

ERP (21-550)

*Advanced Manufacturing Laboratory
Department of Industrial Engineering
Sharif University of Technology*

Session #12



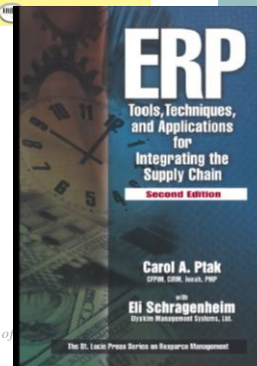
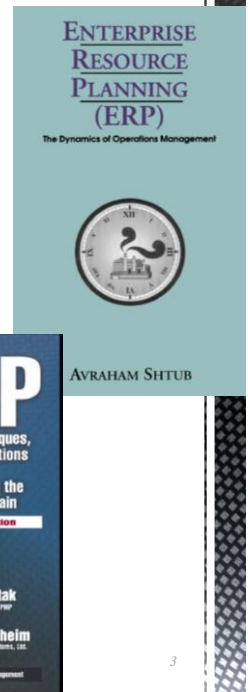
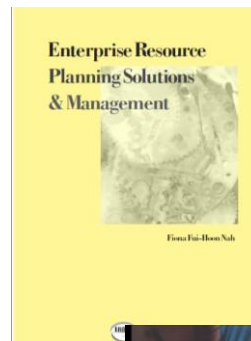
Course Description

- ***Instructor***
 - *Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology*
 - *Email: FValilai@sharif.edu, Tel: 6616-5706*
 - *Website: Sharif.edu/~fvalilai*
- ***Class time***
 - *Sunday-Tuesday* *16:30-18:30*
 - *Wednesday* *09:00-12:00*
- ***Course evaluation***
 - *Mid-term* *(30%)*
 - *Final exam* *(40%)*
 - *Quiz* *(5%)*
 - *Exercise* *(10%)*
 - *ERP Lab* *(15%)*

Course Description (Continued ...)

- **Mid-term session:**
 - Sunday : 8th Azar 1394, 16:30 ~ 18:00
- **Final Exam:**
 - Sunday: 27th Dey 1394, 09:00 ~ 10:30
- **Reference:**
 - Shtub, A., "Enterprise Resource Planning (ERP)- The dynamics of operations management", 2002, Kluwer Academic Publishers
 - Ptak, Carol A., "ERP Tools, Techniques, and Applications for Integrating the Supply Chain", 2004, The CRC Press
 - Fui, F., Nah, H., "Enterprise Resource Planning", 2002, IRM Press

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Course Description (Continued ...)

- **Mid-term session:**
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- **Final Exam:**
 - Sunday: 27th Dey 1394, 09:00 ~ 10:30
- **Reference:**
 - Daniel E. O'leary, "Enterprise Resource Planning Systems Systems, Life Cycle, Electronic Commerce, and Risk", 2000, Cambridge University Press

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ERP (21-550), Session #12

Enterprise Resource Planning Systems

Systems, Life Cycle, Electronic Commerce, and Risk



Daniel E. O'Leary

CAMBRIDGE www.cambridge.org/978052179152

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Course Description (Continued..)

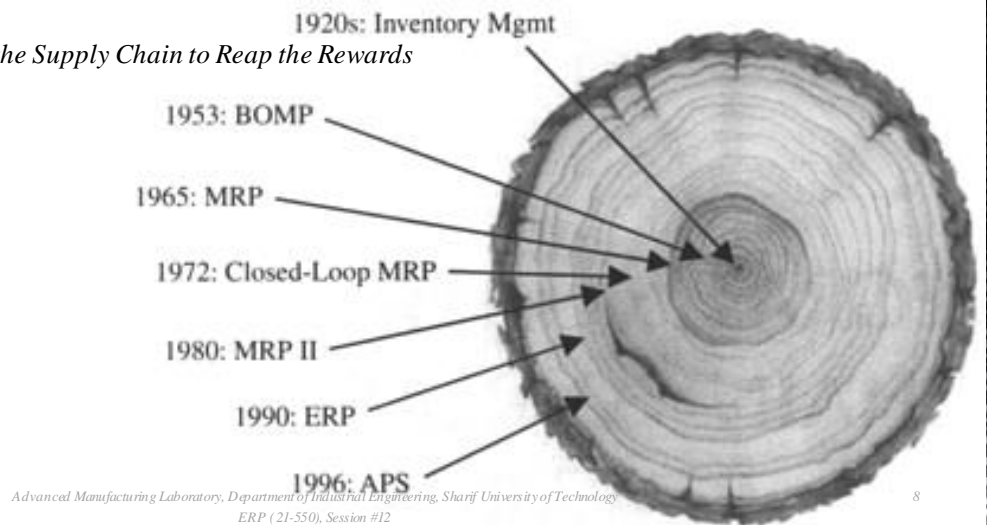
- *Contents:*
 - *Enterprise Management*
 - *Operations Management*
 - *The Evolution of ERP Systems: A Historical*
 - *Organizations and organizational structures*
 - *Scheduling*
 - *Purchasing and inventory management*
 - *Marketing considerations*
 - *ERP selection and implementation*

Course Description (Continued..)

- *Contents:*
 - *Enterprise Management*
 - *History of Enterprise Resource Planning*
 - *The Theory of Constraints and ERP*
 - *Sales and Operations Planning*
 - *Buffer Resource Strategy*
 - *Enterprise Resource Management*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *Strategic Sourcing and Procurement*

Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*



Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *At the center of this approach is inventory.*
 - *All assumptions in the system center around inventory—inventory must go into and out of stock, all materials will be available at the time of order release, all orders will be completed on time, etc.*
 - *Unfortunately with the advent of the Internet, the fundamental rules have changed.*
 - *Central to the new business model are the customers—building what they want, when they want it.*

Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *The Supply Chain Operations Reference (SCOR) model was developed and endorsed by the Supply Chain Council.*
 - *This framework contains:*
 - *Standard descriptions of management processes*
 - *A framework of relationships among the standard processes*
 - *Standard metrics to measure process performance*
 - *Management practices that produce best in class performance*
 - *Standard alignment to software features and functionality*

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Enterprise Management

- *Contents:*



Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *The SCOR model includes:*
 - *All customer interactions, from order entry through the paid invoice*
 - *All product (physical, material, and service) transactions, from the supplier's supplier to the customer's customer including equipment, supplies, spare parts, bulk product, software, etc.*
 - *All market interactions, from the understanding of aggregate demand to the fulfillment of each order*

Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *The SCOR model does not include:*
 - *Sales and marketing (demand generation)*
 - *Research and technology development*
 - *Product development*
 - *Some elements of post-delivery customer support*

Enterprise Management

- **Contents:**
 - *Integrating the Supply Chain to Reap the Rewards*
 - *The processes are further detailed into the process elements, tasks, and activities.*
 - *The supply chain configuration is driven by:*
 - *“Deliver” channels, inventory deployment and products*
 - *“Make” production sites and methods*
 - *“Source” locations and products*
 - *“Plan” levels of aggregation and information sources*
 - *The real results from Supply Chain Management come from when these processes are integrated throughout the entire supply chain from the supplier’s supplier to the customer’s customer*

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Enterprise Management

- **Contents:**
 - *Integrating the Supply Chain to Reap the Rewards*

Article

Information Systems Frontiers

December 2001, Volume 3, Issue 4, pp 471-476

First online:

Supply Chain Operations Reference Model Version 5.0: A New Tool to Improve Supply Chain Efficiency and Achieve Best Practice





Scott Stephens



Article Metrics


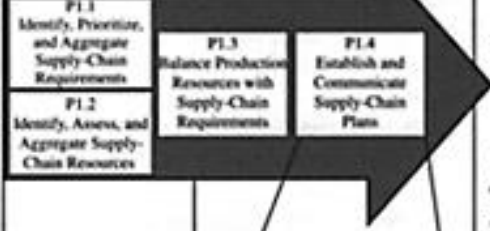

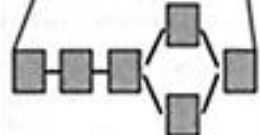
 Citations

SCOR Contains Three Levels of Process Detail

		Level			
		#	Description	Schematic	Comments
↑ Operations Reference-model	1 	1	Top Level (Process Types)		Level 1 defines the scope and content for the Supply Chain Operations Reference-model. Here basis of competition performance targets are set.
	2 	2	Configuration Level (Process Categories)		A company's supply chain can be "configured-to-order" at Level 2 from 30 core "process categories." Companies implement their operations strategy through the configuration they choose for their supply chain.

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↓ Supply-Chain Operation	3 	3	Process Element Level (Decompose Processes)		<p>Level 3 defines a company's ability to compete successfully in its chosen markets, and consists of:</p> <ul style="list-style-type: none"> • Process element definitions • Process element information inputs, and outputs • Process performance metrics • Best practices, where applicable • System capabilities required to support best practices • Systems/tools <p>Companies "fine tune" their Operations Strategy at Level 3.</p>
	4 	4	Implementation Level (Decompose Process Elements)		Companies implement specific supply-chain management practices at this level. Level 4 defines practices to achieve competitive advantage and to adapt to changing business conditions.

↑
Not in Scope

Enterprise Management

- **Contents:**
 - *Integrating the Supply Chain to Reap the Rewards*
 - *Supply chain competitiveness*
 - *The big return on ERP investment and the future revenue and profit growth come from integrating the enterprise to its entire supply chain.*
 - *No longer will a company compete solely on its own merits. An enterprise will compete in the market based on the overall strength of its supply chain and how well that supply chain is aligned to solving real customer issues.*
 - *Supply chains will compete with each other for market share and profits.*

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Enterprise Manu

- **Contents:**
 - *Integrating the Supply*

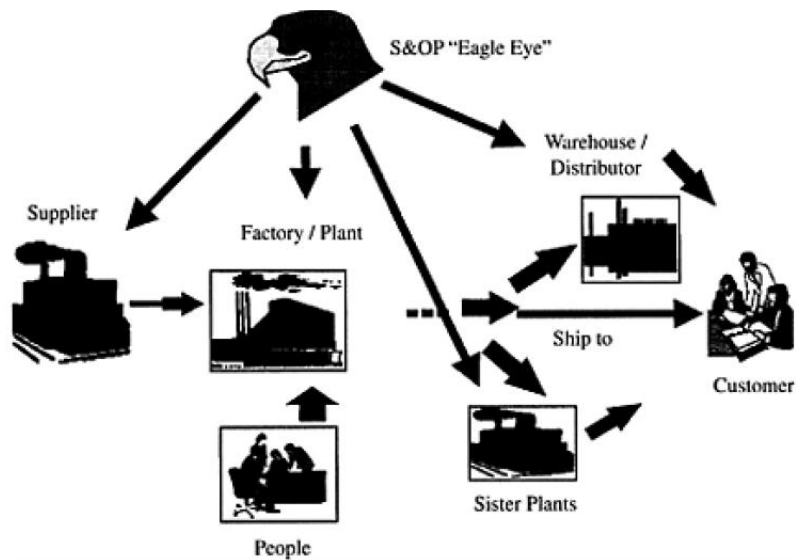


Figure 6.5 Sales and Operation Planning's role in Supply Chain Management. (From Richard C. Ling and Andy Coldrick, copyright 2003. With permission.)

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Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *Plossl's seven supply chain points*
 - *Satisfy the customer's real needs, not wants*
 - *Understand how the real world works*
 - *Have a complete integrated system*
 - *Use accurate data*
 - *Manage cycle time*
 - *Eliminate non value-added activity*
 - *Use fully qualified people*

Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *Performance Measurements*
 - *Delivery performance*
 - *Fill rate by line item*
 - *Order fulfillment lead-time*
 - *Perfect order fulfillment lead-time*
 - *Upside production flexibility*
 - *Supply chain management cost*

Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *Performance Measurements*
 - *Warranty cost as a % of revenue*
 - *Value added per employee*
 - *Inventory days of supply*
 - *Cash to cash cycle time*
 - *Asset turns*

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Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*
 - *Performance Measurements*

Level 1 Performance Metrics	Customer-Facing			Internal-Facing	
	Reliability	Responsiveness	Flexibility	Cost	Assets
Performance Attribute					
Delivery performance	✓				
Fill rate	✓				
Perfect order fulfillment	✓				
Order fulfillment lead time		✓			
Supply-chain response time			✓		
Production flexibility			✓		
Supply chain management cost				✓	
Cost of goods sold				✓	
Value-added productivity				✓	
Warranty cost or returns processing cost				✓	
Cash-to-cash cycle time					✓
Inventory days of supply					✓
Asset turns					✓

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Enterprise Management

- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*

Original Paper

Central European Journal of Operations Research
December 2014, Volume 22, Issue 4, pp 591-622

First online: 09 April 2013

Towards a multi-objective performance assessment and optimization model of a two-echelon supply chain using SCOR metrics

Weihua Zhang, Marc Reimann 



Article Metrics

 Citations

Enterprise Management


- *Contents:*
 - *Integrating the Supply Chain to Reap the Rewards*

Article

Journal of Intelligent Manufacturing
February 2013, Volume 24, Issue 1, pp 113-132

First online: 17 June 2011

A SCOR based approach for measuring a benchmarkable supply chain performance

Batuhan Kocaoğlu  , Bahadır Gülsün, Mehmet Tanyaş

