

## *ERP (21-550)*

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

*Session #9*



## *Course Description*

### ▪ *Instructor*

- *Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology*
- *Email: [FValilai@sharif.edu](mailto:FValilai@sharif.edu), Tel: 6616-5706*
- *Website: [Sharif.edu/~fvalilai](http://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 : 8<sup>th</sup> Azar 1394, 16:30 ~ 18:00
- **Final Exam:**
  - Sunday: 27<sup>th</sup> 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

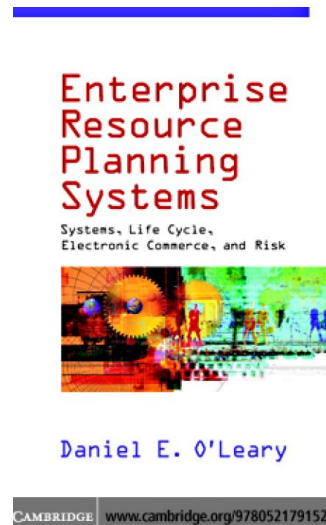
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- **Reference:**
  - Daniel E. O'leary, "Enterprise Resource Planning Systems Systems, Life Cycle, Electronic Commerce, and Risk", 2000, Cambridge University Press



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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:*
  - *Sales and Operations Planning implementation*
    - *Sales and Operations Planning is implemented in three phases:*
      - *Developing the foundation*
      - *Integrating and streamlining*
      - *Competitive advantage*
  - *These three phases normally can be expected to take 12 to 18 months to complete.*

## *Enterprise Management*

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *The fundamentals of Sales and Operations Planning include the integration of the functional views of the organization.*
    - *This process determines product families and planning horizons.*
    - *It also establishes the policies and procedures to institutionalize Sales and Operations Planning into the enterprise.*
    - *The integration of the functional views of the enterprise can be a real challenge*

## Enterprise Management

- Contents:
  - Sales and Operations Planning implementation

Typical Monthly Time Table

	Demand Planning	Integrated Reconciliation of Business Plans	
New Product Planning	Supply Planning		
	Financial Planning		Senior Management Business Review
Week 1	Week 2	Week 3	Week 4

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## Enterprise Management

- Contents:
  - Sales and Operations Planning implementation

 <p>ELSEVIER</p>	<h3>Journal of Operations Management</h3>	<a href="#">Cover image</a>
<p>Volume 29, Issue 5, July 2011, Pages 434–448</p>		
<p>Special Issue on Field Research in Operations and Supply Chain Management</p>		

## Cross-functional alignment in supply chain planning: A case study of sales and operations planning

Rogelio Oliva<sup>a, b</sup>,  , Noel Watson<sup>b</sup>, 

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *From the demand planning perspective, the demands are seen in terms of units by part number and revenue.*
    - *The supply planning function sees this demand as consuming capacity in terms of cash, hours, or other unit of measure required to provide the raw materials and resources needed to make the desired product.*
    - *The financial planners see the organization strictly in terms of money.*
    - *New product planners are concerned about scarce resources and timing for competing projects.*
    - *The phase I scope of S&OP must be clearly defined by the senior management review process.*

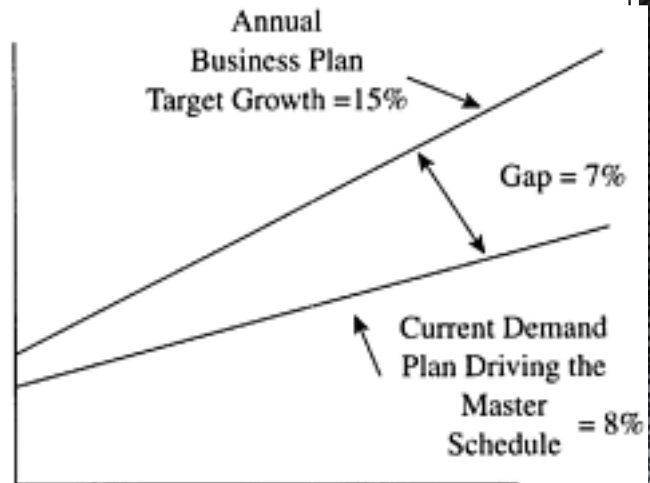
## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Most standard ERP systems do not have an adequate Sales and Operations Planning capability.*
    - *It is no wonder that developing a Sales and Operations Planning process rarely makes it onto the ERP project implementation schedule.*
    - *Companies with a well developed S&OP process significantly reduce the cost of their ERP implementation because of the focus and definition S&OP brings to their organizations.*
    - *The ability for the organization to integrate all functional areas into one enterprise-wide plan provides visibility for all managers on how their decisions impact the overall results and not just their own department.*

## Enterprise Management

### ▪ Contents:

- Sales and Operations Planning implementation
  - At its very core, the Sales and Operations Planning process is the balance of supply and demand.
  - The variables that must be considered in this balancing act are inventory, material supply constraints, management constraints, lead-time to the customer, actual demand from the customer, new product timing and volume, and the establishment of priorities for customers and products.



## Enterprise Management

### ▪ Contents:

- Sales and Operations Planning implementation
  - Most standard ERP systems do not have an adequate Sales and Operations Planning capability.
  - It is no wonder that developing a Sales and Operations Planning process rarely makes it onto the ERP project implementation schedule.
  - Companies with a well developed S&OP process significantly reduce the cost of their ERP implementation because of the focus and definition S&OP brings to their organizations.
  - The ability for the organization to integrate all functional areas into one enterprise-wide plan provides visibility for all managers on how their decisions impact the overall results and not just their own department.

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Demand Planning*
    - *Demand planning is the main driver in Sales and Operations Planning.*
  - *Management must determine the objectives, strategies, and expectations of a product as it moves through its product life cycle.*
  - *The life cycle begins with an introduction, moves to the growth phase and then to a steady state, and finally progresses to the decline phase.*
  - *A diversity of products is needed so that the company does not find itself in a major product-rebuilding situation.*

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Supply Planning*
    - *Supply planning defines the resources and strategies available to meet demand.*
  - *These supply strategies must align the external suppliers and the internal facilities, labor, and materials to deliver the products that the customer demands.*
  - *The supply planning process includes planning resources and eliminating undesired constraints.*
  - *In addition, an overall plan must be developed to meet seasonal demand peaks in such a way that the company ensures the best financial results.*
  - *The amount of desired flexibility is defined and integrated with the company's market strategy.*



## Enterprise Management

### ▪ Contents:

- *Sales and Operations Planning implementation*
  - *Financial Planning*
  - *Even nonprofit companies work toward operational surplus.*
  
- *Financial planning is where the business plan, the inventory plan, and the revenue, costs, and margins are brought into alignment.*
  
- *Financial planning must be based on current plans for proper financial projections of revenue and inventory.*
  
- *Since the final measure of a company's effectiveness is financial, this integration of the Sales and Operations Plan is essential for all departments to improve their understanding of the financial impact to the enterprise from decisions made in their particular areas*

## Enterprise Management

### ▪ Contents:

- *Sales and Operations Planning implementation*
  - *Senior Management Business Review*
  - *The monthly review by the senior management team should include a review of performance measures such as revenue, cost, customer service, sales plan performance, forecast accuracy, new product launch, and supply performance.*
  
- *After this review, the key issues by customer, market segment, product family, or resource are identified and discussed; the review of multiple scenarios for the business is also conducted.*
  
- *Alternative plans, including the opportunities and risks associated with those alternatives, are also addressed.*
  
- *The Sales and Operations Planning process brings customer demands, business plans, and the enterprise strategic thrust into alignment.*

## Enterprise Management

- **Contents:**
  - *Sales and Operations Planning implementation*
    - *Sales and Operations Planning is implemented in three phases:*
      - *Developing the foundation*
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      - *Competitive advantage*
  - *These three phases normally can be expected to take 12 to 18 months to complete.*

## Enterprise Management

- **Contents:**
  - *Sales and Operations Planning implementation*



### International Journal of Production Economics

Volume 151, May 2014, Pages 20–36



## Reconciling sales and operations management with distant suppliers in the automotive industry: A simulation approach

Lâm Laurent Lim<sup>a, b</sup>,    , Gülgün Alpan<sup>b</sup>,  , Bernard Penz<sup>b</sup>,  