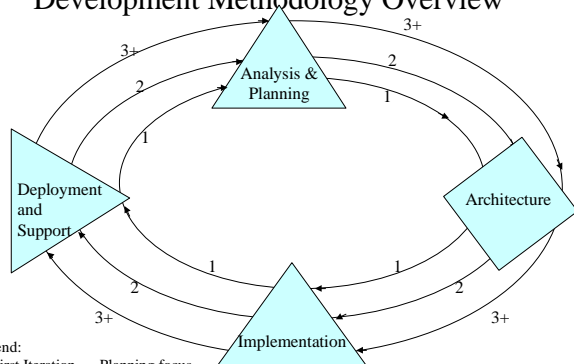


(Re)Engineering Methodology and Application Planning

- Overall Methodology
- Enterprise Application Planning
 - Strategic analysis
 - Sketch a solution approach
 - Cost/benefit analysis

Amjad Umar

Development Methodology Overview



Legend:

1= First Iteration = Planning focus

2 = Second iteration = Solution architecture focus

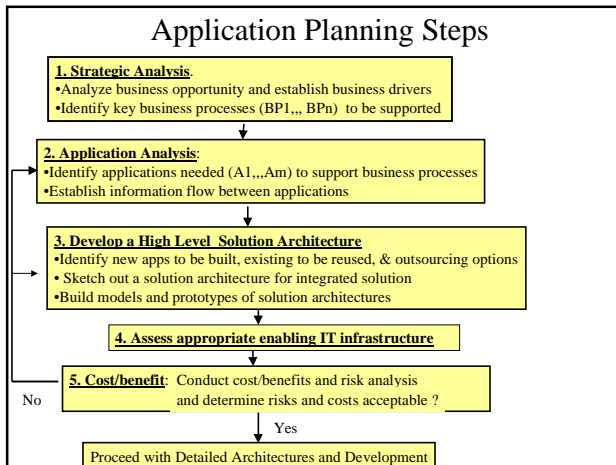
3+ = Third and later iterations = Implementation and deployment focus

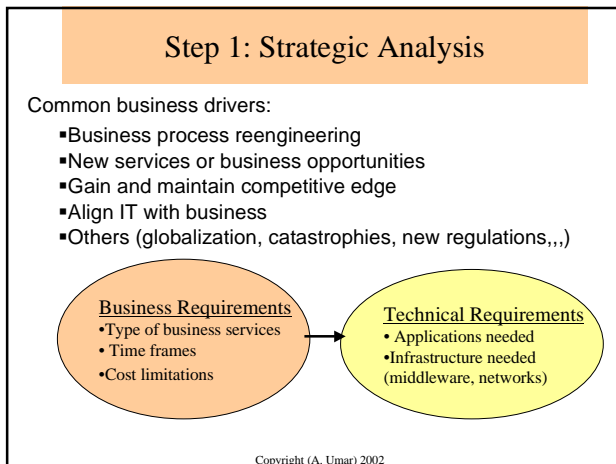
Note: The proportion of effort spent in each activity is represented by the distance covered in each block. For example, first iteration is planning/analysis intensive

Enterprise Application Planning

- Purpose: align the application (re)engineering with business goals.
- “Classical” information systems planning methodologies:
 - IBM's Business Systems Planning [IBM 1978, Zachman 1982]
 - Rockart's Critical Success Factors [Rockart 1982]
 - Nolan's Stage Model [Nolan 1973]
- Extensions of these methodologies (BPR):
 - You should use information technology to improve the performance of a business and cut costs by redesigning work and business processes from the ground up instead of simply automating existing tasks.

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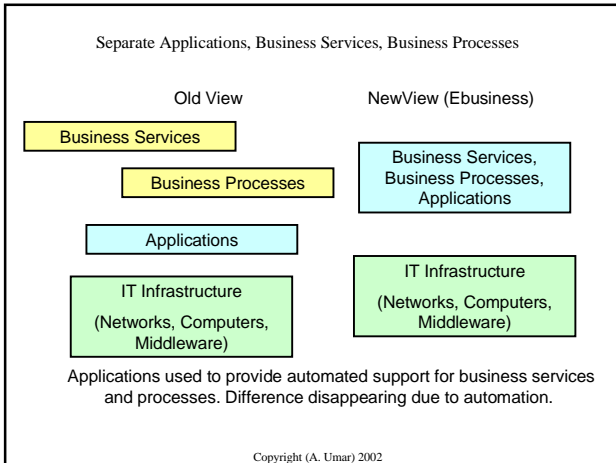


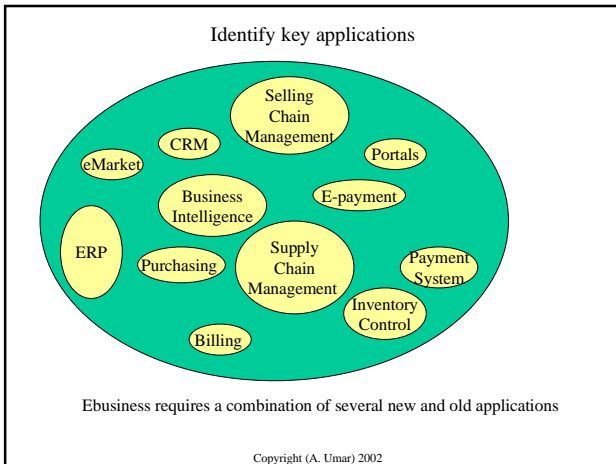
Steps 2: Enterprise Application Analysis

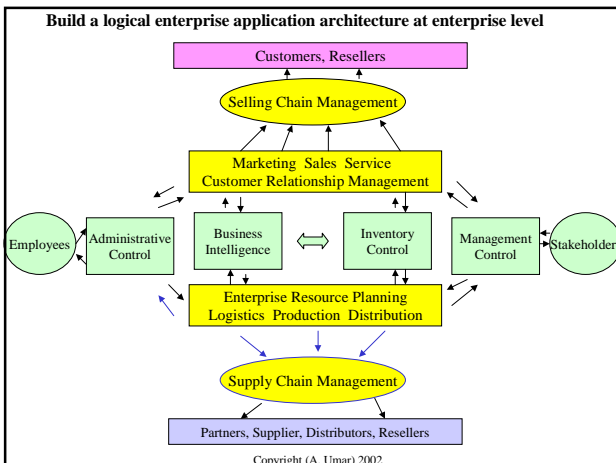
Determine what applications are needed to support business processes

	Business Process1	Business Process2	Business Process3	Business Process4
Application1	x			
Application2		x		
Application3			x	
Application4			x	x
Application5		x	x	x

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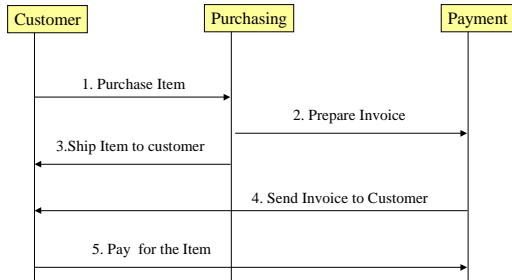






Determine flows between applications

Sequence Diagrams are a common technique for determining flows between systems



Understand interactions, interdependencies

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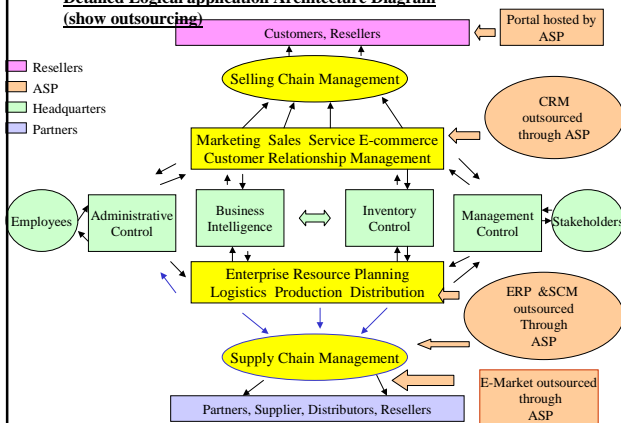
Step 3: Develop a Solution Architecture Sketch

- Given a logical architecture of applications, architect a solution **sketch** (very rough view)
- Key activity: Investigation of the outsource/buy/build/re-use options
 - Outsource:** Should I outsource part or all the applications I need?
 - Buy:** Should off-the-shelf packages be used to satisfy the requirements?
 - Build:** Should the needed applications be developed from scratch (i.e., new user interfaces, new application code, new databases)?
 - Reuse:** Should existing applications/databases be reused
- In reality, the solution is a mixture of these choices.

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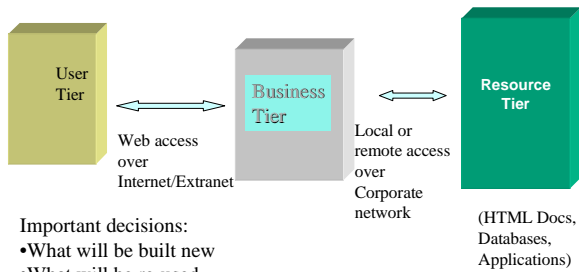
Detailed Logical application Architecture Diagram

(show outsourcing)



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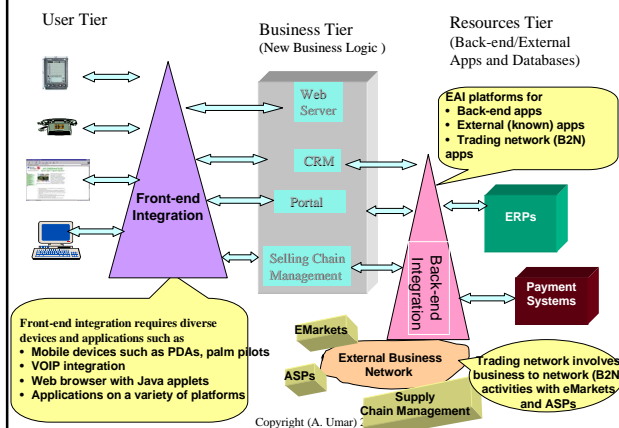
Translation to Solution: Simple View of Application Architectures



- Important decisions:
- What will be built new
 - What will be re-used
 - How will all pieces (new and old) fit together

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Solution Architecture (GENERIC)

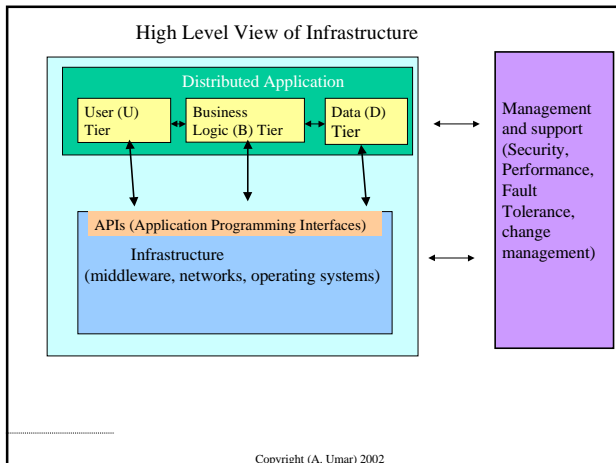


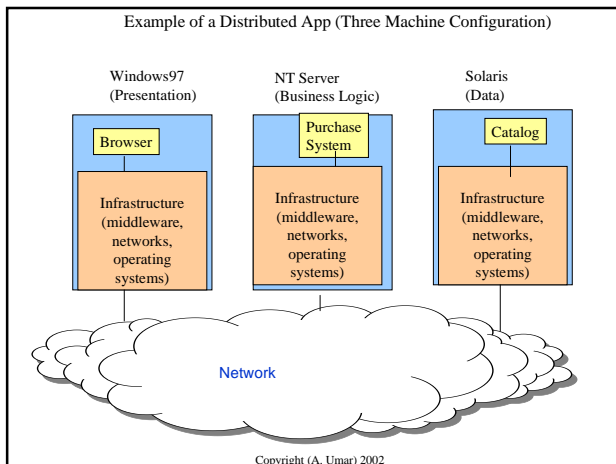
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Step 4: Assess Infrastructure

- Concerned with determining the most appropriate technology needed to develop and deploy the application systems.
- Examples of such infrastructures are
 - Networks
 - Middleware
 - Computing platforms
- Multiple suppliers provide the infrastructure

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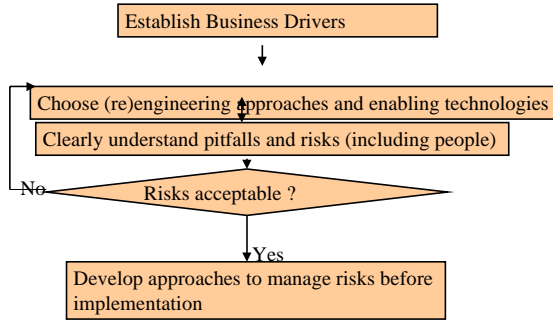


Costs/Benefits/Risks

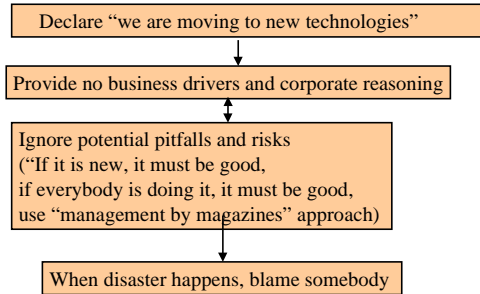
- Main purpose: compare the business benefits with the estimated time, money, computing and human resources needed for the proposed application engineering/reengineering.
- Determine if the proposed engineering/reengineering is cost beneficial and if the risks are manageable.
- Clearly understand the risks and payoffs before launching an effort
- The results of C/S computing can be extrapolated to learn some lessons.

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How To Succeed



How Not To Succeed



Concluding Comments

- An overall methodology is needed
- Typically iterative: Planning, architectures, implementations
- Application Planning is an important first iteration
 - Strategic analysis
 - Sketch a solution approach
 - Cost/benefit analysis

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