

INDUSTRIAL ENGINEERING SUPPORT FOR EMERGING BUSINESS MODELS

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The Business Engineer Role

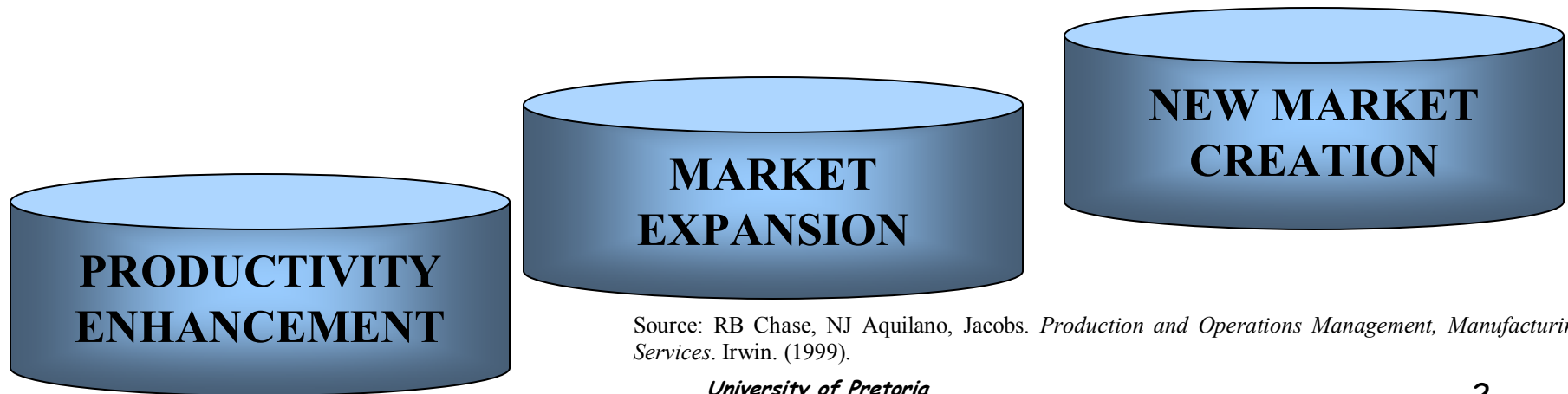
Industrial Engineering Disciplines: Current

Emerging Disciplines

Conclusion

Introduction: Where are things moving to ?

	Function/site			Business Process	Enterprise Processes
Timeline	1920's-1980	1980-1990	1990-1995	1995-2000	2000 & Beyond
Competitive Priorities	Cost	Quality	Delivery	Flexibility	Knowledge Factory
Process Criteria	Scale of efficiencies	Continuous Improvement	Time/ quick response	Economies of scale/ integration	Mass personalisation/ economies of knowledge
Source of value-add	Capital/ muscle power	Local info/ work teams	Supply chain/ cross functional teams	IT enabled processes process expertise & relationships	Intelligent systems Communities of Practice



Source: RB Chase, NJ Aquilano, Jacobs. *Production and Operations Management, Manufacturing and Services*. Irwin. (1999).

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EMERGING BUSINESS MODELS

VALUE CHAIN



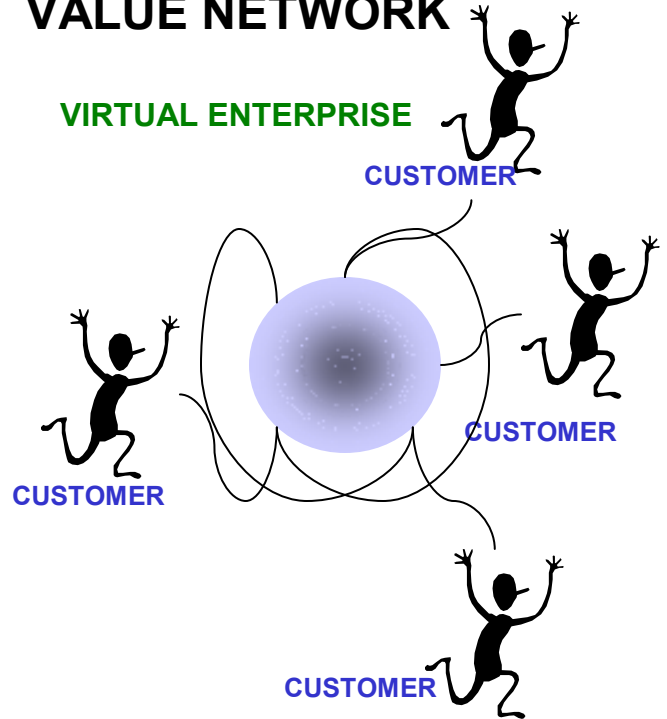
VERTICAL ENTERPRISE



CUSTOMER

VALUE NETWORK

VIRTUAL ENTERPRISE

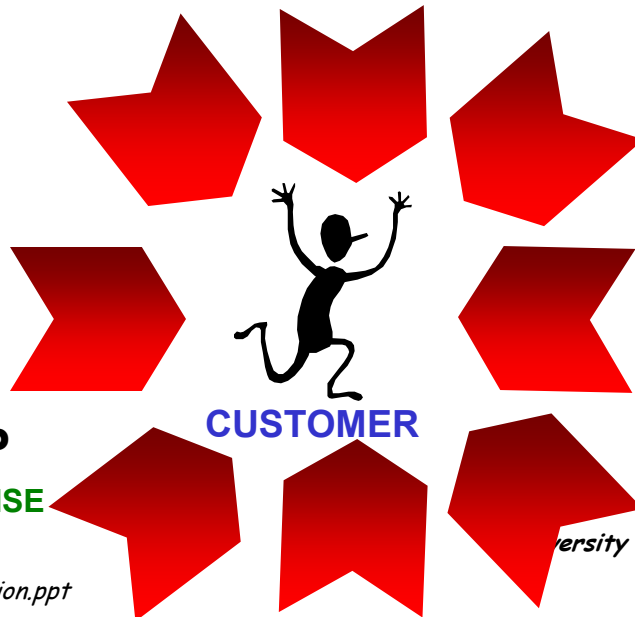


CUSTOMER

CUSTOMER

CUSTOMER

CUSTOMER



CUSTOMER

VALUE SHOP

HYBRID ENTERPRISE

University of Pretoria

IMPACT OF THE MODEL: The Business Lifecycle

REVISE SYSTEM

How do we manage growth and change over time ?

MANAGE THE SUPPLY CHAIN

How do we manage the supply chain ?
How do we manage suppliers & purchasing ?
How do we forecast demand?
How do we manage day-to-day activities of planning, scheduling and operations

BIRTH OF SYSTEM

What are the strategy of the organisation ?
What are the objectives, goals and actions of the organisation?
How do we manage implementation ?

DESIGN THE SYSTEM

How much capacity ?
Where should operations be located ?
How will jobs be performed and measured ?
How will workers be compensated ?
How do we measure learning ?

PRODUCT DESIGN AND PROCESS SELECTION

What is the form of the product ?
How do we design the service ?
How do we develop it ?
What technology do we require ?
How do we achieve quality ?



Value Drivers for Future Organisations



Customer Service



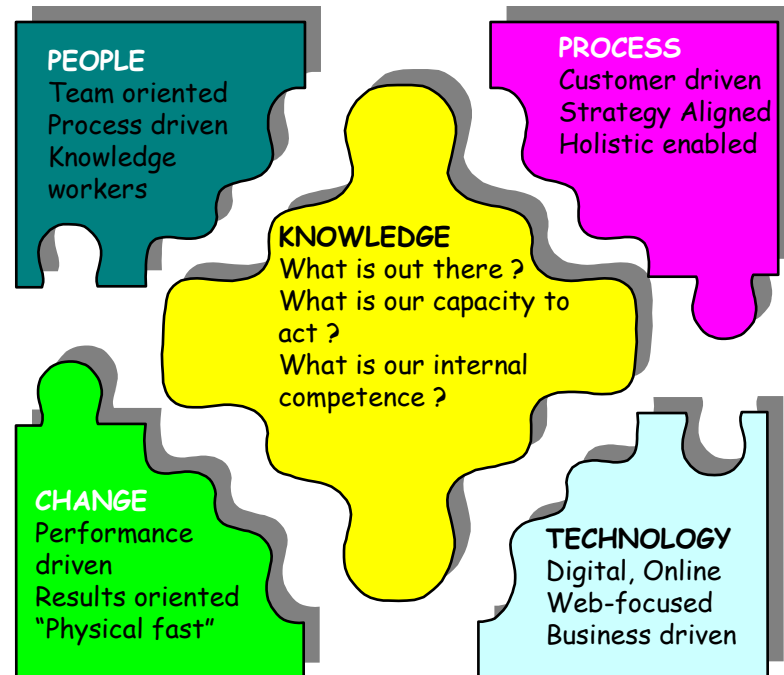
Asset Shift



Digital Technology



Plug-and-Play Business Process





What are key organisational requirements to implement ?

- **Change** is the only fixed variable
- **Change agility** should be part of the organisational culture
- **IT & IS** are the key enablers of future organisations
- This means that we have to have :
 - Organisational **knowledge** about our market, business and employees is of paramount importance
 - A Change **methodology** with short lead times
 - Understanding of how to increase **economic value-added** through change initiatives
 - The ability to change all **organisational elements** in harmony



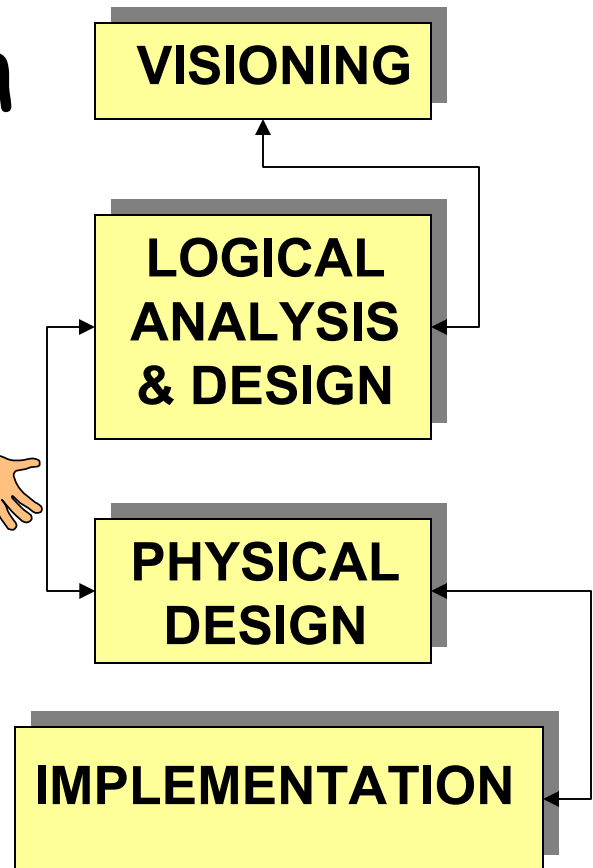
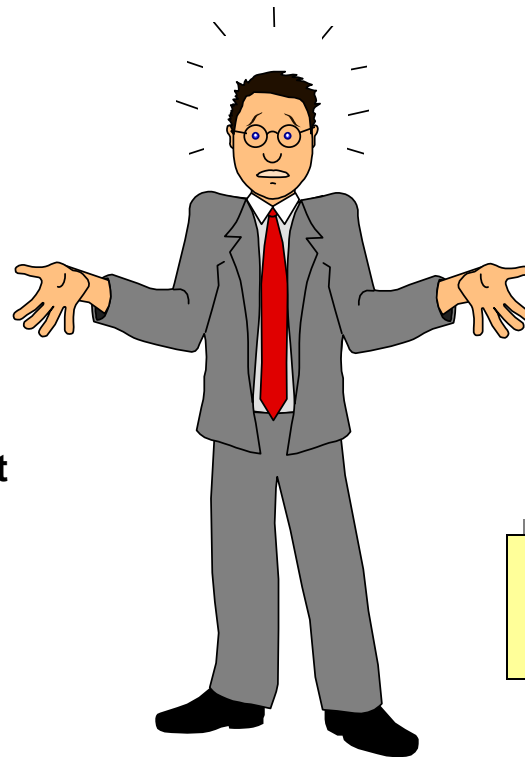
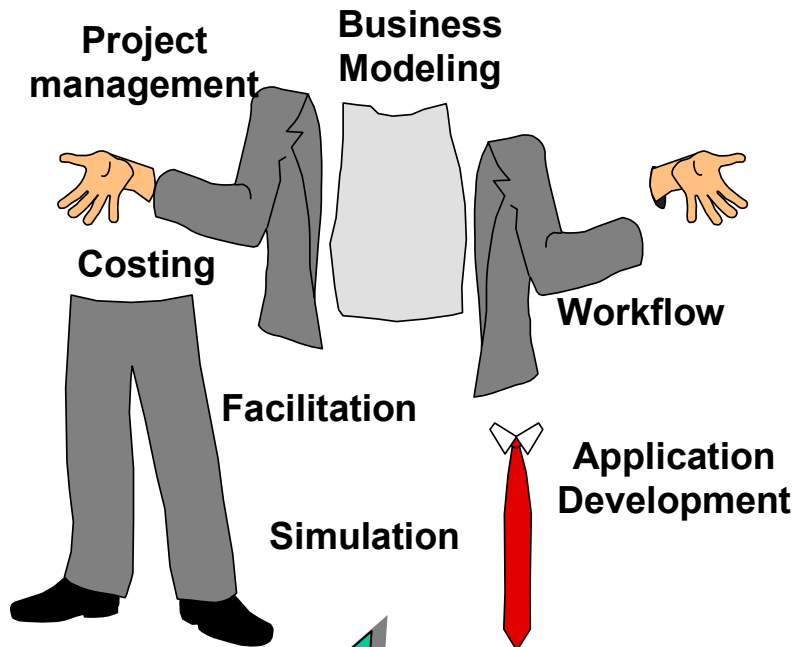
WHAT IS BUSINESS ENGINEERING ?

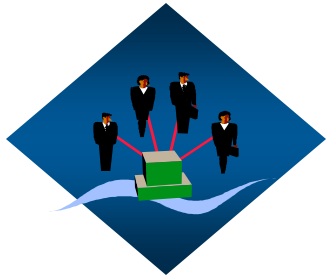
- Engineering is concerned with the economical use of limited resources for the benefit of mankind
- Business Engineering is a systems approach to the analysis, design, development, construction and implementation of holistic business systems (people, processes and resources)
- Business Engineering adds economic value to organisations through **productivity improvement**, **market expansion** or **new market creation** activities
- Key focus areas of BE are **people**, **business processes**, **change** and **knowledge**



Strategic
Process
Planning

The BE Person





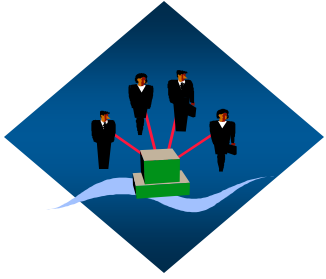
IE Support for Emerging Business Models

• Existing Disciplines

- Operations Management
- Engineering Economy
- Total Quality Management
- Continuous Improvement
- Project Management
- Simulation/resource optimisation
- Information System Development

• New Disciplines

- Performance Management
- Knowledge Management
- Business Architectures
- Change Management
- Business Process Engineering



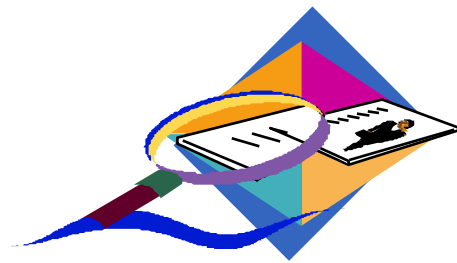
IE Support for Emerging Business Models

• Requirement

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• Support Through ?

- Performance Management
- Knowledge Management
- Business Architectures
- Change Management
- Business Process Engineering
- Operations Management
- Engineering Economy
- Total Quality Management
- Continuous Improvement
- Project Management
- Simulation/resource optimisation
- Information System Development



Conclusion

- Use intangible assets !
- Understand construction of your business !
- Formalise change initiatives !
- Manage business processes !
- Align change to organisational goals !

