



HAMMER AND COMPANY

Enterprises as Engineering Systems

or

In the Footsteps of Molière

MIT Engineering
Systems Symposium

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Some Reports from the Field

- Trucking firm
trying to respond to opportunities
- Electric power company
the challenge of on-time performance
- Equipment manufacturer
problematic order fulfillment
- Property/casualty insurer
handling applications for coverage

The Conundrum

Why should it be so hard to do such simple things?

The Root Cause

The operating processes of large enterprises were never designed -- they merely evolved

The consequences of systematic redesign

Not So Fast

The frustrated
attempt to transform
product development

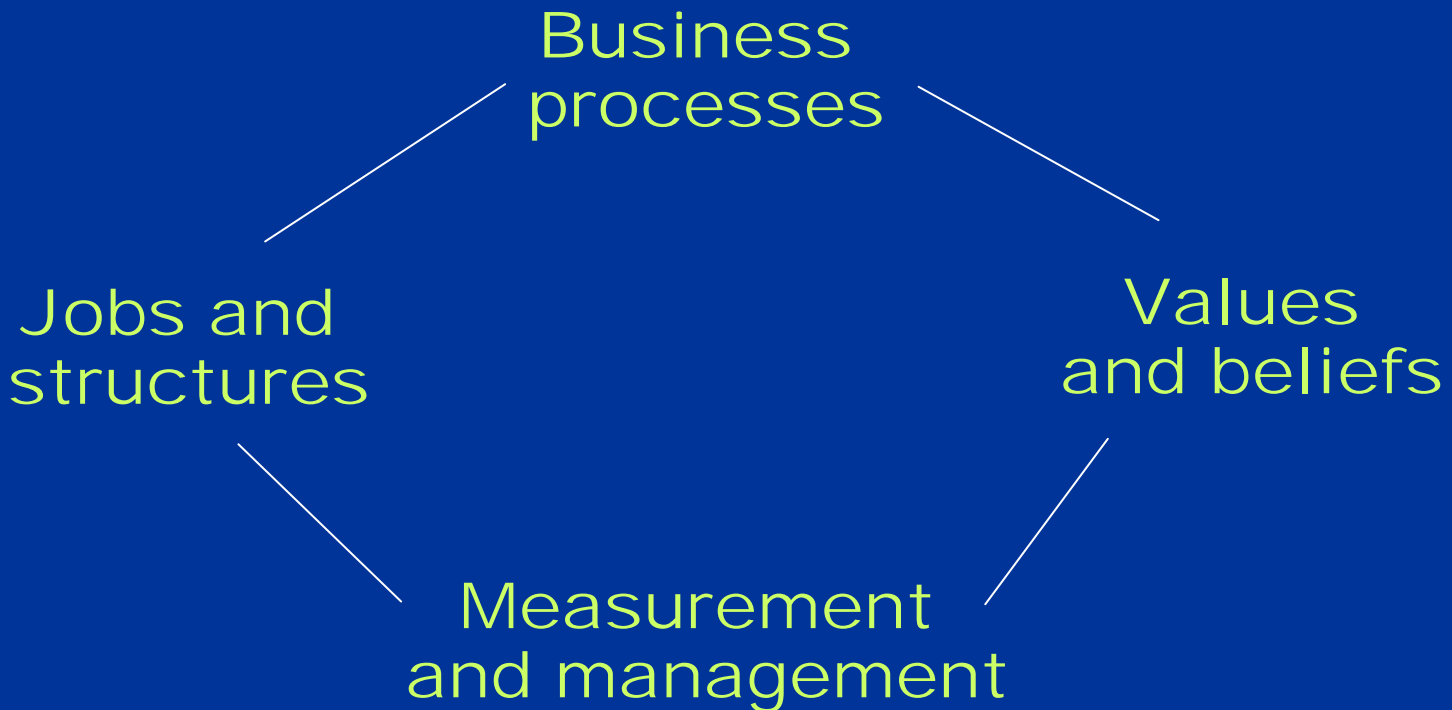
The Epiphany

“We can’t overlay high-performance processes on traditional organizations”

The Catch

Large enterprises
are complex
integrated systems

A Blast from the Past



Source: Reengineering the Corporation, 1993

An Updated View

Enterprise model

Process designs

Performance metrics

Skills and capabilities

Managerial roles

Training and development

Reward and recognition

Information systems

Facilities

Culture

An Enterprise as an Engineering System

- The centrality of design
- Complexity, uncertainty, emergence, architecture
- Integration as the theme

The Opportunity

- The need is large and growing
- There is little institutionalized experience or capability

The Bad News

- The scope is much broader than industrial engineering
- Mathematics doesn't help: outside classical engineering
- Most business schools aren't interested: the triumph of economics and analysis

The Good News

- A community of practitioners is beginning to emerge
- A body of techniques and rules of thumb is taking shape: the harbinger of a discipline
- Some extraordinary successes are taking place

The Implication

The time has come for
enterprise engineering

Concluding Reflections

- Evolutionary design as the paradigm towards a maturity model
- The system as the enterprise as products, people, technology change shaper of strategy
- Design as an ongoing activity self-regeneration through governance processes: design for adaptability
- The limits of the engineering systems metaphor the most essential prerequisite