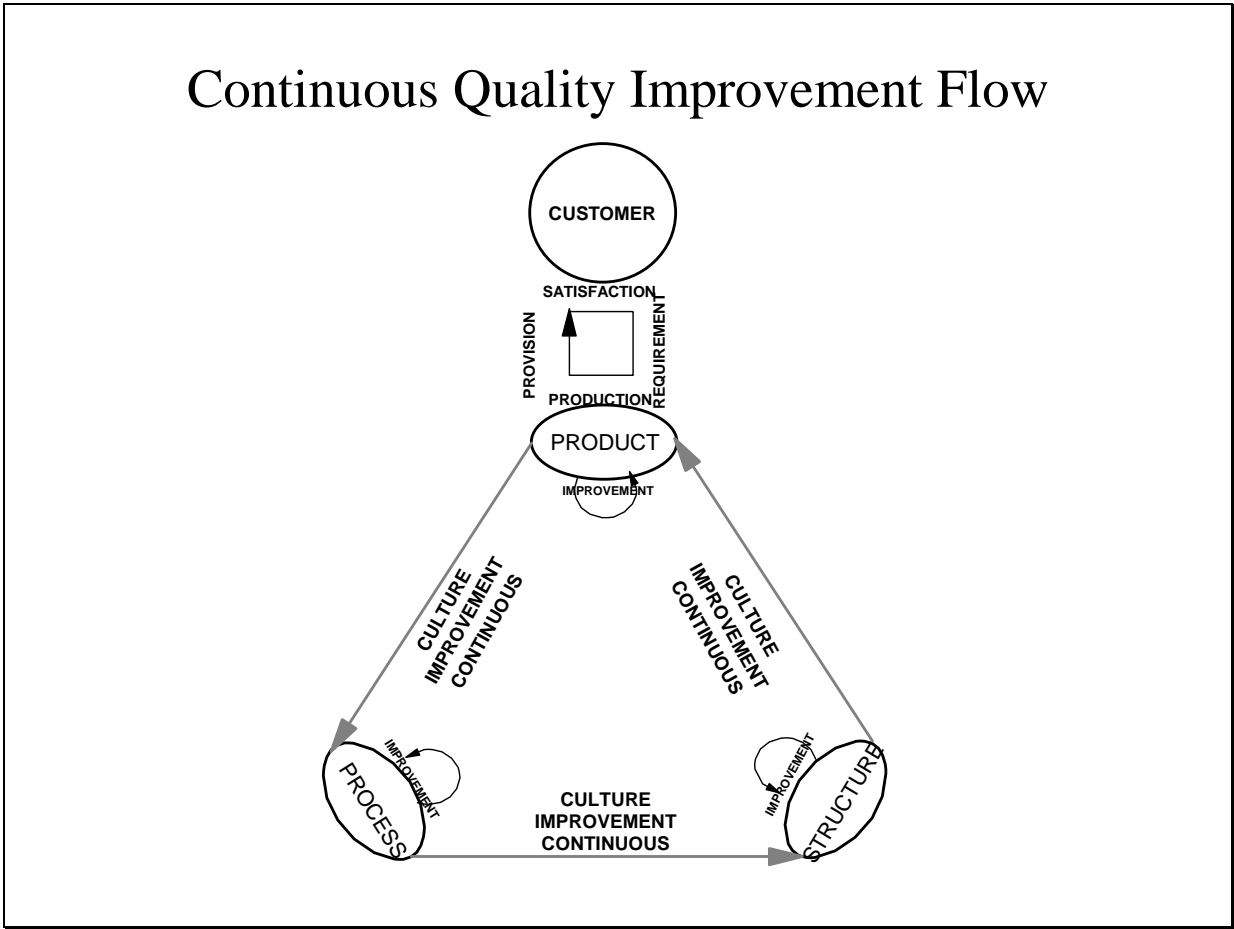
Note that the efforts here change dramatically if the earlier phases of strategic management show a significant change in the environment.

55. Time Synchronization Hub



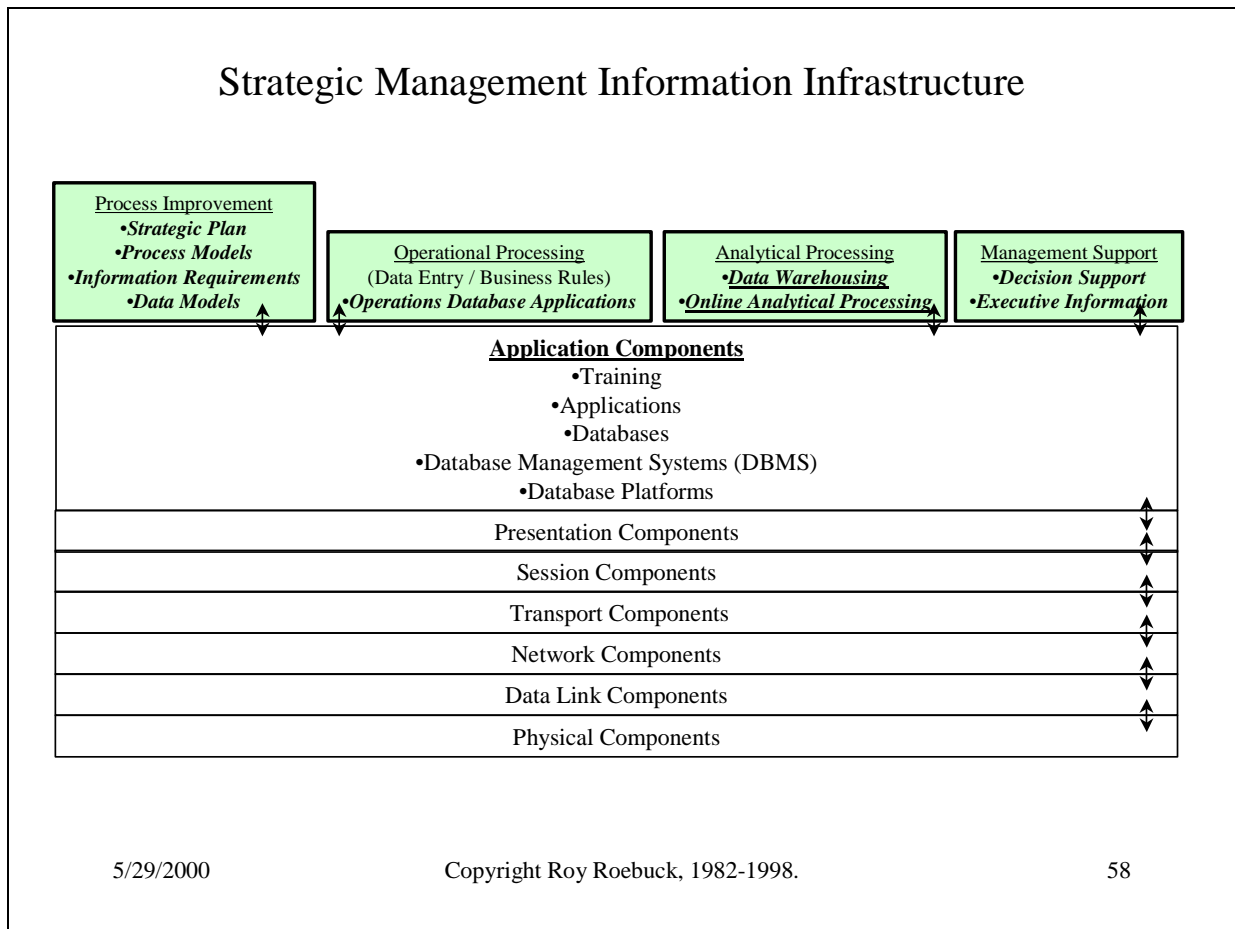
This diagram illustrates some of the technologies that need to share time information for effective strategic management and enterprise improvement.

56. Continuous Quality Improvement Flow

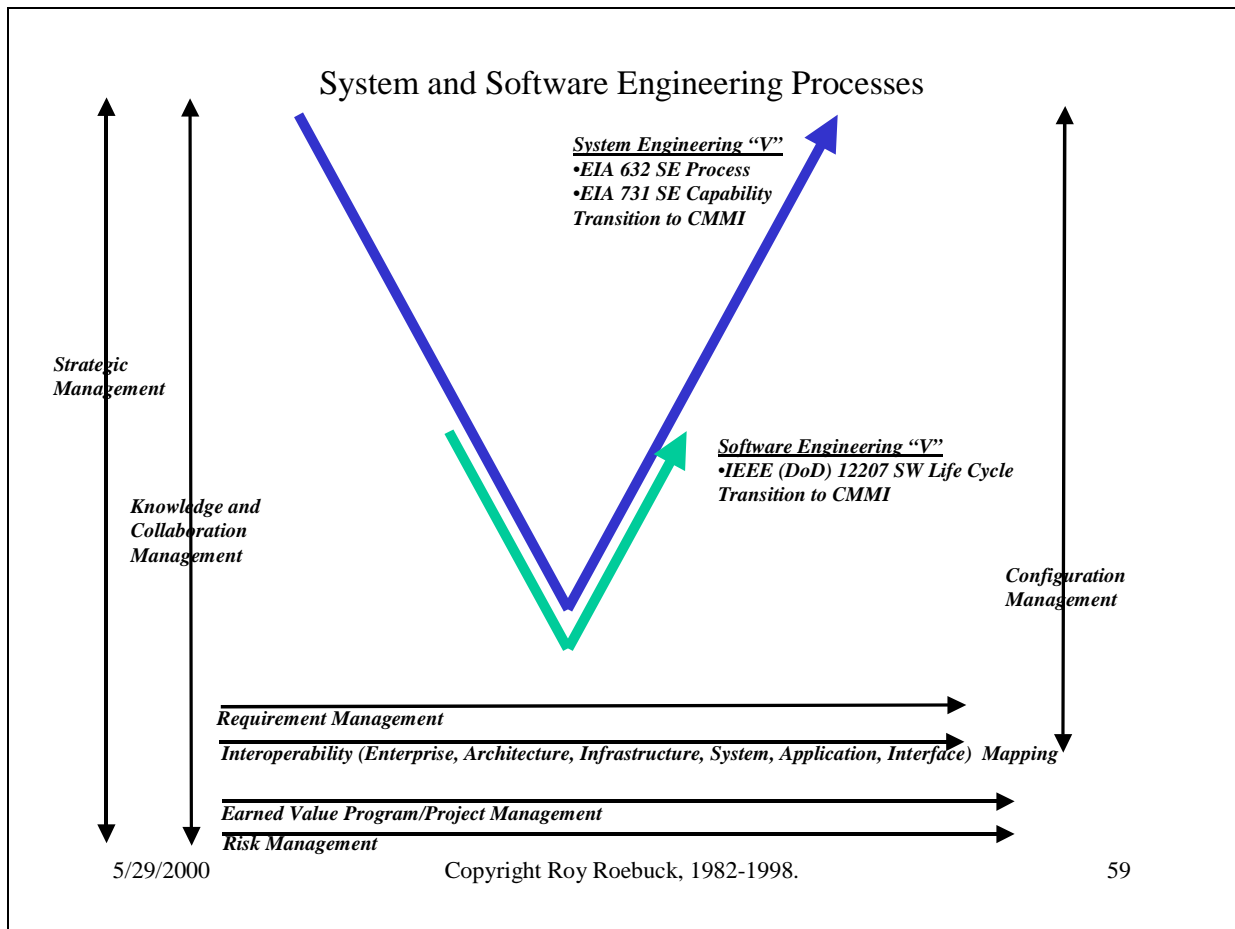


This diagram illustrates those parts of the enterprise that must be continually improved to satisfy the customer and know their expectations.

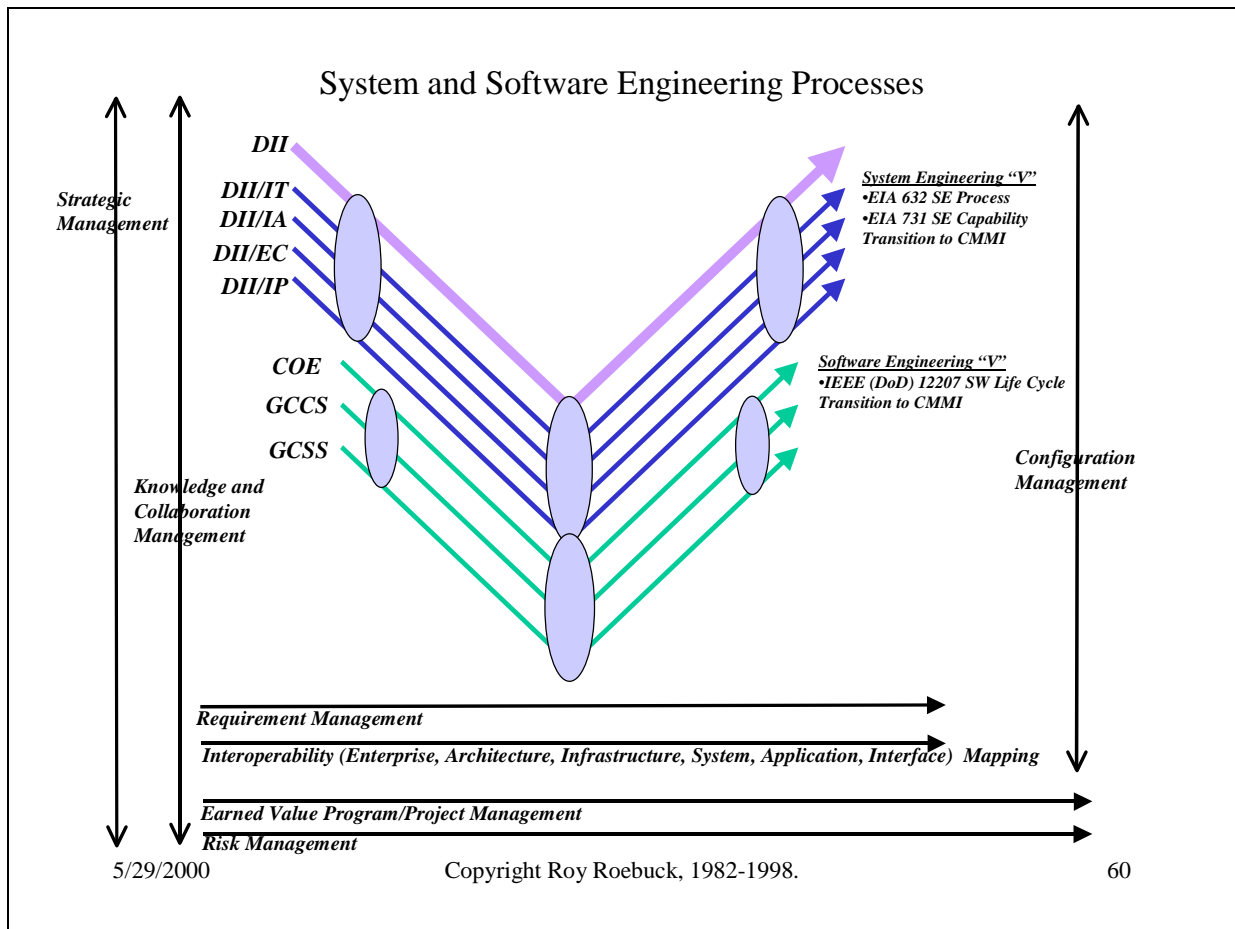
58. Strategic Management Information Infrastructure



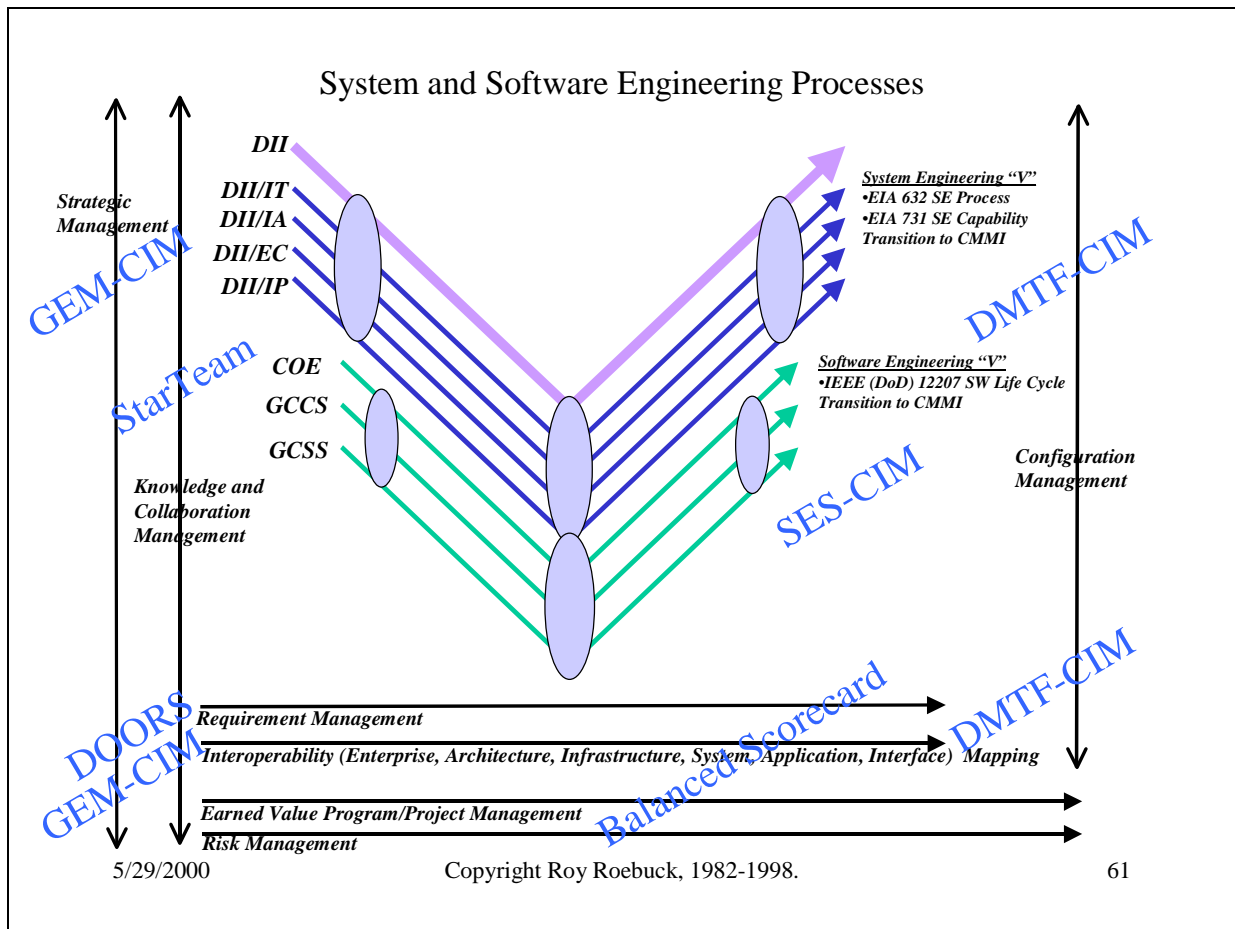
59. System and Software Engineering Processes



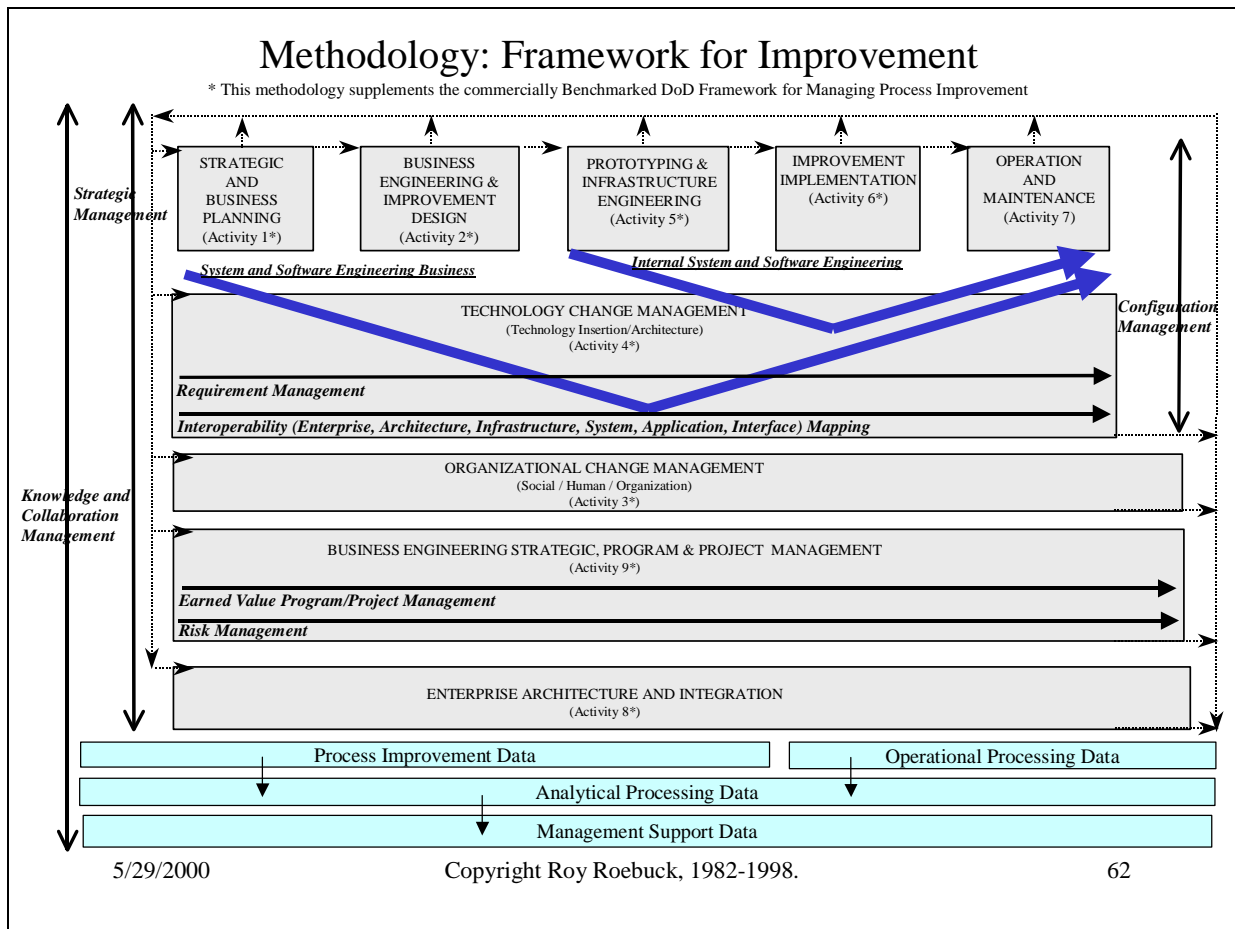
60. System and Software Engineering Processes



61. System and Software Engineering Processes

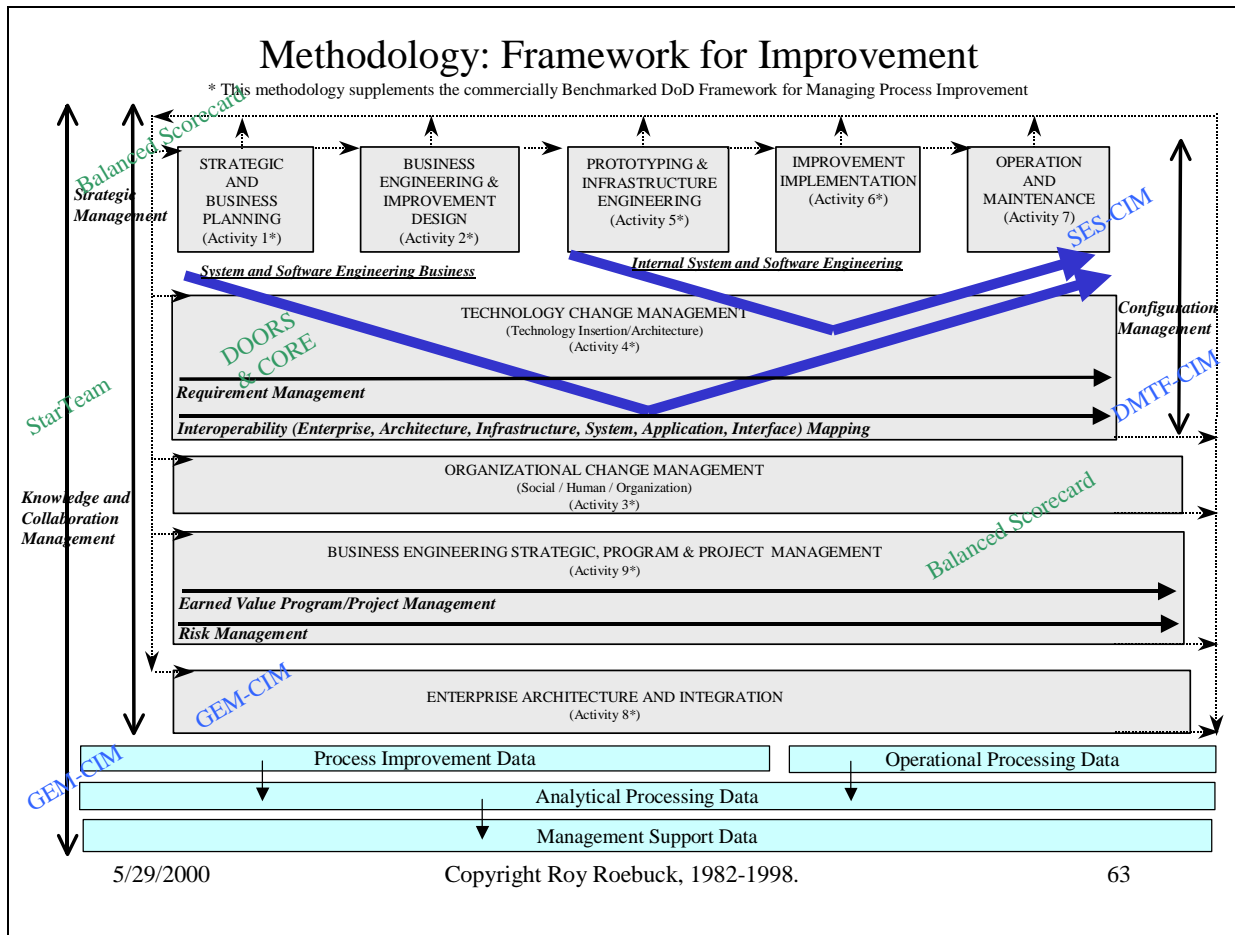


62. Methodology: Framework for Improvement



The system and software engineering activities (V's) of an enterprise would overlay the framework for enterprise improvement as shown here. Additionally, the knowledge and collaborative environment would be based on a comprehensive enterprise data environment.

63. Methodology: Framework for Improvement



Some specific products that support the system and software engineering efforts of internal IT efforts, and those organizations that are in the IT business, are shown here, expanded in their application to encompass the whole enterprise management effort.

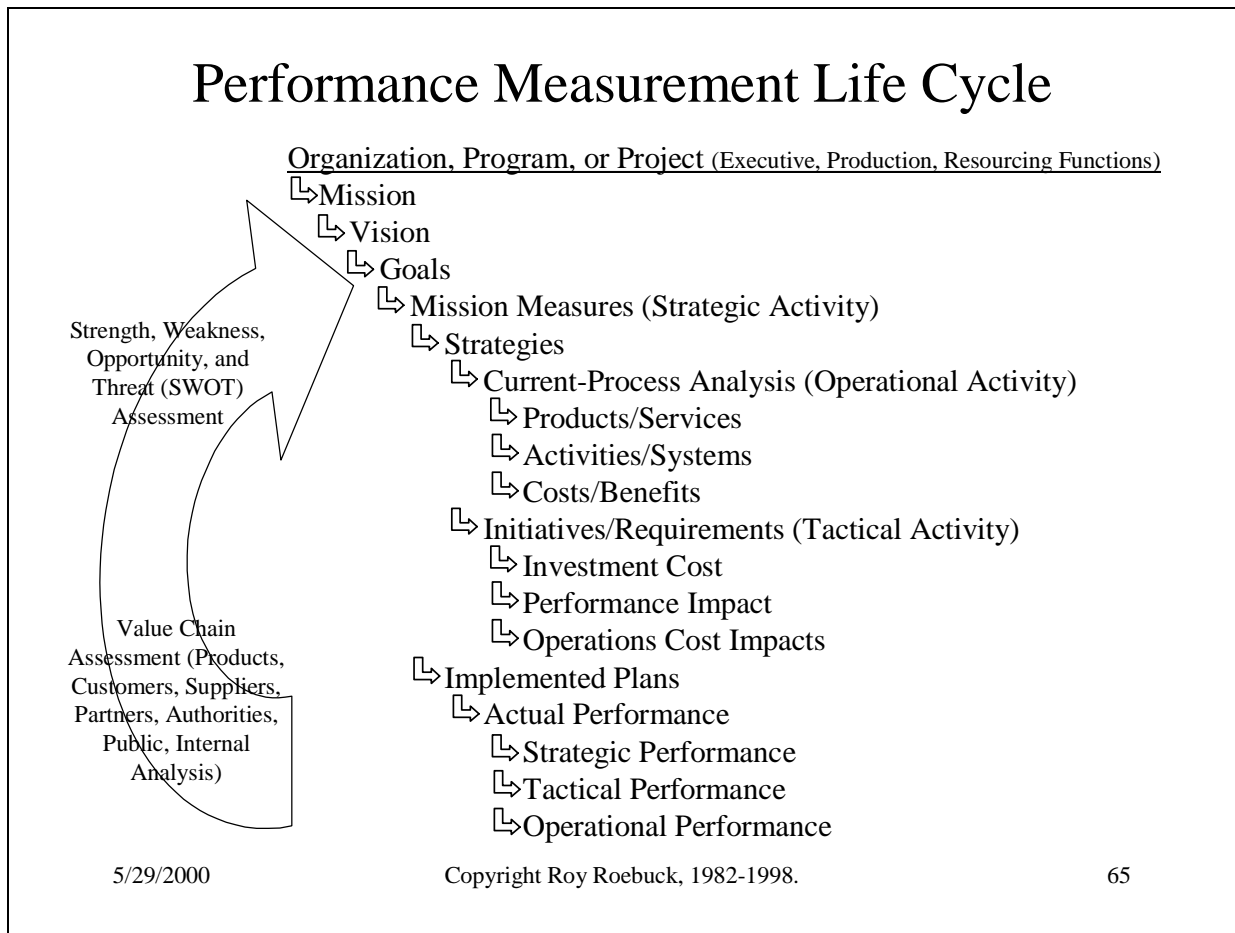
64. Management Context

Management Context

How elements of enterprise management relate to each other.

1. Enterprise Management [GEM-CIM] for Mission (Executive, Production, and Resourcing functions) knowledge base and contextual awareness.
 - 1.1. Enterprise Engineering [ISO 15704] for Mission (Executive, Production, and Resourcing functions) in compliance with ITMRA and other ROI/Outsourcing decision processes.
 - 1.1.1. Enterprise Architecture [DoD Framework for Managing Process Improvement, Strategic Management, Balanced Scorecard, GPRA, BPR] for Mission (Executive, Production, and Resourcing processes) performance improvement efforts.
 - 1.1.1.1. Resource Architectures [GEM-CIM] for Resourcing Functions (Persons, Information, Funds, Skills, Materiel, Facilities, Services, Space, Time, Energy)
 - 1.1.1.1.1. IT Architecture [WBEM, DMTF-CIM, SES/SIS-CIM, OTG-IC, and CMMI methods, e.g., for DoD Information Infrastructure (DII) programs (IT [DISN/DMS/CNT], IP [COE/GCCS/GCSS/IDM], EC [EC/EDA], IA [DefInDepth/PKI]) for Executive, Production, and Resourcing IT function.
 - 1.1.1.1.1.1. System Engineering [EIA 632/731, SE-CMM into CMMI] subset for Executive, Production, and Resourcing infrastructure and functional systems.
 - 1.1.1.1.1.1.1. Software Engineering [IEEE/EIA 12207, SW-CMM into CMMI] for Executive, Production, and Resourcing infrastructure and functional software.
 - 1.1.1.1.1.1.1.1. Executive activities.
 - 1.1.1.1.1.1.1.1.2. Production activities.
 - 1.1.1.1.1.1.1.1.3. Resourcing activities.

65. Performance Measurement Life Cycle



At a minimum, a full life-cycle strategic management capability would provide a solid foundation for effectively and efficiently implementing the process outlined here. It includes not only the information products of a single strategic management process, but also information products (Value Chain analysis, SWOT Assessment) that allow recycling of the strategic management information due to changes or greater awareness of the environment.